UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended March 31, 2019

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

For the transition period from to

Commission File Number 001-38267

RIBBON COMMUNICATIONS INC.

(Exact name of Registrant as specified in its charter)

DELAWARE	**82-1669692**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

4 Technology Park Drive, Westford, Massachusetts 01886
(Address of principal executive offices) (Zip code)

(978) 614-8100
(Registrant's telephone number, including area code)

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

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

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

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

Large accelerated filer o	Accelerated filer x	Non-accelerated filer o
Smaller reporting company o	Emerging growth company o	

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) o

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

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

Title of each class	**Trading Symbol(s)**	**Name of each exchange on which registered**
Common Stock, par value $0.0001	RBBN	The Nasdaq Global Select Market

As of April 26, 2019, there were 110,554,818 shares of the registrant's common stock, $0.0001 par value per share, outstanding.

RIBBON COMMUNICATIONS INC.
FORM 10-Q
QUARTERLY PERIOD ENDED MARCH 31, 2019
TABLE OF CONTENTS

Cautionary Note Regarding Forward-Looking Statements

This Quarterly Report on Form 10-Q contains "forward-looking statements" within the meaning of the U.S. Private Securities Litigation Reform Act of 1995, which are subject to a number of risks and uncertainties. All statements other than statements of historical facts contained in this Quarterly Report on Form 10-Q, including statements regarding our future expenses, results of operations and financial position, integration activities, potential stock repurchases, anticipated settlement payments, beliefs about our market capitalization, business strategy, statements about the potential impact of the merger and acquisition transactions described herein, plans and objectives of management for future operations, plans for future cost reductions, restructuring activities and plans for future product development and manufacturing are forward-looking statements. Without limiting the foregoing, the words "anticipates", "believes", "could", "estimates", "expects", "intends", "may", "plans", "seeks" and other similar language, whether in the negative or affirmative, are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Forward-looking statements are based on our current expectations and assumptions regarding our business, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements including, but not limited to, our successful integration activities with respect to recently completed acquisitions; our ability to realize the benefits from mergers and acquisitions; the effects of disruption from mergers and acquisitions, making it more difficult to maintain relationships with employees, customers, business partners or government entities; unpredictable fluctuations in quarterly revenue and operating results; failure to compete successfully against telecommunications equipment and networking companies; failure to grow our customer base or generate recurring business from our existing customers; consolidation in the telecommunications industry; credit risks; the timing of customer purchasing decisions and our recognition of revenues; economic conditions; our ability to recruit and retain key personnel; difficulties supporting our strategic focus on channel sales; difficulties retaining and expanding our customer base; difficulties leveraging market opportunities; the impact of restructuring and cost-containment activities; litigation; acceptance of our products and services; rapid technological and market change; our ability to protect our intellectual property rights and obtain necessary licenses; our ability to maintain partner, reseller, distribution and vendor support and supply relationships; our negotiating position relative to our large customers; the limited supply of certain components of our products; the potential for defects in our products; risks related to the terms of our credit agreement; higher risks in international operations and markets; the impact of increased competition; currency fluctuations; changes in the market price of our common stock; and/or failure or circumvention of our controls and procedures. We therefore caution you against relying on any of these forward-looking statements.

Important factors that could cause actual results to differ materially from those in these forward-looking statements are also discussed in Part I, Item 2, "Management's Discussion and Analysis of Financial Condition and Results of Operations" of this Quarterly Report on Form 10-Q and Part I, Item 1A and Part II, Item 7A, "Risk Factors" and "Quantitative and Qualitative Disclosures About Market Risk," respectively, of our Annual Report on Form 10-K/A for the year ended December 31, 2018. Also, any forward-looking statement made by us in this Quarterly Report on Form 10-Q speaks only as of the date on which this Quarterly Report on Form 10-Q was first filed. We undertake no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise.

Presentation of Information

Effective October 27, 2017, we completed the merger (the "Merger") of Sonus Networks, Inc. ("Sonus"), GENBAND Holdings Company, GENBAND, Inc. and GENBAND II, Inc. (collectively, "GENBAND").

Unless the context otherwise requires, references in this Quarterly Report on Form 10-Q to "Ribbon," "Ribbon Communications," "Company," "we," "us" and "our" and "the Company" refer to (i) Sonus Networks, Inc. and its subsidiaries prior to the Merger and (ii) Ribbon Communications Inc. and its subsidiaries upon completion of the Merger, as applicable.

PART I FINANCIAL INFORMATION

Item 1. Financial Statements

RIBBON COMMUNICATIONS INC.
Condensed Consolidated Balance Sheets
(in thousands, except share and per share data)
(unaudited)

	March 31, 2019	December 31, 2018
Assets		
Current assets:		
Cash and cash equivalents	$ 43,938	$ 43,694
Marketable securities	1,998	7,284
Accounts receivable, net	134,801	187,853
Inventory	18,870	22,602
Other current assets	20,444	17,002
Total current assets	220,051	278,435
Property and equipment, net	27,630	27,042
Intangible assets, net	250,669	251,391
Goodwill	389,196	383,655
Deferred income taxes	8,969	9,152
Operating lease right-of-use assets	42,166	—
Other assets	7,368	7,484
	$ 946,049	$ 957,159
Liabilities and Stockholders' Equity		
Current liabilities:		
Revolving credit facility	$ 57,000	$ 55,000
Accounts payable	37,989	45,304
Accrued expenses and other	58,454	84,263
Operating lease liabilities	7,214	—
Deferred revenue	109,283	105,087
Total current liabilities	269,940	289,654
Long-term debt, related party	24,716	24,100
Operating lease liabilities, net of current	39,151	—
Deferred revenue, net of current	15,793	17,572
Deferred income taxes	4,861	4,738
Other long-term liabilities	12,525	30,797
Total liabilities	366,986	366,861
Commitments and contingencies (Note 16)		
Stockholders' equity:		
Preferred stock, $0.01 par value per share; 10,000,000 shares authorized, none issued and outstanding	—	—
Common stock, $0.0001 par value per share; 240,000,000 shares authorized; 110,487,634 shares issued and outstanding at March 31, 2019; 106,815,636 shares issued and outstanding at December 31, 2018	11	11
Additional paid-in capital	1,743,136	1,723,576
Accumulated deficit	(1,167,824)	(1,136,992)
Accumulated other comprehensive income	3,740	3,703
Total stockholders' equity	579,063	590,298
	$ 946,049	$ 957,159

See notes to the unaudited condensed consolidated financial statements.

RIBBON COMMUNICATIONS INC.
Condensed Consolidated Statements of Operations
(in thousands, except per share data)
(unaudited)

	Three months ended	
	March 31, 2019	March 31, 2018
Revenue:		
Product	$ 47,480	$ 51,531
Service	71,448	69,649
Total revenue	118,928	121,180
Cost of revenue:		
Product	33,147	33,014
Service	29,192	32,893
Total cost of revenue	62,339	65,907
Gross profit	56,589	55,273
Operating expenses:		
Research and development	35,933	39,049
Sales and marketing	30,059	31,926
General and administrative	18,694	15,601
Acquisition- and integration-related	3,199	4,412
Restructuring	4,932	6,668
Total operating expenses	92,817	97,656
Loss from operations	(36,228)	(42,383)
Interest expense, net	(1,364)	(599)
Other income, net	7,774	248
Loss before income taxes	(29,818)	(42,734)
Income tax provision	(1,014)	(2,170)
Net loss	$ (30,832)	$ (44,904)
Loss per share:		
Basic	$ (0.29)	$ (0.44)
Diluted	$ (0.29)	$ (0.44)
Shares used to compute loss per share:		
Basic	108,167	101,917
Diluted	108,167	101,917

See notes to the unaudited condensed consolidated financial statements.

RIBBON COMMUNICATIONS INC.
Condensed Consolidated Statements of Comprehensive Income (Loss)
(in thousands)
(unaudited)

	Three months ended	
	March 31, 2019	March 31, 2018
Net loss	$ (30,832)	$ (44,904)
Other comprehensive income (loss), net of tax:		
Foreign currency translation adjustments	(8)	163
Unrealized gain (loss) on available-for sale marketable securities, net of reclassification adjustments for realized amounts	13	(72)
Employee retirement benefits	32	—
Other comprehensive income, net of tax	37	91
Comprehensive loss	$ (30,795)	$ (44,813)

See notes to the unaudited condensed consolidated financial statements.

RIBBON COMMUNICATIONS INC.
Condensed Consolidated Statements of Stockholders' Equity
(in thousands, except shares)
(unaudited)

Three months ended March 31, 2019

	Common stock					
	Shares	Amount	Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive income (loss)	Total stockholders' equity
Balance at January 1, 2019	106,815,636	$ 11	$ 1,723,576	$ (1,136,992)	$ 3,703	$ 590,298
Exercise of stock options	88,354		151			151
Vesting of restricted stock awards and units	806,813					—
Vesting of performance-based stock units	9,466					—
Shares of restricted stock returned to the Company under net share settlements to satisfy tax withholding obligations	(181,428)		(968)			(968)
Shares issued as consideration in connection with the acquisition of Anova Data, Inc.	2,948,793		15,186			15,186
Reclassification of liability to equity for bonuses converted to stock awards			1,052			1,052
Stock-based compensation expense			4,139			4,139
Other comprehensive income					37	37
Net loss				(30,832)		(30,832)
Balance at March 31, 2019	110,487,634	11	1,743,136	(1,167,824)	3,740	579,063

Three months ended March 31, 2018

	Common stock					
	Shares	Amount	Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive income (loss)	Total stockholders' equity
Balance at January 1, 2018	101,752,856	$ 10	$ 1,684,768	$ (1,072,426)	$ 3,069	$ 615,421
Adoption of Accounting Standards Codification 606, *Revenue from Contracts with Customers*				11,964		11,964
Exercise of stock options	2,583		10			10
Vesting of restricted stock awards and units	490,282					—
Vesting of performance-based stock units	41,518					—
Shares of restricted stock returned to the Company under net share settlements to satisfy tax withholding obligations	(232,519)		(371)			(371)
Stock-based compensation expense			2,824			2,824
Other comprehensive income					91	91
Net loss				$ (44,904)		$ (44,904)
Balance at March 31, 2018	102,054,720	$ 10	$ 1,687,231	$ (1,105,366)	$ 3,160	$ 585,035

See notes to the unaudited condensed consolidated financial statements.

RIBBON COMMUNICATIONS INC.
Condensed Consolidated Statements of Cash Flows
(in thousands)
(unaudited)

	Three months ended	
	March 31, 2019	March 31, 2018
Cash flows from operating activities:		
Net loss	$ (30,832)	$ (44,904)
Adjustments to reconcile net loss to cash flows provided by operating activities:		
Depreciation and amortization of property and equipment	2,921	2,507
Amortization of intangible assets	11,922	12,309
Stock-based compensation	4,139	2,824
Deferred income taxes	347	528
Foreign exchange losses	352	23
Reduction in deferred purchase consideration	(8,124)	—
Changes in operating assets and liabilities:		
Accounts receivable	53,854	39,740
Inventory	3,692	(412)
Other operating assets	(674)	(2,182)
Accounts payable	(6,999)	(8,976)
Accrued expenses and other long-term liabilities	(13,095)	(12,820)
Deferred revenue	2,076	14,755
Net cash provided by operating activities	19,579	3,392
Cash flows from investing activities:		
Purchases of property and equipment	(3,766)	(1,827)
Maturities of marketable securities	5,295	245
Net cash provided by (used in) investing activities	1,529	(1,582)
Cash flows from financing activities:		
Borrowings under revolving line of credit	37,000	10,000
Principal payments on revolving line of credit	(35,000)	(10,000)
Payment of deferred purchase consideration	(21,876)	—
Payment of tax withholding obligations related to net share settlements of restricted stock awards	(968)	(370)
Other	(79)	(130)
Net cash used in financing activities	(20,923)	(500)
Effect of exchange rate changes on cash and cash equivalents	59	206
Net increase in cash and cash equivalents	244	1,516
Cash and cash equivalents, beginning of year	43,694	57,073
Cash and cash equivalents, end of period	$ 43,938	$ 58,589
Supplemental disclosure of cash flow information:		
Interest paid	$ 831	$ 667
Income taxes paid	$ 777	$ 1,003
Income tax refunds received	$ 100	$ 196
Supplemental disclosure of non-cash investing activities:		
Capital expenditures incurred, but not yet paid	$ 399	$ 368
Acquisition purchase consideration - deferred payments	$ 1,700	$ —
Shares of common stock issued as purchase consideration	$ 15,186	$ —
Supplemental disclosure of non-cash financing activities:		
Total fair value of restricted stock awards, restricted stock units and performance-based stock units on date vested	$ 4,334	$ 5,253

See notes to the unaudited condensed consolidated financial statements.

RIBBON COMMUNICATIONS INC.
Notes to Condensed Consolidated Financial Statements
(unaudited)

(1) BASIS OF PRESENTATION

Business

Ribbon is a leading provider of next generation ("NextGen") software solutions to telecommunications, wireless and cable service providers and enterprises of all sizes across industry verticals. With over 1,000 customers around the globe, including some of the largest telecommunications service providers and enterprises in the world, Ribbon enables service providers and enterprises to modernize their communications networks through software and provide secure real-time communications ("RTC") solutions to their customers and employees. By securing and enabling reliable and scalable Internet Protocol ("IP") networks, Ribbon helps service providers and enterprises adopt the next generation of software-based virtualized and cloud communications technologies to drive new, incremental revenue, while protecting their existing revenue streams. Ribbon's software solutions provide a secure way for its customers to connect and leverage multivendor, multiprotocol communications systems and applications across their networks and the cloud, around the world and in a rapidly changing ecosystem of IP-enabled devices, such as smartphones and tablets. In addition, Ribbon's software solutions secure cloud-based delivery of unified communications ("UC") solutions - both for service providers transforming to a cloud-based network and for enterprises using cloud-based UC. Ribbon sells its software solutions through both direct sales and indirect channels globally, leveraging the assistance of resellers, and provides ongoing support to its customers through a global services team with experience in design, deployment and maintenance of some of the world's largest software IP networks.

Basis of Presentation

In the opinion of management, the accompanying unaudited condensed consolidated financial statements include all adjustments, consisting only of normal recurring items, necessary for their fair presentation with accounting principles generally accepted in the United States of America ("GAAP") and with the rules and regulations of the U.S. Securities and Exchange Commission ("SEC").

On February 28, 2019 (the "Anova Acquisition Date"), the Company acquired the business and technology assets of Anova Data, Inc. ("Anova"). The financial results of Anova are included in the Company's condensed consolidated financial statements for the period subsequent to the Anova Acquisition Date.

On August 3, 2018 (the "Edgewater Acquisition Date"), the Company completed the acquisition of Edgewater Networks, Inc. (“Edgewater”). The financial results of Edgewater are included in the Company's condensed consolidated financial statements for the periods subsequent to the Edgewater Acquisition Date.

Interim results are not necessarily indicative of results for a full year or any future interim period. The information included in this Quarterly Report on Form 10-Q should be read in conjunction with the Company's Annual Report on Form 10-K/A for the year ended December 31, 2018 (the "Annual Report"), which was filed with the SEC on March 5, 2019.

Significant Accounting Policies

The Company's significant accounting policies are disclosed in Note 2 to the Consolidated Financial Statements included in the Annual Report. There were no material changes to the significant accounting policies during the three months ended March 31, 2019, apart from the Company's accounting policy related to accounting for leases, as discussed below.

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-02, *Leases (Topic 842) Section A - Leases: Amendments to the FASB Accounting Standards Codification* ("ASU 2016-02" or "ASC 842"), its new standard on accounting for leases. ASU 2016-02 introduces a lessee model that brings most leases onto the balance sheet and eliminates the current GAAP requirement for an entity to use bright-line tests in determining lease classification. ASU 2016-02 became effective for the Company for both interim and annual periods beginning January 1, 2019. In July 2018, the FASB issued ASU 2018-11, *Leases (Topic 842): Targeted Improvements* ("ASU 2018-11") and ASU 2018-10, *Codification Improvements to Topic 842, Leases*, both of which provided improvements to certain aspects of the guidance in ASU 2016-02. In January 2018, the FASB issued ASU 2018-01, *Leases (Topic 842): Land Easement Practical Expedient for Transition to Topic 842,* which provided additional clarification and implementation guidance.

The Company elected to use the alternative transition method as described in ASU 2018-11, which allows entities to initially apply ASU 2016-02 at the adoption date with no subsequent adjustments to prior period lease costs for comparability. The Company elected the package of practical expedients permitted under the transition guidance within ASU 2016-02, which provided that the Company need not reassess whether expired or existing contracts contained a lease, the lease classification of expired or existing leases, and the amount of initial direct costs for existing leases.

In connection with the adoption of ASU 2016-02, the Company recorded additional lease assets of $43.9 million and additional lease liabilities of $47.8 million as of January 1, 2019. The difference between the additional lease assets and lease liabilities, net of the deferred tax impact, was due to the absorption of related balances into the right-of-use assets, such as deferred rent. The adoption of this standard had no impact on the Company's condensed consolidated statements of operations or of cash flows.

Principles of Consolidation

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

Use of Estimates and Judgments

The preparation of financial statements in conformity with GAAP requires Ribbon 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 reporting periods. Significant estimates and judgments relied upon in preparing these condensed consolidated financial statements include accounting for business combinations, revenue recognition for multiple element arrangements, inventory valuations, assumptions used to determine the fair value of stock-based compensation, intangible asset and goodwill valuations, including impairments, legal contingencies and recoverability of Ribbon's net deferred tax assets and the related valuation allowances. Ribbon regularly assesses these estimates and records changes in estimates in the period in which they become known. Ribbon bases its estimates on historical experience and various other assumptions that it believes to be reasonable under the circumstances. Actual results could differ from those estimates.

Reclassifications

Certain reclassifications have been made to the previously issued financial statements to conform to the current period presentation, none of which affected net loss as previously reported.

Fair Value of Financial Instruments

The carrying amounts of the Company's financial instruments approximate their fair values and include cash equivalents, investments, accounts receivable, borrowings under a revolving credit facility, accounts payable and long-term debt.

Operating Segments

The Company operates in a single segment, as the chief operating decision maker makes decisions and assesses performance at the company level. Operating segments are identified as components of an enterprise about which separate discrete financial information is utilized for evaluation by the chief operating decision maker in making decisions regarding resource allocation and assessing performance. To date, the chief operating decision maker has made such decisions and assessed performance at the company level, as one segment. The Company's chief operating decision maker is its President and Chief Executive Officer.

Recent Accounting Pronouncements

In August 2018, the FASB issued ASU 2018-15, *Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract* ("ASU 2018-15"), which provides guidance on implementation costs incurred in a cloud computing arrangement ("CCA") that is a service contract. ASU 2018-15 amends Accounting Standards Codification 350 ("ASC 350"), *Intangibles -*

Goodwill and Other ("ASC 350") to include in its scope implementation costs of a CCA that is a service contract and clarifies that a customer should apply the guidance in ASC 350-40 to determine which implementation costs should be capitalized in such a CCA. ASU 2018-15 is effective for the Company beginning January 1, 2020. The Company is currently assessing the potential impact of the adoption of ASU 2018-15 on its consolidated financial statements.

The FASB has issued the following accounting pronouncements, all of which became effective for the Company on January 1, 2019 and none of which had a material impact on the Company's consolidated financial statements:

In July 2018, the FASB issued ASU 2018-09, *Codification Improvements* ("ASU 2018-09"), which contains amendments to clarify, correct errors in or make minor improvements to the Codification. ASU 2018-09 makes improvements to multiple topics, including but not limited to comprehensive income, debt, income taxes related to both stock-based compensation and business combinations, fair value measurement and defined contribution benefit plans.

In June 2018, the FASB issued ASU 2018-07, *Compensation - Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting* ("ASU 2018-07"), which expands the scope of ASC 718, *Compensation - Stock Compensation* ("ASC 718"), to include all share-based payment arrangements related to the acquisition of goods and services from both nonemployees and employees. As a result, most of the guidance in ASC 718 associated with employee share-based payments, including most of its requirements related to classification and measurement, applies to nonemployee share-based payment arrangements.

In February 2018, the FASB issued ASU 2018-02, I*ncome Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income* ("ASU 2018-02"), which amends ASC 220, *Income Statement - Reporting Comprehensive Income*, to allow a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act (the "Tax Act") and requires entities to provide certain disclosures regarding stranded tax effects.

In October 2016, the FASB issued ASU 2016-16, I*ncome Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory* ("ASU 2016-16"), which removes the prohibition in ASC 740, Income Taxes, against the immediate recognition of the current and deferred income tax effects of intra-entity transfers of assets other than inventory.

In addition, the FASB has issued the following accounting pronouncements, none of which the Company believes will have a material impact on its consolidated financial statements:

In August 2018, the FASB issued ASU 2018-14, *Compensation - Retirement Benefits - Defined Benefit Plans - General (Subtopic 715-20): Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans* ("ASU 2018-14"), which amends ASC 715 to add, remove and clarify disclosure requirements related to defined benefit pension and other postretirement plans. ASU 2018-14 is effective for the Company beginning January 1, 2020.

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"), which changes the fair value measurement requirements of ASC 820, *Fair Value Measurement* ("ASC 820"). ASU 2018-13 is effective for the Company beginning January 1, 2020 for both interim and annual reporting.

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"), which adds an impairment model that is based on expected losses rather than incurred losses. Under ASU 2016-13, an entity recognizes as an allowance its estimate of expected credit losses, which the FASB believes will result in more timely recognition of such losses. ASU 2016-13 is effective for the Company beginning January 1, 2020 for both interim and annual reporting periods, with early adoption permitted.

(2) BUSINESS ACQUISITIONS

Anova Data, Inc.

On the Anova Acquisition Date, the Company acquired the business and technology assets of Anova, a private company headquartered in Westford, Massachusetts that provides advanced analytics solutions (the "Anova Acquisition"). The Anova Acquisition was completed in accordance with the terms and conditions of an asset purchase agreement, dated as of January 31, 2019 (the "Anova Asset Purchase Agreement"). The Company believes that the acquisition of Anova will reinforce and extend Ribbon's strategy to expand into network optimization, security and data monetization via big data analytics and machine learning.

As consideration for the Anova Acquisition, Ribbon issued 2.9 million shares of Ribbon common stock with a fair value of $15.2 million to Anova's sellers and equityholders on the Anova Acquisition Date and held back an additional 0.3 million shares with a fair value of $1.7 million, some or all of which could be issued subject to post-closing adjustments (the "Anova Deferred Consideration"). The Anova Deferred Consideration is included as a component of Accrued expenses and other current liabilities in the Company's condensed consolidated balance sheet at March 31, 2019.

The Anova Acquisition has been accounted for as a business combination and the financial results of Anova have been included in the Company's consolidated financial statements for the period subsequent to its acquisition.

As of March 31, 2019, the valuation of acquired assets, identifiable intangible assets and certain assumed liabilities was preliminary. The purchase consideration aggregating $16.9 million has been preliminarily allocated to $11.2 million of identifiable intangible assets (comprised of $7.2 million of customer relationships and $4.0 million of developed technology) and working capital items aggregating $0.1 million of net assets acquired. The remaining unallocated amount of $5.5 million has been recorded as goodwill.

The valuation of the acquired intangible assets is inherently subjective and relies on significant unobservable inputs. The Company used an income approach to value the acquired developed technology and customer relationships intangible assets. The valuation for each of these intangible assets was based on estimated projections of expected cash flows to be generated by the assets, discounted to the present value at discount rates commensurate with perceived risk. The valuation assumptions take into consideration the Company's estimates of customer attrition, technology obsolescence and revenue growth projections. The Company is amortizing the identifiable intangible assets in relation to the expected cash flows from the individual intangible assets over their respective useful lives, which have a weighted average life of 7.5 years (see Note 6). The preliminary purchase price allocation is subject to change, and such change could be material based on numerous factors, including the final estimated fair value of the assets acquired and liabilities assumed and the amount of the final post-closing net working capital adjustment. The Company expects to finalize the valuation of the assets acquired and liabilities assumed by the first quarter of 2020.

The excess of purchase consideration over net tangible and identifiable intangible assets acquired was recorded as goodwill. The goodwill is deductible for tax purposes.

There was no revenue attributable to Anova in the period since the Anova Acquisition Date. Expenses attributable to Anova included in the Company's condensed consolidated statement of operations for the three months ended March 31, 2019 were $0.7 million of net loss attributable to Anova since the Anova Acquisition Date. The Company has not provided pro forma financial information, as the historical amounts are not significant to the Company's consolidated financial statements.

Edgewater Networks, Inc.

On the Edgewater Acquisition Date, the Company completed its acquisition of Edgewater, a private company headquartered in San Jose, California (the "Edgewater Acquisition"). The Edgewater Acquisition was completed in accordance with the terms and conditions of an agreement and plan of merger, dated as of June 24, 2018 (the "Edgewater Merger Agreement").

Edgewater is a market leader in Network Edge Orchestration for the small and medium enterprise and UC market. The

Company believes that the acquisition of Edgewater advances its strategy by offering its global customer base a complete core-to-edge product portfolio, end-to-end service assurance and analytics solutions, and a fully integrated software-defined wide-area network ("SD-WAN") service.

As consideration for the Edgewater Acquisition, Ribbon paid, in the aggregate, $46.4 million of cash, net of cash acquired, and issued 4.2 million shares of Ribbon common stock to Edgewater's selling shareholders and holders of vested in-the-money options and warrants to acquire common stock of Edgewater (the "Edgewater Selling Stakeholders") on the Edgewater Acquisition Date. Pursuant to the Edgewater Merger Agreement and subject to the terms and conditions contained therein, Ribbon agreed to pay the Edgewater Selling Stakeholders an additional $30 million of cash, $15 million of which was to be paid 6 months from the closing date and the other $15 million of which was to be paid as early as 9 months from the closing date and no later than 18 months from the closing date (the exact timing of which would depend on the amount of revenue generated from the sales of Edgewater products in 2018) (the "Edgewater Deferred Consideration"). The current portion of this deferred purchase consideration was included as a component of Accrued expenses and other, and the noncurrent portion was included as a component of Other long-term liabilities in the Company's condensed consolidated balance sheet as of December 31, 2018.

On February 15, 2019, the Company and the Edgewater Selling Stakeholders agreed to reduce the amount of Edgewater Deferred Consideration from $30 million to $21.9 million and agreed that all such deferred consideration would be payable on March 8, 2019. The Company paid the Edgewater Selling Stakeholders $21.9 million on March 8, 2019 and recorded the reduction to the Edgewater Deferred Consideration of $8.1 million in Other income, net, in the Company's condensed consolidated statement of operations and as a non-cash adjustment to reconcile net loss to cash flows provided by operating activities in the Company's consolidated statement of cash flows for the three months ended March 31, 2019.

The Edgewater Acquisition has been accounted for as a business combination and the financial results of Edgewater have been included in the Company's consolidated financial statements for the period subsequent to its acquisition.

As of March 31, 2019, the valuation of acquired assets, identifiable intangible assets and certain assumed liabilities was preliminary. The Company is continuing the process of reviewing the facts and circumstances existing as of the Edgewater Acquisition Date in order to finalize its valuation. The Company expects to finalize the valuation of the assets acquired and liabilities assumed by the third quarter of 2019.

A summary of the preliminary allocation of the purchase consideration for Edgewater as of March 31, 2019 is as follows (in thousands):

Fair value of consideration transferred:		
Cash consideration:		
Cash paid to Edgewater Selling Stakeholders	$	51,162
Less cash acquired		(4,773)
Net cash consideration		46,389
Deferred purchase consideration		30,000
Fair value of Ribbon stock issued		30,000
Fair value of equity awards assumed (see Note 11)		747
Fair value of total consideration	$	107,136

Fair value of assets acquired and liabilities assumed:		
Current assets, net of cash acquired	$	16,098
Property and equipment		245
Intangible assets:		
Developed technology		29,500
Customer relationships		26,100
Trade names		1,100
Goodwill		48,053
Other noncurrent assets		103
Deferred revenue		(2,749)
Other current liabilities		(9,926)
Deferred revenue, net of current		(669)
Other long-term liabilities		(719)
	$	107,136

The valuation of the acquired intangible assets is inherently subjective and relies on significant unobservable inputs. The Company used an income approach to value the acquired developed technology, customer relationships and trade name intangible assets. The valuation for each of these intangible assets was based on estimated projections of expected cash flows to be generated by the assets, discounted to the present value at discount rates commensurate with perceived risk. The valuation assumptions take into consideration the Company's estimates of customer attrition, technology obsolescence and revenue growth projections. The Company is amortizing the identifiable intangible assets in relation to the expected cash flows from the individual intangible assets over their respective useful lives, which have a weighted average life of 8.4 years (see Note 6). Goodwill resulting from the transaction is primarily due to expected synergies between the combined companies and is not deductible for tax purposes.

The Company has not provided pro forma financial information, as the historical amounts are not significant to the Company's consolidated financial statements.

Acquisition- and Integration-Related Expenses

Acquisition- and integration-related expenses include those expenses related to acquisitions that would otherwise not have been incurred by the Company, including professional and services fees, such as legal, audit, consulting, paying agent and other fees, and expenses related to cash payments to certain former executives of the acquired businesses in connection with their employment agreements. Integration-related expenses represent incremental costs related to combining the Company and its business acquisitions, such as third-party consulting and other third-party services related to merging previously separate companies' systems and processes. Of the expense recorded in the three months ended March 31, 2019, the acquisition-related expenses relate to the Anova Acquisition and the integration-related expenses primarily relate to the Merger and, to a lesser extent, the Edgewater Acquisition. The acquisition- and integration-related expenses recorded in the three months ended March 31, 2018 relate to the Merger.

The Company's acquisition- and integration-related expenses for the three months ended March 31, 2019 and 2018 were as follows (in thousands):

	Three months ended	
	March 31, 2019	March 31, 2018
Professional and services fees (acquisition-related)	$ 1,505	$ 210
Management bonuses (acquisition-related)	—	1,674
Integration-related expenses	1,694	2,528
	$ 3,199	$ 4,412

(3) EARNINGS (LOSS) PER SHARE

Basic earnings (loss) per share is computed by dividing net income (loss) by the weighted average number of shares outstanding during the period. For periods in which the Company reports net income, diluted net earnings per share is determined by using the weighted average number of common and dilutive common equivalent shares outstanding during the period unless the effect is antidilutive.

The calculations of shares used to compute loss per share were as follows (in thousands):

	Three months ended	
	March 31, 2019	March 31, 2018
Weighted average shares outstanding—basic	108,167	101,917
Potential dilutive common shares	—	—
Weighted average shares outstanding—diluted	108,167	101,917

Options to purchase the Company's common stock, unvested shares of restricted and performance-based stock and stock units, and shares in connection with future purchases under the Company's Amended and Restated 2000 Employee Stock Purchase Plan, as amended (the "ESPP"), aggregating 4.5 million shares have not been included in the computation of diluted loss per share for the three months ended March 31, 2019 because their effect would have been antidilutive. Options to purchase the Company's common stock and unvested shares of restricted and performance-based stock and stock units aggregating 2.7 million shares have not been included in the computation of diluted loss per share for the three months ended March 31, 2018 because their effective would have been antidilutive.

(4) CASH EQUIVALENTS, MARKETABLE SECURITIES AND INVESTMENTS

The Company invests in debt instruments, primarily U.S. government-backed, municipal and corporate obligations, which management believes to be high quality (investment grade) credit instruments.

The Company did not sell any of its available-for-sale securities during the three months ended March 31, 2019 or 2018. The Company did not hold any investments that would mature beyond one year at either March 31, 2019 or December 31, 2018.

On a quarterly basis, the Company reviews its marketable securities and investments to determine if there have been any events that could create a credit impairment. Based on its reviews, the Company does not believe that any impairment existed with its current holdings at March 31, 2019.

The amortized cost, gross unrealized gains and losses and fair value of the Company's marketable debt securities and investments at March 31, 2019 and December 31, 2018 were comprised of the following (in thousands):

	March 31, 2019			
	Amortized cost	Unrealized gains	Unrealized losses	Fair value
Cash equivalents	$ 747	$ —	$ —	$ 747
Marketable securities				
U.S. government agency notes	$ 2,000	$ —	$ (2)	$ 1,998

	December 31, 2018			
	Amortized cost	Unrealized gains	Unrealized losses	Fair value
Cash equivalents	$ 310	$ —	$ —	$ 310
Marketable securities				
U.S. government agency notes	$ 3,998	$ —	$ (9)	$ 3,989
Corporate debt securities	3,301	—	(6)	3,295
	$ 7,299	$ —	$ (15)	$ 7,284

Fair Value Hierarchy

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or a liability. The three-tier fair value hierarchy is based on the level of independent, objective evidence surrounding the inputs used to measure fair value. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The fair value hierarchy is as follows:

Level 1. Level 1 applies to assets or liabilities for which there are quoted prices in active markets for identical assets or liabilities.

Level 2. Level 2 applies to assets or liabilities for which there are inputs that are directly or indirectly observable in the marketplace, such as quoted prices for similar assets or liabilities in active markets or quoted prices for identical assets or liabilities in markets with insufficient volume or infrequent transactions (less active markets).

Level 3. Level 3 applies to assets or liabilities for which there are unobservable inputs to the valuation methodology that are significant to the measurement of the fair value of the assets or liabilities.

The following table shows the fair value of the Company's financial assets at March 31, 2019 and December 31, 2018. These financial assets are comprised of the Company's available-for-sale debt securities and reported under the captions Cash and cash equivalents and Marketable securities in the condensed consolidated balance sheets (in thousands):

		Fair value measurements at March 31, 2019 using:		
	Total carrying value at March 31, 2019	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
Cash equivalents	$ 747	$ 747	$ —	$ —
Marketable securities				
U.S. government agency notes	$ 1,998	$ —	$ 1,998	$ —

	Total carrying value at December 31, 2018	Fair value measurements at December 31, 2018 using: Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
Cash equivalents	$ 310	$ 310	$ —	$ —
Marketable securities				
U.S. government agency notes	$ 3,989	$ —	$ 3,989	$ —
Corporate debt securities	3,295	—	3,295	—
	$ 7,284	$ —	$ 7,284	$ —

The Company's marketable securities have been valued with the assistance of valuations provided by third-party pricing services, as derived from such services' pricing models. Inputs to the models may include, but are not limited to, reported trades, executable bid and asked prices, broker/dealer quotations, prices or yields of securities with similar characteristics, benchmark curves or information pertaining to the issuer, as well as industry and economic events. The pricing services may use a matrix approach, which considers information regarding securities with similar characteristics to determine the valuation for a security. The Company is ultimately responsible for the condensed consolidated financial statements and underlying estimates. Accordingly, the Company assesses the reasonableness of the valuations provided by the third-party pricing services by reviewing actual trade data, broker/dealer quotes and other similar data, which are obtained from quoted market prices or other sources.

(5) INVENTORY

Inventory at March 31, 2019 and December 31, 2018 consisted of the following (in thousands):

	March 31, 2019	December 31, 2018
On-hand final assemblies and finished goods inventories	$ 16,653	$ 19,879
Deferred cost of goods sold	2,861	3,798
	19,514	23,677
Less noncurrent portion (included in other assets)	(644)	(1,075)
Current portion	$ 18,870	$ 22,602

(6) INTANGIBLE ASSETS AND GOODWILL

The Company's intangible assets at March 31, 2019 and December 31, 2018 consisted of the following (in thousands):

March 31, 2019	Weighted average amortization period (years)	Cost	Accumulated amortization	Net carrying value
In-process research and development	*	$ 5,600	$ —	$ 5,600
Developed technology	6.83	186,880	72,832	114,048
Customer relationships	9.47	154,140	24,348	129,792
Trade names	5.20	2,000	771	1,229
Internal use software	3.00	730	730	—
	7.86	$ 349,350	$ 98,681	$ 250,669

December 31, 2018	Weighted average amortization period (years)	Cost	Accumulated amortization	Net carrying value
In-process research and development	*	$ 5,600	$ —	$ 5,600
Developed technology	6.91	182,880	63,187	119,693
Customer relationships	9.44	146,940	22,218	124,722
Trade names	5.20	2,000	624	1,376
Internal use software	3.00	730	730	—
	7.88	$ 338,150	$ 86,759	$ 251,391

* An in-process research and development intangible asset has an indefinite life until the product is generally available, at which time such asset is typically reclassified to developed technology.

Amortization expense for intangible assets for the three months ended March 31, 2019 and 2018 was as follows (in thousands):

	Three months ended		
	March 31, 2019	March 31, 2018	Statement of operations classification
Developed technology	$ 9,645	$ 9,592	Cost of revenue - product
Customer relationships	2,130	2,605	Sales and marketing
Trade names	147	112	Sales and marketing
	$ 11,922	$ 12,309	

Estimated future amortization expense for the Company's intangible assets at March 31, 2019 was as follows (in thousands):

Years ending December 31,	
Remainder of 2019	$ 37,303
2020	48,815
2021	42,493
2022	35,113
2023	27,538
Thereafter	59,407
	$ 250,669

The changes in the carrying value of the Company's goodwill in the three months ended March 31, 2019 and 2018 were as follows (in thousands):

Balance at January 1	2019	2018
Goodwill	$ 386,761	$ 338,822
Accumulated impairment losses	(3,106)	(3,106)
	383,655	335,716
Acquisition of Anova	5,541	—
Balance at March 31	$ 389,196	$ 335,716
Balance at March 31		
Goodwill	$ 392,302	$ 338,822
Accumulated impairment losses	(3,106)	(3,106)
	$ 389,196	$ 335,716

(7) ACCRUED EXPENSES

Accrued expenses at March 31, 2019 and December 31, 2018 consisted of the following (in thousands):

	March 31, 2019	December 31, 2018
Employee compensation and related costs	$ 24,567	$ 42,852
Professional fees	12,493	7,994
Deferred purchase consideration	1,700	15,000
Other	19,694	18,417
	$ 58,454	$ 84,263

(8) RESTRUCTURING ACCRUALS

The Company recorded restructuring expense aggregating $4.9 million in the three months ended March 31, 2019 and $6.7 million in the three months ended March 31, 2018.

Merger Restructuring Initiative

In connection with the Merger, the Company's management approved a restructuring plan in the fourth quarter of 2017 to eliminate certain redundant positions and facilities within the combined companies (the "Merger Restructuring Initiative"). In connection with this initiative, the Company recorded restructuring expense of $4.9 million in the three months ended March

31, 2019 and $6.5 million in the three months ended March 31, 2018. Of the amount recorded in the three months ended March 31, 2019, virtually all was for severance and related costs for approximately 40 employees. The amount recorded in the three months ended March 31, 2018 represented severance and related costs for approximately 115 employees. The Company anticipates it will record nominal future expense in connection with this initiative as it continues to combine the two businesses and benefit from operational synergies. In connection with the adoption of ASC 842 effective January 1, 2019, the Company wrote off the remaining restructuring accrual related to facilities under ASC 842. The Company expects that the amount accrued at March 31, 2019 for severance will be paid by the end of the first half of 2020.

A summary of the Merger Restructuring Initiative accrual activity for the three months ended March 31, 2019 is as follows (in thousands):

	Balance at January 1, 2019	Initiatives charged to expense	Adjustment for the impact of ASC 842 adoption	Cash payments	Balance at March 31, 2019
Severance	$ 1,910	$ 4,919	$ —	$ (1,386)	$ 5,443
Facilities	771	13	(771)	(13)	—
	$ 2,681	$ 4,932	$ (771)	$ (1,399)	$ 5,443

Other Restructuring Initiatives

At December 31, 2018, the Company had nominal restructuring accrual balances under three other restructuring initiatives, all related to redundant facilities. In connection with the adoption of ASC 842, on January 1, 2019, the Company wrote off the remaining restructuring accruals of two initiatives and expects to utilize the remaining accrual under the third initiative in the second quarter of 2019.

Balance Sheet Classification

The current portions of accrued restructuring are included as a component of Accrued expenses and the long-term portions of accrued restructuring are included as a component of Other long-term liabilities in the condensed consolidated balance sheets. There was no long-term portion of accrued restructuring at March 31, 2019. The long-term portion of accrued restructuring totaled $0.5 million at December 31, 2018. This amount represented future lease payments on restructured facilities.

(9) DEBT

Senior Secured Credit Facility

On December 21, 2017, the Company entered into a Senior Secured Credit Facilities Credit Agreement (as amended, the “Credit Facility”), by and among the Company, as a guarantor, Sonus Networks, Inc., as the borrower (“Borrower”), Silicon Valley Bank ("SVB"), as administrative agent (in such capacity, the “Administrative Agent”), issuing lender, swingline lender and lead arranger and the lenders party thereto (each referred to individually as a “Lender”, and collectively, the “Lenders”), which refinanced the prior credit agreement with SVB that the Company had assumed in connection with the Merger. The Credit Facility includes $100 million of commitments, the full amount of which is available for revolving loans, a $15 million sublimit that is available for letters of credit and a $15 million sublimit that is available for swingline loans. On June 24, 2018, the Company amended the Credit Facility to, among other things, permit the Edgewater Acquisition and related transactions. The Company was in compliance with all covenants of the Credit Facility at March 31, 2019 and December 31, 2018. At March 31, 2019, the Company had an outstanding debt balance of $57.0 million at an average interest rate of 5.48% and $4.2 million of outstanding letters of credit at an average interest rate of 1.75% under the Credit Facility. At December 31, 2018, the Company had an outstanding debt balance of $55.0 million at an interest rate of 5.96% and $2.7 million of outstanding letters of credit at an average interest rate of 1.75% under the Credit Facility. The Company was in compliance with all covenants of the Credit Facility at March 31, 2019.

On April 29, 2019, the Company amended and restated the Credit Facility (the "New Credit Facility"). In addition to the original $100 million of commitments, the New Credit Facility now includes an additional $50 million term loan facility that was advanced in full on April 29, 2019. The New Credit Facility also includes procedures for additional financial institutions to become lenders, or for any existing lender to increase its commitment under either the term loan facility or the revolving loan facility, subject to an aggregate increase of $75 million for all incremental commitments under the New Credit Facility. The New Credit Facility is scheduled to mature in April 2024. In addition to SVB, lenders under the New Credit Facility include Citizens Bank N.A., SunTrust Bank and JPMorgan Chase Bank, N.A.

The indebtedness and other obligations under the New Credit Facility are unconditionally guaranteed on a senior secured basis by the Company and each other material U.S. domestic subsidiary of the Company (collectively, the “Guarantors”). The New Credit Facility is secured by first-priority liens on substantially all of the assets of the Borrower and the Guarantors, including the Company.

The New Credit Facility requires periodic interest payments on any outstanding borrowings under the facility. The Borrower may prepay all revolving loans under the New Credit Facility at any time without premium or penalty (other than customary LIBOR breakage costs), subject to certain notice requirements.

Revolving loans under the New Credit Facility bear interest at the Borrower’s option at either the Eurodollar (LIBOR) rate plus a margin ranging from 1.50% to 3.00% per year or the base rate (the highest of the Federal Funds rate plus 0.50%, or the prime rate announced from time to time in The Wall Street Journal) plus a margin ranging from 0.50% to 2.00% per year (such margins being referred to as the “Applicable Margin”). The Applicable Margin varies depending on the Company’s consolidated leverage ratio (as defined in the New Credit Facility). The base rate and the LIBOR rate are each subject to a zero percent floor.

The Borrower is charged a commitment fee ranging from 0.20% to 0.30% per year on the daily amount of the unused portions of the commitments under the New Credit Facility. Additionally, with respect to all letters of credit outstanding under the New Credit Facility, the Borrower is charged a fronting fee of 0.125% per year and an outstanding letter of credit fee equal to the Applicable Margin for base rate loans times the amount equal to be drawn under each letter of credit.

The New Credit Facility requires compliance with certain financial covenants, including a minimum consolidated quick ratio, minimum consolidated fixed charge coverage ratio and maximum consolidated leverage ratio, all of which are defined in the New Credit Facility and tested on a quarterly basis.

In addition, the New Credit Facility contains various covenants that, among other restrictions, limit the Company’s and its subsidiaries’ ability to enter into certain types of transactions, including, but not limited to: incurring or assuming indebtedness; granting or assuming liens; making acquisitions or engaging in mergers; repurchasing equity and making dividend and certain other restricted payments; making investments; selling or otherwise transferring assets; engaging in transactions with affiliates; entering into sale and leaseback transactions; entering into burdensome agreements; changing the nature of its business; modifying the its organizational documents; and amending or making prepayments on certain junior debt.

The New Credit Facility contains events of default that are customary for a secured credit facility. If an event of default relating to bankruptcy or other insolvency events with respect to a borrower occurs, all obligations under the New Credit Facility will immediately become due and payable. If any other event of default exists under the New Credit Facility, the lenders may accelerate the maturity of the obligations outstanding under the New Credit Facility and exercise other rights and remedies, including charging a default rate of interest equal to 2.00% per year above the rate that would otherwise be applicable. In addition, if any event of default exists under the New Credit Facility, the lenders may commence foreclosure or other actions against the collateral.

If any default exists under the New Credit Facility, or if the Borrower is unable to make any of the representations and warranties as stated in the New Credit Facility at the applicable time, the Borrower will be unable to borrow funds or have letters of credit issued under the New Credit Facility, which, depending on the circumstances prevailing at that time, could have a material adverse effect on the Borrower's liquidity and working capital.

Promissory Note

In connection with the Merger, on October 27, 2017, the Company issued the Promissory Note for $22.5 million to certain of GENBAND's equity holders (the "Promissory Note"). The Promissory Note does not amortize, and the principal thereon is payable in full on the third anniversary of its execution. Interest on the Promissory Note is payable quarterly in arrears and accrued at a rate of 7.5% per year for the first six months after issuance, and thereafter at a rate of 10% per year. The failure to make any payment under the Promissory Note when due and, with respect to payment of any interest, the continuation of such failure for a period of thirty days thereafter, constitutes an event of default under the Promissory Note. If an event of default occurs under the Promissory Note, the payees may declare the entire balance of the Promissory Note due and payable (including principal and accrued and unpaid interest) within five business days of the payees' notification to the Company of such acceleration. Interest that is not paid on the interest payment date will increase the principal amount of the Promissory Note. At March 31, 2019, the Promissory Note balance was $24.7 million, comprised of $22.5 million of principal and $2.2 million of interest converted to principal. At December 31, 2018, the Promissory Note balance was $24.1 million, comprised of $22.5 million of principal and $1.6 million of interest converted to principal.

On April 29, 2019, concurrently with the amendment and restatement of the Credit Facility as discussed above, the Company repaid in full all outstanding amounts under the Promissory Note. The Company did not incur any early termination penalties in connection with this repayment.

(10) REVENUE RECOGNITION

The Company accounts for revenue in accordance with ASC 606, *Revenue from Contracts with Customers* ("ASC 606" or the "New Revenue Standard"), which we adopted on January 1, 2018 using the modified retrospective method.

The Company derives revenues from two primary sources: products and services. Product revenue includes the Company's hardware and software that function together to deliver the products' essential functionality. Software and hardware are also sold on a standalone basis. Services include customer support (software updates, upgrades and technical support), consulting, design services, installation services and training. Generally, contracts with customers contain multiple performance obligations, consisting of products and services. For these contracts, the Company accounts for individual performance obligations separately if they are considered distinct.

When an arrangement contains more than one performance obligation, the Company will generally allocate the transaction price to each performance obligation on a relative standalone selling price basis. The best evidence of a standalone selling price is the observable price of a good or service when the entity sells that good or service separately in similar circumstances and to similar customers. If the good or service is not sold separately, an entity must estimate the standalone selling price by using an approach that maximizes the use of observable inputs. Acceptable estimation methods include but are not limited to: (1) adjusted market assessment; (2) expected cost plus a margin; and (3) a residual approach (when the standalone selling price is not directly observable and is either highly variable or uncertain).

The Company's software licenses typically provide a perpetual right to use the Company's software. The Company also sells term-based software licenses that expire and Software-as-a-Service ("SaaS")-based software which are referred to as subscription arrangements. The Company does not customize its software nor are installation services required, as the customer has a right to utilize internal resources or a third-party service company. The software and hardware are delivered before related services are provided and are functional without professional services or customer support. The Company has concluded that its software licenses are functional intellectual property that are distinct, as the user can benefit from the software on its own. The product revenue is typically recognized upon transfer of control or when the software is made available for download, as this is the point that the user of the software can direct the use of, and obtain substantially all of the remaining benefits from, the functional intellectual property. The Company does not recognize software revenue related to the renewal of subscription software licenses earlier than the beginning of the subscription period. Hardware product is generally sold with software to provide the customer solution.

Services revenue includes revenue from customer support and other professional services. The Company offers warranties on its products. Certain of the Company's warranties are considered to be assurance-type in nature and do not cover anything beyond ensuring that the product is functioning as intended. Based on the guidance in ASC 606, assurance-type warranties do not represent separate performance obligations. The Company also sells separately-priced maintenance service contracts which qualify as service-type warranties and represent separate performance obligations. The Company does not allow and has no history of accepting product returns.

Customer support includes software updates on a when-and-if-available basis, telephone support, integrated web-based support and bug fixes or patches. The Company sells its customer support contracts at a percentage of list or net product price related to the support. Customer support revenue is recognized ratably over the term of the customer support agreement, which is typically one year.

The Company's professional services include consulting, technical support, resident engineer services, design services and installation services. Because control transfers over time, revenue is recognized based on progress toward completion of the performance obligation. The method to measure progress toward completion requires judgment and is based on the nature of the products or services to be provided. The Company generally uses the input method to measure progress for its contracts because it believes such method best depicts the transfer of assets to the customer, which occurs as the Company incurs costs for the contracts. Under the cost-to-cost measure of progress, the progress toward completion is measured based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligation. When the measure of progress is based upon expended labor, progress toward completion is measured as the ratio of labor time expended to date vs the total estimated labor time required to complete the performance obligation. Revenue is recorded proportionally as costs are incurred or labor is expended. Costs to fulfill these obligations include internal labor as well as subcontractor costs.

Customer training includes courses offered by the Company. The related revenue is typically recognized as the training services are performed.

The Company's typical performance obligations include the following:

Performance Obligation	When Performance Obligation is Typically Satisfied	When Payment is Typically Due
Software and Product Revenue		
Software licenses (perpetual or term)	Upon transfer of control; typically, when made available for download (point in time)	Generally, within 30 days of invoicing except for term licenses, which may be paid for over time
Software licenses (subscription)	Upon activation of hosted site (over time)	Generally, within 30 days of invoicing
Appliances	When control of the appliance passes to the customer; typically, upon delivery (point in time)	Generally, within 30 days of invoicing
Software upgrades	Upon transfer of control; typically, when made available for download (point in time)	Generally, within 30 days of invoicing
Customer Support Revenue		
Customer support	Ratably over the course of the support contract (over time)	Generally, within 30 days of invoicing
Professional Services		
Other professional services (excluding training services)	As work is performed (over time)	Generally, within 30 days of invoicing (upon completion of services)
Training	When the class is taught (point in time)	Generally, within 30 days of services being performed

Significant Judgments

The Company's contracts with customers often include promises to transfer multiple products and services to the customer. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment.

Judgment is required to determine the standalone selling price for each distinct performance obligation. The Company typically has more than one SSP for individual products and services due to the stratification of those products and services by customers and circumstances. In these instances, the Company may use information such as the size of the customer and geographic region in determining the SSP.

Deferred Revenue

Deferred revenue is a contract liability representing amounts collected from or invoiced to customers in excess of revenue recognized. This results primarily from the billing of annual customer support agreements where the revenue is recognized over the term of the agreement. The value of deferred revenue will increase or decrease based on the timing of recognition of revenue.

Disaggregation of Revenue

The Company disaggregates its revenue from contracts with customers based on the nature of the products and services and the geographic regions in which each customer is domiciled. The Company's revenue for the three months ended March 31, 2019 and 2018 was disaggregated as follows:

Three months ended March 31, 2019	Product revenue	Service revenue (maintenance)	Service revenue (professional services)	Total revenue
United States	$ 28,446	$ 32,787	$ 7,343	$ 68,576
Europe, Middle East and Africa	6,458	10,723	2,849	20,030
Japan	3,961	2,913	1,562	8,436
Other Asia Pacific	4,675	3,663	869	9,207
Other	3,940	6,903	1,836	12,679
	$ 47,480	$ 56,989	$ 14,459	$ 118,928

Three months ended March 31, 2018	Product revenue	Service revenue (maintenance)	Service revenue (professional services)	Total revenue
United States	$ 17,801	$ 31,649	$ 7,434	$ 56,884
Europe, Middle East and Africa	11,420	11,148	2,833	25,401
Japan	5,670	2,853	955	9,478
Other Asia Pacific	12,887	3,097	1,069	17,053
Other	3,753	7,315	1,296	12,364
	$ 51,531	$ 56,062	$ 13,587	$ 121,180

The Company's product revenue from its direct sales program and from indirect sales through its channel partner program for the three months ended March 31, 2019 and 2018 was as follows (in thousands):

	Three months ended	
	March 31, 2019	March 31, 2018
Indirect sales through channel program	$ 19,174	$ 8,253
Direct sales	28,306	43,278
	$ 47,480	$ 51,531

The Company's product revenue from sales to enterprise customers and from sales to service provider customers for the three months ended March 31, 2019 and 2018 was as follows (in thousands):

	Three months ended	
	March 31, 2019	March 31, 2018
Sales to enterprise customers	$ 14,755	$ 7,254
Sales to service provider customers	32,725	44,277
	$ 47,480	$ 51,531

Revenue Contract Balances

The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables, which are contract assets, and customer advances and deposits, which are contract liabilities, in the Company's condensed consolidated balance sheets. Amounts are billed as work progresses in accordance with agreed-upon contractual terms, either at periodic intervals or upon achievement of contractual milestones. Completion of services and billing may occur subsequent to revenue recognition, resulting in contract assets. The Company may receive advances or deposits from its customers before revenue is recognized, resulting in contract liabilities which are classified as deferred revenue. These assets and liabilities are reported in the Company's condensed consolidated balance sheets on a contract-by-contract basis as of the end of each reporting period. Changes in the contract asset and liability balances during the three months ended March 31, 2019 were not materially impacted by any factors other than billing and revenue recognition. Nearly all of the Company's deferred revenue balance is related to services revenue, primarily customer support contracts. Unbilled receivables stem primarily from engagements where services have been performed; however, billing cannot occur until services are completed.

In some arrangements, the Company allows customers to pay for term-based software licenses and products over the term of the software license. The Company also sells SaaS-based software under subscription arrangements, with payment terms over the term of the SaaS agreement. Amounts recognized as revenue in excess of amounts billed are recorded as unbilled receivables. Unbilled receivables that are anticipated to be invoiced in the next twelve months are included in Accounts receivable on the Company's condensed consolidated balance sheets. The changes in the Company's accounts receivable, unbilled receivables and deferred revenue balances for the three months ended March 31, 2019 were as follows (in thousands):

	Accounts receivable	Unbilled accounts receivable	Deferred revenue (current)	Deferred revenue (long-term)
Balance at January 1, 2019	$ 174,310	$ 13,543	$ 105,087	$ 17,572
Increase (decrease), net	(58,339)	5,287	4,196	(1,779)
Balance at March 31, 2019	$ 115,971	$ 18,830	$ 109,283	$ 15,793

The decrease in accounts receivable was primarily the result of lower billings in the current year period compared with the Company's typically higher billings at year-end. The Company recognized $33 million of revenue in the three months ended March 31, 2019 that was recorded as deferred revenue at December 31, 2018. The Company recognized approximately $33 million of revenue in the three months ended March 31, 2018 that was recorded as deferred revenue at December 31, 2017. Of the Company's deferred revenue reported as long-term in its condensed consolidated balance sheet at March 31, 2019, the Company expects that approximately $9 million will be recognized as revenue in 2020, approximately $5 million will be recognized as revenue in 2021 and approximately $2 million will be recognized as revenue in 2022 and beyond.

All freight-related customer invoicing is recorded as revenue, while the shipping and handling costs that occur after control of the promised goods or services transfer to the customer are reported as fulfillment costs, a component of Cost of revenue - product in the Company's condensed consolidated statements of operations.

Deferred Commissions Cost

Sales commissions earned by the Company's employees are considered incremental and recoverable costs of obtaining a contract with a customer. Expense related to commission payments has been deferred on our condensed consolidated balance sheet and is being amortized over the expected life of the customer contract, which averages five years. At both March 31, 2019 and December 31, 2019, the Company had $2.7 million of deferred sales commissions capitalized.

(11) STOCK-BASED COMPENSATION PLANS

Amended and Restated Stock Incentive Plan

The Company's Amended and Restated Stock Incentive Plan, as amended (the "Plan"), provides for the award of options to purchase the Company's common stock ("stock options"), stock appreciation rights ("SARs"), restricted stock awards ("RSAs"), restricted stock units ("RSUs"), performance-based stock awards ("PSAs"), performance-based stock units ("PSUs") and other stock-based awards to employees, officers, directors (including those directors who are not employees or officers of the Company), consultants and advisors of the Company and its subsidiaries.

2002 Stock Option Plan

In connection with the Edgewater Acquisition, the Company assumed Edgewater's Amended and Restated 2002 Stock Option Plan (the "Edgewater Plan") to the extent of the shares underlying the options outstanding under the Edgewater Plan as of the Edgewater Acquisition Date (the "Edgewater Options"). The Edgewater Options were converted to Ribbon stock options (the "Ribbon Replacement Options") using a conversion factor of 0.17, which was calculated based on the acquisition consideration of $1.20 per share of Edgewater common stock divided by the weighted average of the closing price of Ribbon common stock for the ten consecutive days, ending with the trading day that preceded the Edgewater Acquisition Date. This conversion factor was also used to convert the exercise prices of Edgewater Options to Ribbon Replacement Option exercise prices. The Ribbon Replacement Options are vesting under the same schedules as the respective Edgewater Options.

The fair values of the Edgewater Options assumed were estimated using a Black-Scholes option pricing model. The Company recorded $0.7 million as additional purchase consideration for the fair value of the assumed Edgewater Options. The fair value of the Ribbon Replacement Options attributable to future service totaled $1.0 million, which will be recognized over a weighted average period of approximately two years.

Executive Equity Arrangements

Stock-for-Cash Bonus Election

In connection with the Company's annual incentive program, certain executives of the Company were given the choice to receive a portion, ranging from 10% to 50% (the "Elected Percentage") of their fiscal year 2018 bonuses (the "2018 Bonus"), if any were earned, in the form of shares of the Company's common stock (the "2018 Bonus Shares" and such program, the "Stock Bonus Election Program"). Each executive could also elect not to participate in this program and earn his or her 2018 Bonus, if any, in the form of cash. Any executive who elected to receive a portion of his or her 2018 Bonus in stock would also receive an uplift of 20% of the value of the 2018 Bonus Shares in additional shares of the Company’s common stock (the “Uplift Shares”), with the exception of the Company’s Chief Executive Officer and his senior leadership team. Under the Stock Bonus Election Program, the amount of the 2018 Bonus, if any, for each executive would be determined by the Compensation Committee of the Board of Directors (the "Compensation Committee").

The number of shares earned by each of the 23 participants in the Stock Bonus Election Program was calculated by multiplying each participant's 2018 Bonus as determined by the Compensation Committee by the applicable Elected Percentage (including the amount attributable to Uplift Shares, if applicable) and dividing the resulting amount by $4.97, the closing price of the Company's common stock on March 8, 2019, the date of the company-wide cash bonus payments. The Company granted 198,949 shares in the aggregate in connection with the 2018 Bonus Shares on March 15, 2019, and such shares were fully vested on the date of grant. However, each participant in the Stock Bonus Election Program is contractually restricted from trading the 2018 Bonus Shares for five months after the date of grant. Both the grant and vest of the 2018 Bonus Shares are included in the RSU table below.

Performance-Based Stock Grants

In addition to granting RSAs and RSUs to its executives and certain of its employees, the Company also grants PSUs to certain of its executives.

2019 PSU Grants. In March 2019, the Company granted certain of its executives an aggregate of 835,735 PSUs, of which 501,441 PSUs had both performance and service conditions (the "Performance PSUs") and 334,294 PSUs had both market and service conditions (the "Market PSUs").

Each executive's Performance PSU grant is comprised of three consecutive fiscal year performance periods from 2019 through 2021 (each, a "Fiscal Year Performance Period"), with one-third of the Performance PSUs attributable to each Fiscal Year Performance Period. The number of shares that will vest for each Fiscal Year Performance Period will be based on the achievement of certain metrics related to the Company's financial performance for the applicable year on a standalone basis (each, a "Fiscal Year Performance Condition"). The Company's achievement of the 2019 Fiscal Year Performance Conditions (and the number of shares of Company common stock to vest as a result thereof) will be measured on a linear sliding scale in relation to specific threshold, target and stretch performance conditions. The Company is recording stock-based compensation expense for the Performance PSUs based on its assessment of the probability that each performance condition will be achieved and the level, if any, of such achievement. As of March 31, 2019, the Company determined that the grant date criteria for the 2020 and 2021 Fiscal Year Performance Periods had not been met, as the 2020 and 2021 Fiscal Year Performance Conditions had not been established by the Company. Accordingly, the nominal stock-based compensation expense recorded in the three months ended March 31, 2019 in connection with the Performance PSUs is related only to those PSUs with 2019 Fiscal Year Performance Conditions. The Compensation Committee will determine the number of shares earned, if any, after the Company's financial results for each Fiscal Year Performance Period are finalized. Upon the determination by the Compensation Committee of the number of shares that will be received upon vesting of the PSUs, such number of shares will become fixed and the unamortized expense recorded through the remainder of the service period that ends March 15, 2022, at which time the total Performance PSUs earned, if any, will vest, pending each executive's continued employment with the Company through that date. The number of shares of common stock to be achieved upon vesting of the Performance PSUs will in no event exceed 200% of the Performance PSUs. Shares subject to the Performance PSUs that fail to be earned will be forfeited.

The Market PSUs have one three-year performance period which ends on December 31, 2021 (the "Market Performance Period"). The number of shares subject to the Market PSUs that will vest, if any, on March 15, 2022, will be dependent upon the Company's total shareholder return ("TSR") compared with the TSR of the companies included in the Nasdaq Telecommunications Index for the same Market Performance Period, measured by the Compensation Committee after the Market Performance Period ends. The shares determined to be earned will vest on March 15, 2022, pending each executive's continued employment with the Company through that date. The number of shares of common stock to be achieved upon vesting of the Market PSUs will in no event exceed 200% of the Market PSUs. Shares subject to the Market PSUs that fail to be earned will be forfeited. The Company recorded nominal stock-based compensation expense related to the Market PSUs in the three months ended March 31, 2019.

2018 PSU Grant. In May 2018, the Company granted its President and Chief Executive Officer Franklin (Fritz) Hobbs ("Mr. Hobbs"), 195,000 PSUs with both performance and service conditions (the "2018 PSUs"). Of the 195,000 2018 PSUs, one-half of such PSUs were eligible to vest based on the achievement of two separate metrics related to the Company's 2018 financial performance (the "2018 Performance Conditions"). The Company's achievement of the 2018 Performance Conditions (and the number of shares of Company common stock to be received upon vesting as a result thereof) will be measured on a linear sliding scale in relation to specific threshold, target and stretch performance conditions. The number of shares of common stock to be received upon vesting of the 2018 PSUs would in no event exceed 150% of the 2018 PSUs. In February 2019, the Compensation Committee determined that the performance metrics for one-half of the 2018 PSUs had been achieved at the 106.49% achievement level and one-half of the 2018 PSUs had been achieved at the 150% level. However, in April 2019, the Compensation Committee subsequently determined that the performance metrics for the entire 2018 PSUs had been achieved at the 150% level, for a total of 292,500 shares eligible to be issued, pending Mr. Hobbs' continued employment with the Company through December 31, 2020, the vesting date of the 2018 PSUs. The Company recorded stock-based compensation expense of $0.2 million in the three months ended March 31, 2019 in connection with the 2018 PSUs.

2017 PSU Grants. On March 31, 2017, the Company granted an aggregate of 165,000 PSUs with both market and service conditions to five of its executives (the "2017 PSUs"). The terms of each PSU grant were such that up to one-third of the shares subject to the respective PSU grant would vest, if at all, on each of the respective first, second and third anniversaries of the date of grant, depending on the Company's TSR compared with the TSR of the companies included in the Nasdaq Telecommunications Index for the same fiscal year, measured by the Compensation Committee after each of the fiscal years as defined by each grant (each, a "Performance Period"). The shares determined to be earned would vest on the anniversary of the grant date following each Performance Period. Shares subject to the PSUs that failed to be earned would be forfeited. In March 2018, the Compensation Committee determined that the performance metrics for the 2017 PSUs for the 2017 Performance Period had been achieved at the 130% level and accordingly, 33,584 shares in the aggregate were released to the three executives holding such outstanding grants, comprised of 25,834 shares, representing the 100% achievement target, granted on March 31, 2017 and 7,750 shares, representing the 30% achievement over target, granted on March 31, 2018. In February 2019, the Compensation Committee determined that the performance metrics for the 2017 PSUs for the 2018 Performance Period had been achieved at the 61.4% level and accordingly, 9,466 were released to the three executives holding such outstanding grants on March 31, 2019. The shares that failed to be earned for the 2018 Performance Period, aggregating 5,950 shares, were forfeited. At March 31, 2019, there were no remaining unvested 2017 PSUs outstanding. The release and forfeiture of the shares related to the 2018 Performance Period are included in the PSU table below.

Accounting for PSUs with Market Conditions. PSUs that include a market condition require the use of a Monte Carlo simulation approach to model future stock price movements based upon the risk-free rate of return, the date of return, the volatility of each entity and the pair-wise covariance between each entity. These results are then used to calculate the grant date fair values of the respective PSUs. The Company is required to record expense for the PSUs with market conditions through their respective final vesting dates, regardless of the number of shares that are ultimately earned. As of March 31, 2019, the calculation of the grant date fair value of the Market PSUs had not been completed. The Company used a grant date fair value of $5.22, the closing stock price on the date of grant, to calculate expense attributable to the three months ended March 31, 2019 for the Market PSUs. The Company is also using this stock price for PSU activity reported in the PSU table below. Upon completion of the Monte Carlo analysis and finalization of the grant date fair value of the Market PSUs, which it expects to complete in the second quarter of 2019, the Company will record a cumulative adjustment to expense and adjust their grant date fair for subsequent reporting. The Company does not expect the cumulative adjustment to expense will have a material impact on its consolidated financial statements.

Stock Options

The activity related to the Company's outstanding stock options for the three months ended March 31, 2019 was as follows:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (in thousands)
Outstanding at January 1, 2019	582,061	$ 9.01		
Granted	—	$ —		
Exercised	(88,354)	$ 1.70		
Forfeited	(12,991)	$ 2.62		
Expired	(20,724)	$ 9.63		
Outstanding at March 31, 2019	459,992	$ 10.56	4.93	$ 527
Vested or expected to vest at March 31, 2019	446,586	$ 10.81	4.84	$ 489
Exercisable at March 31, 2019	355,789	$ 13.02	4.08	$ 216

Additional information regarding the Company's stock options for the three months ended March 31, 2019 was as follows (in thousands):

Total intrinsic value of stock options exercised	$ 347
Cash received from the exercise of stock options	$ 151

Restricted Stock Awards and Units

The activity related to the Company's RSAs for the three months ended March 31, 2019 was as follows:

	Shares	Weighted Average Grant Date Fair Value
Unvested balance at January 1, 2019	1,508,011	$ 6.90
Granted	—	$ —
Vested	(540,503)	$ 7.03
Forfeited	(12,165)	$ 7.04
Unvested balance at March 31, 2019	955,343	$ 6.82

The activity related to the Company's RSUs for the three months ended March 31, 2019 was as follows:

	Shares	Weighted Average Grant Date Fair Value
Unvested balance at January 1, 2019	636,300	$ 6.52
Granted	1,567,675	$ 5.22
Vested	(266,310)	$ 5.68
Forfeited	—	$ —
Unvested balance at March 31, 2019	1,937,665	$ 5.58

The total grant date fair value of shares of restricted stock granted under RSAs and RSUs that vested during the three months ended March 31, 2019 was $5.3 million.

Performance-Based Stock Units

The activity related to the Company's PSUs for the three months ended March 31, 2019 was as follows:

	Shares	Weighted Average Grant Date Fair Value
Unvested balance at January 1, 2019	210,416	$ 5.77
Granted	835,735	$ 5.22
Vested	(9,466)	$ 8.55
Forfeited	(5,950)	$ 8.55
Unvested balance at March 31, 2019	1,030,735	$ 5.28

The total grant date fair value of shares of restricted stock granted under PSUs that vested during the three months ended March 31, 2019 was $0.1 million.

Employee Stock Purchase Plan

The Company's Amended and Restated 2000 Employee Stock Purchase Plan ("ESPP") is designed to provide eligible employees of the Company and its participating subsidiaries an opportunity to purchase common stock of the Company through accumulated payroll deductions. The ESPP provides for six-month offering periods with the purchase price of the stock equal to 85% of the lesser of the closing market price on the first or last day of the offering period. The maximum number of shares of common stock an employee may purchase during each offering period is 500, subject to certain adjustments pursuant to the ESPP.

In May 2017, the Compensation Committee determined to suspend all offering periods under the ESPP, effective September 1, 2017, until such time after the Merger Date as the Compensation Committee determined was best in its sole discretion. The Company's Board of Directors voted to re-implement the ESPP effective December 1, 2018 for employees in certain geographic regions, with the first purchase date of the re-implemented ESPP scheduled for May 31, 2019.

Stock-Based Compensation

The condensed consolidated statements of operations include stock-based compensation for the three months ended March 31, 2019 and 2018 as follows (in thousands):

	Three months ended	
	March 31, 2019	March 31, 2018
Product cost of revenue	$ 14	$ 51
Service cost of revenue	92	132
Research and development	507	900
Sales and marketing	984	874
General and administrative	2,542	867
	$ 4,139	$ 2,824

There is no income tax benefit for employee stock-based compensation expense for the three months ended March 31, 2019 or 2018 due to the valuation allowance recorded.

At March 31, 2019, there was $16.4 million, net of expected forfeitures, of unrecognized stock-based compensation expense related to unvested stock options, awards and units and the ESPP. This expense is expected to be recognized over a weighted average period of approximately two years.

(12) MAJOR CUSTOMERS

The following customers contributed 10% or more of the Company's revenue in the three months ended March 31, 2019 and 2018:

	Three months ended	
	March 31, 2019	March 31, 2018
Verizon Communications Inc.	15%	12%
AT&T Inc.	10%	*

* Represents less than 10% of revenue.

At March 31, 2019, two customers accounted for 10% or more of the Company's accounts receivable balance, representing approximately 26% in the aggregate of the Company's total accounts receivable. At December 31, 2018, two customers accounted for 10% or more of the Company's accounts receivable balance, representing approximately 32% in the aggregate of total accounts receivable. The Company performs ongoing credit evaluations of its customers and generally does not require collateral on accounts receivable. The Company maintains an allowance for doubtful accounts and such losses have been within management's expectations.

(13) RELATED PARTY TRANSACTIONS

As a portion of the consideration for the Merger, on October 27, 2017, the Company issued a Promissory Note for $22.5 million to certain of GENBAND's equity holders who, following the Merger, owned greater than five percent of the Company's outstanding shares. As described in Note 9 above, the Promissory Note does not amortize and the principal thereon is payable in full on the third anniversary of its execution. Interest on the Promissory Note is payable quarterly in arrears and accrued at a rate of 7.5% per year for the first six months after issuance, and thereafter at a rate of 10% per year. The failure to make any payment under the Promissory Note when due and, with respect to payment of any interest, the continuation of such failure for a period of thirty days thereafter, constitutes an event of default under the Promissory Note. If an event of default occurs under the Promissory Note, the payees may declare the entire balance of the Promissory Note due and payable (including principal and accrued and unpaid interest) within five business days of the payees' notification to the Company of such acceleration. At March 31, 2019, the Promissory Note balance was $24.7 million, which was comprised of $22.5 million of principal, plus $2.2 million of interest converted to principal. At December 31, 2018, the Promissory Note balance was $24.1 million, which was comprised of $22.5 million of principal, plus $1.6 million of interest converted to principal.

On April 29, 2019, the Company repaid in full all outstanding amounts under the Promissory Note. The Company did not incur any early termination penalties in connection with this repayment.

(14) INCOME TAXES

The Company's income tax provisions for the three months ended March 31, 2019 and 2018 reflect the Company's estimates of the effective rates expected to be applicable for the respective full years, adjusted for any discrete events, which are recorded in the period that they occur. These estimates are reevaluated each quarter based on the Company's estimated tax expense for the full year. The estimated effective rates do not include any benefit for the Company's domestic losses for the three months ended March 31, 2019 and 2018 or for the Company's Ireland losses for the three months ended March 31, 2018, as the Company has concluded that a valuation allowance is required.

The Tax Cuts and Jobs Act enacted in December 2017 allowed for a measurement period to complete the accounting for certain elements of the tax reform. The Company recorded a nominal adjustment in the three months ended March 31, 2018 to reduce the benefit of the provisional impact relating to the change in its deferred tax assets as a result of the new federal tax rate of 21%.

(15) LEASES

The Company has operating and finance leases for corporate offices, research and development facilities, and certain equipment. Operating leases are reported separately and finance leases are included in Property and equipment, net, in the condensed consolidated balance sheet at March 31, 2019. Finance leases are included in Property and equipment, net, in the condensed consolidated balance sheet at December 31, 2018.

The Company determines if an arrangement is a lease at inception. A contract is determined to contain a lease component if the arrangement provides the Company with a right to control the use of an identified asset. Lease agreements may include lease and non-lease components. In such instances for all classes of underlying assets, the Company does not separate lease and non-lease components but rather accounts for the entire arrangement under leasing guidance. Leases with an initial term of 12 months or less are not recorded on the balance sheet and lease expense for these leases is recognized on a straight-line basis over the lease term.

Right-of-use assets and lease liabilities are initially measured based on the present value of the future minimum fixed lease payments (i.e., fixed payments in the lease contract) over the lease term at the commencement date. As many of the Company's leases do not have a readily determinable implicit rate, the Company typically uses its incremental borrowing rate based on the information available at the commencement date in determining the present value of future minimum fixed lease payments. The Company calculates its incremental borrowing rate to reflect the interest rate that it would have to pay to borrow on a collateralized basis an amount equal to the lease payments in a similar economic environment over a similar term and considers its historical borrowing activities and market data from entities with comparable credit ratings in this determination. The measurement of the right-of-use asset also includes any lease payments made prior to the commencement date (excluding any lease incentives) and initial direct costs incurred. The Company assessed its right-of-use assets for impairment as of March 31, 2019 and determined no impairment has occurred.

Lease terms may include options to extend or terminate the lease and the Company incorporates such options in the lease term when it has the unilateral right to make such an election and it is reasonably certain that the Company will exercise that option. In making this determination, the Company considers its prior renewal and termination history and planned usage of the assets under lease, incorporating expected market conditions.

For operating leases, lease expense for minimum fixed lease payments is recognized on a straight-line basis over the lease term. The expense for finance leases includes both interest and amortization expense components, with the interest component calculated based on the effective interest method and the amortization component calculated based on straight-line amortization of the right-of-use asset over the lease term. Lease contracts may contain variable lease costs, such as common area maintenance, utilities and tax reimbursements that vary over the term of the contract. Variable lease costs are not included in minimum fixed lease payments and as a result, are excluded from the measurement of the right-of-use assets and lease liabilities. The Company expenses all variable lease costs as incurred.

The Company leases its corporate offices and other facilities under operating leases, which expire at various times through 2029. The Company's corporate headquarters is located in a leased facility in Westford, Massachusetts, consisting of 97,500 square feet under a lease that expires in August 2028. The Company's finance leases primarily consist of equipment.

The Company's right-of-use lease assets and lease liabilities at March 31, 2019 and December 31, 2018 were as follows (in thousands):

	Classification	March 31, 2019	December 31, 2018
Assets			
Operating lease assets	Operating lease right-of-use assets	$ 42,166	$ —
Finance lease assets*,**	Property and equipment, net	1,850	2,104
Total leased assets		$ 44,016	$ 2,104
Liabilities			
Current			
Operating	Operating lease liabilities	$ 7,214	$ —
Finance	Accrued expenses and other	1,026	1,039
Noncurrent			
Operating	Operating lease liabilities, net of current	39,151	—
Finance	Other long-term liabilities	1,107	1,324
Total lease liabilities		$ 48,498	$ 2,363

* Finance lease assets were recorded net of accumulated depreciation of $1.1 million at March 31, 2019 and $0.9 million at December 31, 2018.
** Finance lease assets were reported as capital lease assets prior to the Company's adoption of ASU 2016-02.

The components of lease expense for the three months ended March 31, 2019 were as follows (in thousands):

Operating lease cost	$ 2,441
Finance lease cost	
Amortization of leased assets	244
Interest on lease liabilities	64
Short-term lease cost	4,671
Variable lease costs (costs excluded from minimum fixed lease payments)	601
Net lease cost	$ 8,021

The Company elected to use the alternative transition method as described in ASU 2018-11, which allows entities to initially apply ASU 2016-02 at the adoption date with no subsequent adjustments to prior period lease costs for comparability. As a result, operating leases in periods prior to the Company's adoption of ASU 2016-02 were not recorded on the consolidated balance sheet. Prior to the adoption of ASU 2016-02, rent expense (including any escalation clauses, free rent and other lease concessions) on operating leases was recognized on a straight-line basis over the minimum lease term, and this remains consistent with the Company's application of ASU 2016-02. Rent expense for the operating leases was $3.0 million for the three months ended March 31, 2018. Interest expense for finance leases was approximately $19,000 and amortization expense for finance leases was $0.1 million for the three months ended March 31, 2018.

Other information related to the Company's leases as of and for the three months ended March 31, 2019 was as follows (in thousands, except lease terms and percentages):

Cash paid for amounts included in the measurement of lease liabilities		
Operating cash flows from operating leases	$	2,355
Operating cash flows from finance leases	$	64
Financing cash flows from finance leases	$	230
Weighted average remaining lease term (years)		
Operating leases		7.30
Finance leases		1.90
Weighted average discount rate		
Operating leases		6.54%
Finance leases		12.29%

Future minimum fixed lease payments under noncancellable leases at March 31, 2019 were as follows (in thousands):

	Operating leases	Finance leases
Remainder of 2019	$ 7,457	$ 1,052
2020	9,202	1,039
2021	8,351	299
2022	6,584	—
2023	6,298	—
2024 and beyond	20,745	—
Total lease payments	58,637	2,390
Less: interest	(12,272)	(257)
Present value of lease liabilities	$ 46,365	$ 2,133

Future minimum fixed lease payments under noncancellable leases at December 31, 2018 and as reported in the Company's Annual Report on Form 10-K/A for the year ended December 31, 2018 were as follows (in thousands):

	Operating leases*	Finance leases
2019	$ 10,705	$ 1,386
2020	8,384	1,010
2021	7,455	288
2022	5,691	—
2023	5,430	—
2024 and beyond	19,818	—
Total lease payments	$ 57,483	2,684
Less: interest		(321)
Present value of lease liabilities**		$ 2,363

* The amounts in this column include restructuring payments aggregating approximately $1 million, of which approximately 50% was due in less than one year and the remainder was due in one to three years. These amounts exclude current estimated sublease income aggregating approximately $125,000 over the remaining lease terms for restructured facilities.

** Prior to the Company's adoption of ASU 2016-02 on January 1, 2019, operating leases were not recorded on the consolidated balance sheet and no interest component was calculated.

(16) COMMITMENTS AND CONTINGENCIES

The Company is involved in six lawsuits (together, the "Lawsuits") with Metaswitch Networks Ltd., Metaswitch Networks Corp. and Metaswitch Inc. (together, “Metaswitch”). In five of the Lawsuits, the Company is the plaintiff and, in three of those five lawsuits, the Company is also a counterclaim defendant. In the sixth case, the Company is the defendant. On January 21, 2014, GENBAND and the Company’s indirectly-owned subsidiary, GENBAND US LLC, filed a complaint in the Eastern District of Texas, Marshall Division, alleging that Metaswitch infringed certain patents owned by GENBAND. Following unsuccessful mediation, a trial took place and on January 15, 2016, the jury awarded $8.2 million in past royalty damages to GENBAND, which neither GENBAND nor the Company has recorded. On September 29, 2016, the district court confirmed the jury verdict following motions from both parties. On March 22, 2018, the district court entered final judgment awarding GENBAND $8.9 million in royalties for damages through January 15, 2016 at rates set by the district court, excluding pre- and post-judgment interest and costs. On April 10, 2018, the clerk of the district court set the awarded costs at $0.4 million. On April 19, 2018, Metaswitch filed a notice of appeal (the "Appeal") on the judgment with United States Court of Appeals for the Federal Circuit (the "Appeals Court"), and filed its appeal brief on July 6, 2018. Oral argument on the appeal occurred on March 8, 2019 and the parties are awaiting the Appeals Court's ruling on the Appeal.

On April 18, 2018, through Sonus, the Company filed a complaint in the Eastern District of Texas, Marshall Division, alleging that Metaswitch is continuing to infringe the patents from the first lawsuit above through sales of Metaswitch's allegedly "redesigned" products. This suit seeks a finding that Metaswitch's infringement is willful. This suit also alleges false advertising and seeks monetary damages resulting from allegedly false and misleading statements Metaswitch made regarding the first lawsuit. On March 25, 2019, the district court stayed the case pending the Appeals Court's ruling on the Appeal.

Through Sonus and GENBAND US LLC, the Company is involved as plaintiff and counterclaim defendant in a lawsuit with Metaswitch regarding claims that Metaswitch misappropriated trade secrets of GENBAND, and the Company is seeking monetary damages. This case is pending in state court in Dallas County, Texas, and stems from claims originally brought in a patent lawsuit between GENBAND and Metaswitch. The state court action was filed on March 28, 2017. Metaswitch filed its answer on April 21, 2017, in which it asserted counterclaims against GENBAND. On July 11, 2018, Metaswitch filed its fifth amended answer and counterclaims against GENBAND. The Texas state court has set a special setting for a trial for this case on April 22, 2019.

Through Sonus, the Company is also involved as plaintiff and counterclaim defendant in two patent infringement lawsuits with Metaswitch asserting the infringement of a total of ten patents that came into the Company from Sonus, and the Company is seeking monetary damages. Sonus filed these two lawsuits in the Eastern District of Texas, Marshall Division, on March 8, 2018. Metaswitch filed its answers on May 15, 2018, in which it asserted counterclaims against Sonus, including alleged infringement by the Company and Sonus of a total of ten patents. The district court has set trials for these cases to occur on February 18, 2020 and June 15, 2020.

On November 19, 2018, Metaswitch filed a complaint against the Company and several of its subsidiaries in the Southern District of New York, alleging various antitrust violations based, in large part, on allegations that GENBAND should not have brought its successful patent infringement lawsuit against Metaswitch. Metaswitch is seeking monetary damages. On March 7, 2019, the district court granted the Company's motion to reassign the case to the Eastern District of Texas, Marshall Division. On March 25, 2019, the district court for the Eastern District of Texas, Marshall Division, stayed the case pending the Appeals Court's ruling on the Appeal.

On April 22, 2019, the Company and Metaswitch agreed to a binding mediator's proposal (the "Mediation Agreement") that resolves the six Lawsuits between the Company and Metaswitch (the "Lawsuits"). The Company and Metaswitch will be memorializing the Mediation Agreement in final settlement documents. Pursuant to the terms of the Mediation Agreement, Metaswitch has agreed to pay the Company an aggregate amount of $63.0 million, which includes cash payments of $37.5 million during the second quarter of 2019 and $25.5 million payable in three installments annually, beginning in 2020, and such installment payments by Metaswitch will accrue interest at a rate of 4% per year. The Company and Metaswitch expect to cross-license certain patents that the Company and Metaswitch own. The Company and Metaswitch have agreed to stay the Lawsuits pending the completion of the final settlement documents.

On November 8, 2018, Ron Miller, a purported stockholder of the Company, filed a Class Action Complaint (the "Miller Complaint") in the United States District Court for the District of Massachusetts (the "Massachusetts District Court") against the Company and three of its former officers, Raymond P. Dolan, Mark T. Greenquist and Michael Swade (collectively, the "Defendants"), claiming to represent a class of purchasers of Sonus common stock during the period from January 8, 2015 through March 24, 2015 and alleging violations of the federal securities laws. Similar to a previous complaint entitled Sousa et al. vs. Sonus Networks, Inc. et al., which was dismissed with prejudice by an order dated June 6, 2017, the Miller Complaint claims that the Defendants made misleading forward-looking statements concerning Sonus' expected fiscal first quarter of 2015 financial performance, which statements were also the subject of the order, whose findings the Company neither admitted nor denied. The Miller plaintiffs are seeking monetary damages.

After the Miller Complaint was filed, several parties filed and briefed motions seeking to be selected by the Massachusetts District Court to serve as a Lead Plaintiff in the action. Briefing on the issue was completed on January 30, 2019 and the Massachusetts District Court is expected to issue a decision shortly. The Company has not yet filed an answer, and the Massachusetts District Court has not yet set a schedule.

In addition, the Company is often a party to disputes and legal proceedings that it considers routine and incidental to its business. Management does not expect the results of any of these actions to have a material effect on the Company's business or consolidated financial statements.

(17) SUBSEQUENT EVENTS

In the second quarter of 2019, the Company's Board of Directors (the "Board") approved a stock repurchase program pursuant to which the Company may repurchase up to $75.0 million of the Company's common stock prior to April 18, 2021. Repurchases under the program may be made in the open market, in privately negotiated transactions or otherwise, with the amount and timing of repurchases depending on market conditions and corporate discretion. This program does not obligate the Company to acquire any particular amount of common stock and the program may be extended, modified, suspended or discontinued at any time at the Board's discretion.

On April 22, 2019, the Company and Metaswitch agreed to the Mediation Agreement that resolves the Lawsuits. See Note 16 included herein for a discussion of the Lawsuits and Mediation Agreement.

On April 29, 2019, the Company amended and restated its Credit Facility. See Note 9 included herein for a discussion of the New Credit Facility.

On April 29, 2019, concurrently with entering into the New Credit Facility, the Company repaid in full the Promissory Note dated as of October 27, 2017. See Notes 9 and 13 included herein for a discussion of the Promissory Note and its repayment.

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

The following discussion of the financial condition and results of operations of Ribbon Communications Inc. should be read in conjunction with the condensed consolidated financial statements and the related notes thereto included elsewhere in this Quarterly Report on Form 10-Q and the audited financial statements and notes thereto and Management's Discussion and Analysis of Financial Condition and Results of Operations included in our Annual Report on Form 10-K/A, for the year ended December 31, 2018, which was filed with the U.S. Securities and Exchange Commission on March 5, 2019.

Overview

We are a leading provider of next generation ("NextGen") software solutions to telecommunications, wireless and cable service providers and enterprises across industry verticals. With over 1,000 customers around the globe, including some of the largest telecommunications service providers and enterprises in the world, we enable service providers and enterprises to modernize their communications networks through software and provide secure real-time communications ("RTC") solutions to their customers and employees. By securing and enabling reliable and scalable Internet Protocol ("IP") networks, we help service providers and enterprises adopt the next generation of software-based virtualized and cloud communications technologies for service providers to drive new, incremental revenue while protecting their existing revenue streams. Our software solutions provide a secure way for our customers to connect and leverage multivendor, multiprotocol communications systems and applications across their networks and the cloud, around the world and in a rapidly changing ecosystem of IP-enabled devices, such as smartphones and tablets. In addition, our software solutions secure cloud-based delivery of unified communications ("UC") solutions - both for service providers transforming to a cloud-based network and for enterprises using cloud-based UC. We sell our software solutions through both direct sales and indirect channels globally, leveraging the assistance of resellers, and we provide ongoing support to our customers through a global services team with experience in design, deployment and maintenance of some of the world's largest IP networks.

Business Acquisitions

Anova Data, Inc.

On February 28, 2019 (the "Anova Acquisition Date"), we acquired the business and technology assets of Anova Data, Inc. ("Anova"), a private company headquartered in Westford, Massachusetts (the "Anova Acquisition"). Anova is a provider of advanced analytics solutions and its NextGen products provide a cloud-native, streaming analytics platform for network and subscriber optimization and monetization. The Company believes that the acquisition of Anova will reinforce and extend Ribbon's strategy to expand into network optimization, security and data monetization via big data analytics and machine learning.

As consideration for the Anova Acquisition, we issued 2.9 million shares of Ribbon common stock with a fair value of $15.2 million to Anova's sellers and equityholders on the Anova Acquisition Date and held back an additional 0.3 million shares with a fair value of $1.7 million, some or all of which could be issued subject to post-closing adjustments (the "Anova Deferred Consideration"). The Anova Deferred Consideration is included as a component of Accrued expenses and other current liabilities in our condensed consolidated balance sheet at March 31, 2019.

The Anova Acquisition has been accounted for as a business combination and the financial results of Anova have been included in the Company's consolidated financial statements for the period subsequent to its acquisition.

Edgewater Networks, Inc.

On August 3, 2018 (the "Edgewater Acquisition Date"), we completed our acquisition of Edgewater Networks, Inc. ("Edgewater"), a private company headquartered in San Jose, California (the "Edgewater Acquisition"). Edgewater is a market leader in Network Edge Orchestration for the small and medium enterprise and UC market. We believe that the acquisition of Edgewater advances our strategy by offering our global customer base a complete core-to-edge product portfolio, end-to-end service assurance and analytics solutions, and a fully integrated SD-WAN service.

As consideration for the Edgewater Acquisition, we paid, in the aggregate, approximately $46 million of cash, net of cash acquired, and issued 4.2 million shares of Ribbon common stock to Edgewater's selling shareholders and holders of vested in-the-money options and warrants to acquire common stock of Edgewater (the "Edgewater Selling Stakeholders") on the Edgewater Acquisition Date. The cash payment was funded through our existing credit facility. We had previously agreed to pay the Edgewater Selling Stakeholders an additional $30 million of cash, $15 million of which was to be paid six months from the Edgewater Acquisition Date and the other $15 million of which was to be paid as early as nine months from the Edgewater Acquisition Date and no later than 18 months from the Edgewater Acquisition Date (the exact timing of which would depend on the amount of revenue generated from the sales of Edgewater products in 2018) (the "Edgewater Deferred Consideration").

On February 15, 2019, we and the Edgewater Selling Stakeholders agreed to reduce the amount of Edgewater Deferred Consideration from $30 million to $21.9 million and agreed that all such deferred consideration would be payable on March 8, 2019. We paid the Edgewater Selling Stakeholders $21.9 million on March 8, 2019 and recorded the reduction to the Edgewater Deferred Consideration of $8.1 million in Other income, net, in our condensed consolidated statement of operations for the three months ended March 31, 2019.

The Edgewater Acquisition has been accounted for as a business combination and the financial results of Edgewater have been included in our consolidated financial statements for the period subsequent to the Edgewater Acquisition Date.

Financial Overview

Financial Results

We reported losses from operations of approximately $36 million for the three months ended March 31, 2019 and $42 million for the three months ended March 31, 2018.

Our revenue was approximately $119 million in the three months ended March 31, 2019 and $121 million in the three months ended March 31, 2018.

Our gross profit was approximately $57 million in the three months ended March 31, 2019 and $55 million in the three months ended March 31, 2018. Our gross profit as a percentage of revenue ("total gross margin") was approximately 48% in the three months ended March 31, 2019 and 46% in the three months ended March 31, 2018.

Our operating expenses were approximately $93 million in the three months ended March 31, 2019 and $98 million in the three months ended March 31, 2018. Operating expenses for the three months ended March 31, 2019 included approximately $3 million of acquisition- and integration-related expense and approximately $5 million of restructuring expense. Operating expenses for the three months ended March 31, 2018 included approximately $4 million of acquisition- and integration-related expense and $7 million of restructuring expense.

We recorded stock-based compensation expense of approximately $4 million in the three months ended March 31, 2019 and $3 million in the three months ended March 31, 2018. These amounts are included as components of both Cost of revenue and Operating expenses in our condensed consolidated statements of operations.

See "Results of Operations" in this Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") for a discussion of the changes in our revenue and expenses for the three months ended March 31, 2019 compared with the three months ended March 31, 2018.

Restructuring and Cost Reduction Initiatives

In connection with the Merger, we implemented a restructuring plan in the fourth quarter of 2017 to eliminate certain redundant positions and facilities within the combined companies (the "Merger Restructuring Initiative"). In connection with this initiative, we recorded restructuring expense of approximately $5 million in the three months ended March 31, 2019, primarily for severance and related costs for approximately 40 employees, and approximately $7 million in the three months ended March 31, 2018 for severance and related costs for approximately 115 employees. We anticipate we will record nominal future expense in connection with this initiative as we continue to combine the two businesses and benefit from operational synergies. In connection with the adoption of ASC 842 effective January 1, 2019, we wrote off the remaining restructuring accrual related to facilities under ASC 842. We expect that the amount accrued at March 31, 2019 for severance will be paid by the end of the first half of 2020.

At December 31, 2018, the Company had nominal restructuring accrual balances under three other restructuring initiatives, all related to redundant facilities. In connection with the adoption of ASC 842, on January 1, 2019, the Company wrote off the remaining restructuring accruals of two initiatives and expects to utilize the remaining accrual under the third initiative in the second quarter of 2019.

Critical Accounting Policies and Estimates

Management's discussion and analysis of financial condition and results of operations is based upon our condensed consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP"). The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. We base our estimates and judgments on historical experience, knowledge of current conditions and beliefs of what could occur in the future given available information. We consider the following accounting policies to be both those most important to the portrayal of our financial condition and those that require the most subjective judgment: revenue recognition, valuation of inventory, loss contingencies and reserves, stock-based compensation, business combinations, goodwill and intangible assets, accounting for leases and accounting for income taxes. If actual results differ significantly from management's estimates and projections, there could be a material effect on our condensed consolidated financial statements. With the exception of our lease accounting policy below, there were no significant changes to our critical accounting policies from December 31, 2018 through March 31, 2019.

Leases. Effective January 1, 2019, we adopted Accounting Standards Update ("ASU") 2016-02, *Leases (Topic 842) Section A - Leases: Amendments to the FASB Accounting Standards Codification* ("ASU 2016-02"), the Financial Accounting Standards Board's ("FASB") new standard on accounting for leases. ASU 2016-02 introduces a lessee model that brings most leases onto the balance sheet and eliminates the current GAAP requirement for an entity to use bright-line tests in determining lease classification. We must determine if an arrangement is a lease at inception. A contract is determined to contain a lease component if the arrangement provides us with a right to control the use of an identified asset. Lease agreements may include lease and non-lease components. In such instances for all classes of underlying assets, we do not separate lease and non-lease components but instead account for the entire arrangement under leasing guidance. Leases with an initial term of 12 months or less are not recorded on the balance sheet and lease expense for these leases is recognized on a straight-line basis over the lease term.

Right-of-use assets and lease liabilities are initially measured based on the present value of the future minimum fixed lease payments (i.e., fixed payments in the lease contract) over the lease term at the commencement date. As many of our leases do not have a readily determinable implicit rate, we typically use our incremental borrowing rate based on the information available at the commencement date in determining the present value of future minimum fixed lease payments. We calculate our incremental borrowing rate to reflect the interest rate that we would have to pay to borrow on a collateralized basis an amount equal to the lease payments in a similar economic environment over a similar term and consider our historical borrowing activities and market data from entities with comparable credit ratings in this determination. The measurement of the right-of-use asset also includes any lease payments made prior to the commencement date (excluding any lease incentives) and initial direct costs incurred. We assessed our right-of-use assets for impairment as of March 31, 2019 and determined no impairment has occurred.

Lease terms may include options to extend or terminate the lease and we incorporate such options in the lease term when we have the unilateral right to make such an election and it is reasonably certain that we will exercise that option. In making this determination, we consider our prior renewal and termination history and planned usage of the assets under lease, incorporating expected market conditions.

For a further discussion of our other critical accounting policies and estimates, please refer to our Annual Report on Form 10-K/A for the year ended December 31, 2018.

Results of Operations

Three months ended March 31, 2019 and 2018

Revenue. Revenue for the three months ended March 31, 2019 and 2018 was as follows (in millions, except percentages):

	Three months ended		Increase (decrease) from prior year	
	March 31, 2019	March 31, 2018	$	%
Product	$ 47.5	$ 51.5	$ (4.0)	(7.9)%
Service	71.4	69.7	1.7	2.6 %
Total revenue	$ 118.9	$ 121.2	$ (2.3)	(1.9)%

Our product revenue is generated from sales of software with attached appliances, software licenses and software subscription fees. Certain of our products may be included in more than one of our solutions (session solutions, network transformation solutions, and applications and security solutions), dependent upon the configuration of the individual customer solutions sold. Our software with attached appliances and software license revenues are primarily comprised of our media gateway, call controller, signaling, virtual mobile core and management (i.e., analytics, assurance, billing, etc.) products. Our software subscription fees revenue is primarily comprised of sales of our UC-related (i.e., application server, media server, etc.), Kandy Cloud and Ribbon Protect products. All three of our solutions portfolios address both the service provider and enterprise markets and are sold through both our direct sales program and from indirect sales through our channel partner program.

The decrease in product revenue in the three months ended March 31, 2019 compared with the three months ended March 31, 2018 was primarily the result of lower sales of our software with attached appliances aggregating approximately $6 million, partially offset by approximately $2 million of higher revenue from sales of our software licenses and subscriptions.

Approximately 40% of our product revenue in the three months ended March 31, 2019 was from indirect sales through our channel partner program, compared with approximately 16% in the three months ended March 31, 2018.

Our product revenue from sales to enterprise customers was approximately 31% of our product revenue in the three months ended March 31, 2019, compared with approximately 14% in the three months ended March 31, 2018. These sales were made both through our direct sales team and indirect sales channel partners.

The timing of the completion of customer projects and revenue recognition criteria satisfaction may cause our product revenue to fluctuate from one period to the next.

Service revenue is primarily comprised of appliance and software maintenance and support ("maintenance revenue") and network design, installation and other professional services ("professional services revenue").

Service revenue for the three months ended March 31, 2019 and 2018 was comprised of the following (in millions, except percentages):

	Three months ended		Increase from prior year	
	March 31, 2019	March 31, 2018	$	%
Maintenance	$ 57.0	$ 56.1	$ 0.9	1.7%
Professional services	14.4	13.6	0.8	6.4%
	$ 71.4	$ 69.7	$ 1.7	2.6%

Our maintenance revenue increased slightly in the three months ended March 31, 2019 compared with the three months ended March 31, 2018, primarily due to the inclusion of approximately $2 million of maintenance revenue attributable to Edgewater.

The increase in our professional services revenue was primarily due to the timing and related revenue recognition of certain projects in the three months ended March 31, 2019 compared to the three months ended March 31, 2018.

The following customers contributed 10% or more of our revenue in at least one of the three-month periods ended March 31, 2019 and 2018:

	Three months ended	
Customer	March 31, 2019	March 31, 2018
Verizon Communications Inc.	15%	12%
AT&T Inc.	10%	*

* Represents less than 10% of total revenue.

Revenue earned from customers domiciled outside the United States was approximately 42% of revenue in the three months ended March 31, 2019 and approximately 53% of revenue in the three months ended March 31, 2018. Due to the timing of project completions, we expect that the domestic and international components as a percentage of revenue may fluctuate from quarter to quarter and year to year.

Our deferred product revenue was approximately $16 million at March 31, 2019 and $14 million at December 31, 2018. Our deferred service revenue was approximately $109 million at March 31, 2019 and $108 million at December 31, 2018.

Our deferred revenue balance may fluctuate because of the timing of revenue recognition, customer payments, maintenance contract renewals, contractual billing rights and maintenance revenue deferrals included in multiple element arrangements.

We expect that our product revenue in 2019 will increase compared with 2018 levels, primarily due to the inclusion of revenue attributable to our acquisitions of Edgewater and Anova.

We expect that our service revenue in 2019 will increase compared with 2018 levels, primarily due to the inclusion of revenue attributable to Edgewater and the continued organic growth of our installed customer base. However, we expect to continue to encounter ongoing industry pricing pressure, third-party competition and legacy network product decommissioning.

Overall, we expect that total revenue in 2019 will increase compared with our 2018 total revenue, primarily due to the inclusion of revenue attributable to our acquisitions of Edgewater and Anova.

In connection with the purchase price allocation to record our acquisition of GENBAND, we were required to record at fair value the assumed deferred revenue, resulting in a reduction of approximately $50 million to the assumed deferred revenue and future recognizable revenue. Our purchase price allocation to record our acquisition of Edgewater resulted in a reduction of approximately $4 million to the assumed deferred revenue and future recognizable revenue. In the three months ended March 31, 2019, we recognized approximately $3 million less revenue in the aggregate than GENBAND and Edgewater would have recognized in the same period had the Merger and Edgewater Acquisition not occurred. We recognized approximately $11 million less revenue in the three months ended March 31, 2018 than GENBAND would have recognized in the same period had the Merger not occurred. We expect that these purchase accounting-related reductions to future revenue will continue through 2020, primarily impacting future service revenue.

Cost of Revenue/Gross Margin. Our cost of revenue consists primarily of amounts paid to third-party manufacturers for purchased materials and services, royalties and manufacturing and services personnel and related costs. Our cost of revenue and gross margins for the three months ended March 31, 2019 and 2018 were as follows (in millions, except percentages):

	Three months ended		Increase (decrease) from prior year	
	March 31, 2019	March 31, 2018	$	%
Cost of revenue				
Product	$ 33.1	$ 33.0	$ 0.1	0.4 %
Service	29.2	32.9	(3.7)	(11.3)%
Total cost of revenue	$ 62.3	$ 65.9	$ (3.6)	(5.4)%
Gross margin				
Product	30.2%	35.9%		
Service	59.1%	52.8%		
Total gross margin	47.6%	45.6%		

The decrease in product gross margin in the three months ended March 31, 2019 compared with the three months ended March 31, 2018 was equally attributable to product and customer mix and the effect of our lower revenue on our fixed costs. Our purchases of materials and components in the three months ended March 31, 2019 were approximately $16 million, compared to approximately $17 million for the three months ended March 31, 2018. While we expect that our future purchases of materials and components will decrease as a result of the increase in software content of our products, both in absolute terms and as a percentage of revenue, the percentage of product revenue may fluctuate due to recognition of revenue of certain projects or products in any period.

The increase in service gross margin in the three months ended March 31, 2019 compared with the three months ended March 31, 2018 was primarily due to lower direct costs resulting primarily from the reduction of third-party maintenance expense, which increased our service gross margin by approximately four percentage points, and the impact of our cost-reduction measures, which increased our service gross margin by approximately two percentage points. Our service cost of revenue is relatively fixed in advance of any particular quarter and therefore, changes in service revenue will typically have a significant impact on service gross margin.

We believe that our total gross margin will increase in 2019 compared with 2018, primarily due to the expected higher software content as a percentage of our total revenue, coupled with the impact of our restructuring and integration cost reduction initiatives.

Research and Development Expenses. Research and development expenses consist primarily of salaries and related personnel expenses and prototype costs for the design, development, testing and enhancement of our products. Research and development expenses for the three months ended March 31, 2019 and 2018 were as follows (in millions, except percentages):

	March 31, 2019	March 31, 2018	Decrease from prior year $	Decrease from prior year %
Three months ended	$ 35.9	$ 39.0	$ (3.1)	(8.0)%

The decrease in research and development expenses in the three months ended March 31, 2019 compared with the three months ended March 31, 2018 was attributable to approximately $3 million of lower employee-related expenses and approximately $1 million of lower product development expenses (i.e., third-party development, prototype and test equipment costs). These amounts were partially offset by higher infrastructure and depreciation expenses aggregating approximately $1 million.

Some aspects of our research and development efforts require significant short-term expenditures, the timing of which may cause significant variability in our expenses. We believe that rapid technological innovation is critical to our long-term success, and we are tailoring our investments to meet the requirements of our customers and market. We believe that our research and development expenses in 2019 will increase compared with 2018 levels due to our continued investment in our software solutions and the impact of Edgewater's research and development expenses for the full year 2019, partially offset by savings from our ongoing restructuring and integration cost savings initiatives.

Sales and Marketing Expenses. Sales and marketing expenses primarily consist of salaries and related personnel costs, commissions, travel and entertainment expenses, promotions, customer trial and evaluations inventory and other marketing and sales support expenses. Sales and marketing expenses for the three months ended March 31, 2019 and 2018 were as follows (in millions, except percentages):

	March 31, 2019	March 31, 2018	Decrease from prior year $	Decrease from prior year %
Three months ended	$ 30.1	$ 31.9	$ (1.8)	(5.8)%

The decrease in sales and marketing expenses in the three months ended March 31, 2019 compared with the three months ended March 31, 2018 was primarily attributable to approximately $1 million of lower employee-related expenses and approximately $1 million of net decreases in other sales and marketing expenses.

We believe that our sales and marketing expenses will be essentially flat in 2019 compared with 2018, as we expect the inclusion of Edgewater's sales and marketing expenses for the full year 2019 will be offset by cost savings from our ongoing restructuring and integration cost savings initiatives.

General and Administrative Expenses. General and administrative expenses consist primarily of salaries and related personnel costs for executive and administrative personnel, recruiting expenses and audit, legal and other professional fees. General and administrative expenses for the three months ended March 31, 2019 and 2018 were as follows (in millions, except percentages):

	March 31, 2019	March 31, 2018	Increase from prior year $	Increase from prior year %
Three months ended	$ 18.7	$ 15.6	$ 3.1	19.8%

The increase in general and administrative expenses in the three months ended March 31, 2019 compared with the three months ended March 31, 2018 was primarily attributable to approximately $5 million of higher professional fees (i.e., legal, audit and outside services), partially offset by approximately $2 million of savings in the current year quarter resulting from the absence of expense for settlement fees recorded in the three months ended March 31, 2018, primarily related to the settlement of litigation in connection with our acquisition of Taqua LLC.

We believe that our general and administrative expenses will decrease in 2019 compared with 2018, primarily due to savings from our restructuring and integration cost savings initiatives combined with lower litigation costs.

Acquisition- and Integration-Related Expenses. Acquisition- and integration-related expenses include those expenses related to acquisitions that we would otherwise not have incurred. Acquisition-related expenses include professional and services fees, such as legal, audit, consulting, paying agent and other fees, and expenses related to cash payments to certain former executives of the acquired businesses in connection with their employment agreements. Integration-related expenses represent incremental costs related to combining the Company's systems and processes with those of acquired businesses, such as third-party consulting and other third-party services. We recorded approximately $3 million of acquisition- and integration-related expenses in the three months ended March 31, 2019, which was equally comprised of acquisition-related professional and services fees and integration-related expenses. The acquisition-related expense primarily relates to the Anova Acquisition. We recorded approximately $4 million of acquisition- and integration-related expenses in the three months ended March 31, 2018 related to the Merger, comprised of approximately $2 million of acquisition-related expense and approximately $2 million of integration-related expense. The acquisition-related expense was primarily related to cash payments to certain former executives of an acquired entity. We estimate that we will incur additional integration-related expense in the remainder of 2019 approximating $1 million.

Restructuring Expense. We have been committed to streamlining operations and reducing operating costs by closing and consolidating certain facilities and reducing our worldwide workforce. Please see the additional discussion of our restructuring initiatives in the "Restructuring and Cost Reduction Initiatives" section of the Overview of this Management's Discussion and Analysis of Financial Condition and Results of Operations.

We recorded restructuring expense of approximately $5 million in the three months ended March 31, 2019 and approximately $7 million in the three months ended March 31, 2018, primarily in connection with our Merger Restructuring Initiative for severance and related costs.

Although we have eliminated positions as part of our restructuring initiatives, we continue to hire in certain areas that we believe are important to our future growth. Restructuring expense is reported separately in the condensed consolidated statements of operations.

Interest Expense, Net. Interest income and interest expense for the three months ended March 31, 2019 and 2018 were as follows (in millions, except percentages):

	Three months ended		Increase (decrease) from prior year	
	March 31, 2019	March 31, 2018	$	%
Interest income *	$ —	$ 0.1	$ (0.1)	(66.7)%
Interest expense	(1.4)	(0.7)	0.7	100.0 %
	$ (1.4)	$ (0.6)	$ 0.8	(127.7)%

* Amount reported for the three months ended March 31, 2019 rounds to less than $0.1 million.

Interest income in the three months ended March 31, 2019 and 2018 consisted of interest earned on our cash equivalents, marketable securities and investments. Interest expense in the three months ended March 31, 2019 and 2018 was primarily comprised of interest on the related party promissory note issued in connection with the Merger, the outstanding revolving credit facility balance, the amortization of debt issuance costs in connection with our revolving credit facilities and interest on finance lease obligations. The higher interest expense in the three months ended March 31, 2019 compared with the three months ended March 31, 2018 was primarily due to higher outstanding borrowings. The decrease in interest income in the three months ended March 31, 2019 compared with the three months ended March 31, 2018 was primarily due to lower amounts invested in the current year period.

Income Taxes. We recorded provisions for income taxes of approximately $1 million in the three months ended March 31, 2019 and approximately $2 million in the three months ended March 31, 2018. These amounts reflect our estimates of the effective rates expected to be applicable for the respective full fiscal years, adjusted for any discrete events, which are recorded in the period that they occur. These estimates are reevaluated each quarter based on our estimated tax rate for the full fiscal year. The estimated amounts do not include any benefit for our domestic losses for the three months ended March 31, 2019 and 2018 or for our Ireland losses for the three months ended March 31, 2018, as we have concluded that a valuation allowance is required.

The Tax Cuts and Jobs Act enacted in December 2017 allowed for a measurement period to complete the accounting for certain elements of the tax reform. We recorded a nominal adjustment in the three months ended March 31, 2018 to reduce the benefit of the provisional impact relating to the change in our deferred tax assets as a result of the new federal tax rate of 21%.

Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements that have or are reasonably likely to have a current or future material effect on our financial position, changes in financial position, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

Contractual Obligations

There have been no material changes, outside of the ordinary course of business, to our contractual obligations as previously disclosed in our Annual Report on Form 10-K/A for the year ended December 31, 2018.

Liquidity and Capital Resources

Our consolidated statements of cash flows are summarized as follows (in millions):

	Three months ended		
	March 31, 2019	March 31, 2018	Change
Net loss	$ (30.8)	$ (44.9)	$ 14.1
Adjustments to reconcile net loss to cash flows provided by operating activities	11.6	18.2	(6.6)
Changes in operating assets and liabilities	38.8	30.1	8.7
Net cash provided by operating activities	$ 19.6	$ 3.4	$ 16.2
Net cash provided by (used in) investing activities	$ 1.5	$ (1.6)	$ 3.1
Net cash used in financing activities	$ (20.9)	$ (0.5)	$ (20.4)

Our cash, cash equivalents and short-term investments totaled approximately $46 million at March 31, 2019 and $51 million at December 31, 2018. We had cash held by our non-U.S. subsidiaries aggregating approximately $7 million at March 31, 2019 and $11 million at December 31, 2018. If we elected to repatriate all of the funds held by our non-U.S. subsidiaries as of March 31, 2019, we do not believe that the amounts of potential withholding taxes that would arise from the repatriation would have a material effect on our liquidity.

On December 21, 2017, we entered into a Senior Secured Credit Agreement (as amended, the “Credit Facility”) with Silicon Valley Bank ("SVB"), which refinanced the prior credit agreement with SVB that the Company had assumed in connection with the Merger. On June 24, 2018, we amended the Credit Facility to, among other things, permit the Edgewater Acquisition and related transactions. We were in compliance with all covenants of the Credit Facility at March 31, 2019 and December 31, 2018. At March 31, 2019, we had an outstanding debt balance of $57 million at a weighted average interest rate of 5.48% and approximately $4 million of outstanding letters of credit at an average interest rate of 1.75% under the Credit Facility. At December 31, 2018, we had an outstanding debt balance of $55 million at an average interest rate of 5.96% and approximately $3 million of outstanding letters of credit at an average interest rate of 1.75% under the Credit Facility.

On April 29, 2019, we amended and restated the Credit Facility (the "New Credit Facility"). In addition to the original $100 million of commitments, the New Credit Facility now includes an additional $50 million term loan facility that was advanced in full on April 29, 2019. The New Credit Facility also includes procedures for additional financial institutions to become lenders, or for any existing lender to increase its commitment under either the term loan facility or the revolving loan facility, subject to an aggregate increase of $75 million for all incremental commitments under the New Credit Facility. The New Credit Facility is scheduled to mature in April 2024. In addition to SVB, lenders under the New Credit Facility include Citizens Bank NA, SunTrust Bank and JP Morgan Chase Bank, N.A.

The indebtedness and other obligations under the New Credit Facility are unconditionally guaranteed on a senior secured basis by us and each of our other material U.S. domestic subsidiaries (collectively, the "Guarantors"). The New Credit Facility is secured by first-priority liens on substantially all of our assets.

The New Credit Facility requires periodic interest payments on outstanding borrowings under the facility until maturity. We may prepay all revolving loans under the New Credit Facility at any time without premium or penalty (other than customary LIBOR breakage costs), subject to certain notice requirements.

Revolving loans under the New Credit Facility bear interest at our option at either the Eurodollar (LIBOR) rate plus a margin ranging from 1.50% to 3.00% per year or the base rate (the highest of the Federal Funds rate plus 0.50%, or the prime rate announced from time to time in The Wall Street Journal) plus a margin ranging from 0.50% to 2.00% per year (such margins being referred to as the “Applicable Margin”). The Applicable Margin varies depending on our consolidated leverage ratio (as defined in the New Credit Facility). The base rate and the LIBOR rate are each subject to a zero percent floor.

We are charged a commitment fee ranging from 0.20% to 0.30% per year on the daily amount of the unused portions of the commitments under the New Credit Facility. Additionally, with respect to all letters of credit outstanding under the Credit Facility, we are charged a fronting fee of 0.125% per year and an outstanding letter of credit fee equal to the Applicable Margin for base rate loans times the amount available to be drawn under each letter of credit.

The New Credit Facility requires periodic interest payments on any outstanding borrowings under the facility. The Borrower may prepay all revolving loans under the New Credit Facility at any time without premium or penalty (other than customary LIBOR breakage costs), subject to certain notice requirements.

In addition, the New Credit Facility contains various covenants that, among other restrictions, limit our and our subsidiaries’ ability to enter into certain types of transactions, including, but not limited to: incurring or assuming indebtedness; granting or assuming liens; making acquisitions or engaging in mergers; repurchasing equity and making dividend and certain other restricted payments; making investments; selling or otherwise transferring assets; engaging in transactions with affiliates; entering into sale and leaseback transactions; entering into burdensome agreements; changing the nature of our business; modifying our organizational documents; and amending or making prepayments on certain junior debt.

The New Credit Facility contains events of default that are customary for a secured credit facility. If an event of default relating to bankruptcy or other insolvency events with respect to a borrower occurs, all obligations under the New Credit Facility will immediately become due and payable. If any other event of default exists under the New Credit Facility, the lenders may accelerate the maturity of the obligations outstanding under the New Credit Facility and exercise other rights and remedies, including charging a default rate of interest equal to 2.00% per year above the rate that would otherwise be applicable. In addition, if any event of default exists under the New Credit Facility, the lenders may commence foreclosure or other actions against the collateral.

If any default exists under the New Credit Facility, or if the Borrower is unable to make any of the representations and warranties as stated in the New Credit Facility at the applicable time, the Borrower will be unable to borrow funds or have letters of credit issued under the New Credit Facility, which, depending on the circumstances prevailing at that time, could have a material adverse effect on the Borrower’s liquidity and working capital.

In connection with the Merger, on October 27, 2017, we issued a promissory note for approximately $23 million to certain of GENBAND's equity holders (the "Promissory Note"). The Promissory Note does not amortize and the principal thereon is payable in full on the third anniversary of its execution. Interest on the promissory note is payable quarterly in arrears and accrued at a rate of 7.5% per year for the first six months after issuance, and thereafter at a rate of 10% per year. Interest that is not paid on the interest payment date will increase the principal amount of the Promissory Note. The failure to make any payment under the Promissory Note when due and, with respect to payment of any interest, the continuation of such failure for a period of thirty days thereafter, constitutes an event of default under the Promissory Note. If an event of default occurs under the Promissory Note, the payees may declare the entire balance of the Promissory Note due and payable (including principal and accrued and unpaid interest) within five business days of the payees' notification to the Company of such acceleration. Interest that is not paid on the interest payment date will increase the principal amount of the Promissory Note. At March 31, 2019, the Promissory Note balance was approximately $24.7 million, comprised of $22.5 million of principal plus $2.2 million of interest converted to principal. At December 31, 2018, the Promissory Note balance was $24.1 million, comprised of $22.5 million of principal plus $1.6 million of interest converted to principal.

On April 29, 2019, concurrently with the amendment and restatement of the Credit Facility as discussed above, we repaid in full all outstanding amounts under the Promissory Note. We did not incur any early termination penalties in connection with this repayment.

In the second quarter of 2019, our Board of Directors (the "Board") approved a stock repurchase program pursuant to which the Company may repurchase up to $75 million of the Company's common stock prior to April 18, 2021. Repurchases under the program may be made in the open market, in privately negotiated transactions or otherwise, with the amount and timing of repurchases depending on the market conditions and corporate discretion. This program does not obligate the Company to acquire any particular amount of common stock and the program may be extended, modified, suspended or discontinued at any time at the CBoard's discretion.

On April 22, 2019, we, Metaswitch Networks Corporation and Metaswitch Networks Ltd. (collectively, "Metaswitch") agreed to a binding mediator's proposal (the "Mediation Agreement") that resolves the six previously disclosed lawsuits between us and Metaswitch (the "Lawsuits"). Pursuant to the terms of the Mediation Agreement, Metaswitch has agreed to pay us an aggregate amount of $63.0 million, which includes cash payments of $37.5 million during the second quarter of 2019 and $22.5 million payable in three installments annually, beginning in 2020, and such installment payments by Metaswitch will accrue interest at a rate of 4% per year. We and Metaswitch have also agreed to a cross-license of all of their respective patents. All of the payments pursuant to the Mediation Agreement are expected to have a positive impact on our cash flows.

Our operating activities provided approximately $20 million of cash in the three months ended March 31, 2019 and approximately $3 million of cash in the three months ended March 31, 2018.

Cash provided by operating activities in the three months ended March 31, 2019 was primarily the result of lower accounts receivable and inventory and higher deferred revenue, coupled with our non-cash operating expenses. These amounts were partially offset by our net loss, the reduction in the Edgewater Deferred Consideration, lower accrued expenses and other long-term liabilities, and accounts payable. The decrease in accrued expenses and other long-term liabilities was primarily related to employee compensation and related costs, including payments in connection with our company-wide cash bonus program. Our lower accounts receivable primarily reflected collections on sales made in the prior year and our focused collection efforts, coupled with lower invoicing in the first quarter of 2019 compared to the fourth quarter of 2018. Our net loss, adjusted for non-cash operating activities, used approximately $19 million of cash.

Cash provided by operating activities in the three months ended March 31, 2018 was primarily the result of lower accounts receivable, higher deferred revenue and non-cash operating expenses. These amounts were partially offset by our net loss, the reduction in the Edgewater Deferred Consideration lower accrued expenses and other long-term liabilities, and accounts payable, coupled with higher other operating assets and inventory. Our lower accounts receivable reflected collections on sales made in the prior year, coupled with lower invoicing in the first quarter of 2018 compared to the fourth quarter of 2017. The decrease in accrued expenses and other long-term liabilities was primarily related to employee compensation and related costs, including payments in connection with our company-wide cash bonus program, and our previously recorded restructuring initiatives, coupled with lower accruals for taxes and professional fees. Our net loss, adjusted for non-cash items such as depreciation, amortization and stock-based compensation, used approximately $27 million of cash.

Our investing activities provided approximately $2 million of cash in the three months ended March 31, 2019, comprised of slightly over $5 million of maturities of marketable securities, partially offset by slightly under $4 million of investments in property and equipment.

Our investing activities used approximately $2 million of cash in the three months ended March 31, 2018, primarily for investments in property and equipment.

Our financing activities used approximately $21 million of cash in the three months ended March 31, 2019. We borrowed $37 million and repaid $35 million under the Credit Facility in the three months ended March 31, 2019. We used approximately $22 million to pay deferred purchase consideration in connection with the Edgewater Acquisition and approximately $1 million to pay withholding obligations related to the net share settlement of restricted stock awards upon vesting.

Our financing activities used less than $1 million of cash in the three months ended March 31, 2018. We both borrowed and repaid $10 million under the Credit Facility in the three months ended March 31, 2018. We used less than $1 million in the aggregate to pay withholding obligations related to the net share settlement of restricted stock awards upon vesting and nominal amounts on our finance lease obligations and for debt issuance costs.

Based on our current expectations, we believe our current cash, cash equivalents, marketable debt securities and available borrowings under the New Credit Facility will be sufficient to meet our anticipated cash needs for working capital and capital expenditures for at least twelve months. However, the rate at which we will consume cash will be dependent on the cash needs of our future operations. We anticipate devoting substantial capital resources to continue our research and development efforts, to maintain our sales, support and marketing, to complete merger-related integration activities and for other general corporate activities. However, it is difficult to predict future liquidity requirements with certainty, and our cash, cash equivalents, marketable securities and available borrowings under the New Credit Facility may not be sufficient to meet our future needs, which would require us to refinance our debt and/or obtain additional financing. We may not be able to refinance our debt or obtain additional financing on favorable terms or at all.

Recent Accounting Pronouncements

Effective January 1, 2019, we adopted Accounting Standards Update ("ASU") 2016-02, *Leases (Topic 842) Section A - Leases: Amendments to the FASB Accounting Standards Codification* ("ASU 2016-02"), the FASB's the new standard on accounting for leases, and its subsequent related updates. ASU 2016-02 introduces a lessee model that brings most leases onto the balance sheet and eliminates the current GAAP requirement for an entity to use bright-line tests in determining lease classification. In July 2018, the FASB issued ASU 2018-11, *Leases (Topic 842): Targeted Improvements* ("ASU 2018-11") and ASU 2018-10, *Codification Improvements to Topic 842, Leases*, both of which provided improvements to certain aspects of the guidance in ASU 2016-02. In January 2018, the FASB issued ASU 2018-01, *Leases (Topic 842): Land Easement Practical Expedient for Transition to Topic 842*, which provided additional clarification and implementation guidance.

We elected to use the alternative transition method as described in ASU 2018-11, which allows entities to initially apply ASU 2016-02 at the adoption date with no subsequent adjustments to prior period lease costs for comparability. We elected the package of practical expedients permitted under the transition guidance within ASU 2016-02, which provided that we did not need to reassess whether expired or existing contracts contained a lease, the lease classification of expired or existing leases, and the amount of initial direct costs for existing leases.

In connection with the adoption of ASU 2016-02, we recorded additional lease assets of approximately $44 million and additional lease liabilities of approximately $48 million as of January 1, 2019. The difference between the additional lease assets and lease liabilities, net of the deferred tax impact, was due to the absorption of related balances into the right-of-use asset, such as deferred rent. The adoption of this standard had no impact on our condensed consolidated statements of operations or of cash flows.

In August 2018, the FASB issued ASU 2018-15, *Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract* ("ASU 2018-15"), which provides guidance on implementation costs incurred in a cloud computing arrangement ("CCA") that is a service contract. ASU 2018-15 amends ASC 350, Intangibles - Goodwill and Other ("ASC 350") to include in its scope implementation costs of a CCA that is a service contract and clarifies that a customer should apply the guidance in ASC 350-40 to determine which implementation costs should be capitalized in such a CCA. ASU 2018-15 is effective for us beginning January 1, 2020. We are currently assessing the potential impact of the adoption of ASU 2018-15 on our consolidated financial statements.

The FASB has issued the following accounting pronouncements, all of which became effective for the Company on January 1, 2019 and none of which had a material impact on the Company's consolidated financial statements:

In July 2018, the FASB issued ASU 2018-09, *Codification Improvements* ("ASU 2018-09"), which contains amendments to clarify, correct errors in or make minor improvements to the Codification. ASU 2018-09 makes improvements to multiple topics, including but not limited to comprehensive income, debt, income taxes related to both stock-based compensation and business combinations, fair value measurement and defined contribution benefit plans.

In June 2018, the FASB issued ASU 2018-07, *Compensation - Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting* ("ASU 2018-07"), which expands the scope of Accounting Standards Codification ("ASC") 718, *Compensation - Stock Compensation* ("ASC 718"), to include all share-based payment arrangements related to the acquisition of goods and services from both nonemployees and employees. As a result, most of the guidance in ASC 718 associated with employee share-based payments, including most of its requirements related to classification and measurement, applies to nonemployee share-based payment arrangements.

In February 2018, the FASB issued ASU 2018-02, *Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income* ("ASU 2018-02"), which amends ASC 220, *Income Statement - Reporting Comprehensive Income*, to allow a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Act and requires entities to provide certain disclosures regarding stranded tax effects.

In October 2016, the FASB issued ASU 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory* ("ASU 2016-16"), which removes the prohibition in ASC 740, Income Taxes, against the immediate recognition of the current and deferred income tax effects of intra-entity transfers of assets other than inventory.

In addition, the FASB has issued the following accounting pronouncements, none of which we believe will have a material impact on our consolidated financial statements:

In August 2018, the FASB issued ASU 2018-14, *Compensation - Retirement Benefits - Defined Benefit Plans - General (Subtopic 715-20): Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans* ("ASU 2018-14"), which amends ASC 715 to add, remove and clarify disclosure requirements related to defined benefit pension and other postretirement plans. ASU 2018-14 is effective for us beginning January 1, 2020.

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"), which changes the fair value measurement requirements of ASC 820, *Fair Value Measurement* ("ASC 820"). ASU 2018-13 is effective for us beginning January 1, 2020 for both interim and annual reporting.

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"), which adds an impairment model that is based on expected losses rather than incurred losses. Under ASU 2016-13, an entity recognizes as an allowance its estimate of expected credit losses, which the FASB believes will result in more timely recognition of such losses. ASU 2016-13 is effective for us beginning January 1, 2020 for both interim and annual reporting periods, with early adoption permitted.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to a variety of market risks, including changes in interest rates affecting the return on our investments and foreign currency fluctuations. We do not believe that a hypothetical 10% adverse movement in interest rates and foreign currency exchange rates would have a materially different impact from what was disclosed in our Annual Report on Form 10-K/A, for the year ended December 31, 2018.

Item 4. Controls and Procedures

Disclosure Controls and Procedures

Evaluation of Disclosure Controls and Procedures. Our management, with the participation of our principal executive officer and principal financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) as of the end of the period covered by this Quarterly Report on Form 10-Q. Based on this evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective as of March 31, 2019.

Changes in Internal Control over Financial Reporting. We implemented ASC 842 as of January 1, 2019. As a result, we made the following significant modifications to our internal controls over financial reporting, including changes to accounting policies and procedures, operational processes and documentation practices:

- Updated our policies and procedures related to accounting for lease assets and liabilities and related income and expense.
- Modified our contract review controls to consider the new criteria for determining whether a contract is or contains a lease, specifically to clarify the definition of a lease and align with the concept of control.
- Added controls for reevaluating our significant assumptions and judgments on a periodic basis.
- Added controls to address related required disclosures regarding leases, including our significant assumptions and judgments used in applying ASC 842.

Other than the items described above, there have been no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the fiscal quarter ended March 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II OTHER INFORMATION

Item 1. Legal Proceedings

We are involved in six lawsuits (together, the "Lawsuits") with Metaswitch Networks Ltd., Metaswitch Networks Corp. and Metaswitch Inc. (together, “Metaswitch”). In five of the Lawsuits, we are the plaintiff and, in three of those five lawsuits, we are also a counterclaim defendant. In the sixth case, we are the defendant. On January 21, 2014, GENBAND and its indirectly-owned subsidiary, GENBAND US LLC, filed a complaint in the Eastern District of Texas, Marshall Division, alleging that Metaswitch infringed certain patents owned by GENBAND. Following unsuccessful mediation, a trial took place and on January 15, 2016, the jury awarded $8.2 million in past royalty damages to GENBAND, which neither GENBAND nor we have recorded. On September 29, 2016, the district court confirmed the jury verdict following motions from both parties. On March 22, 2018, the district court entered final judgment awarding GENBAND $8.9 million in royalties for damages through January 15, 2016 at rates set by the district court, excluding pre- and post-judgment interest and costs. On April 10, 2018, the clerk of the district court set the awarded costs at $0.4 million. On April 19, 2018, Metaswitch filed a notice of appeal (the "Appeal") on the judgment with United States Court of Appeals for the Federal Circuit (the "Appeals Court"), and filed its appeal brief on July 6, 2018. Oral argument on the appeal occurred on March 8, 2019 and the parties are awaiting the Appeals Court's ruling on the Appeal.

On April 18, 2018, through Sonus, the Company we filed a complaint in the Eastern District of Texas, Marshall Division, alleging that Metaswitch is continuing to infringe the patents from the first lawsuit above through sales of Metaswitch's allegedly "redesigned" products. This suit seeks a finding that Metaswitch's infringement is willful. This suit also alleges false advertising and seeks monetary damages resulting from allegedly false and misleading statements Metaswitch made regarding the first lawsuit. On March 25, 2019, the district court stayed the case pending the Appeals Court's ruling on the Appeal.

Through Sonus and GENBAND US LLC, we are involved as plaintiff and counterclaim defendant in a lawsuit with Metaswitch regarding claims that Metaswitch misappropriated trade secrets of GENBAND, and we are seeking monetary damages. This case is pending in state court in Dallas County, Texas, and stems from claims originally brought in a patent lawsuit between GENBAND and Metaswitch. The state court action was filed on March 28, 2017. Metaswitch filed its answer on April 21, 2017, in which it asserted counterclaims against GENBAND. On July 11, 2018, Metaswitch filed its fifth amended answer and counterclaims against GENBAND. The Texas state court has set a special setting for a trial for this case on April 22, 2019.

Through Sonus, we are also involved as plaintiff and counterclaim defendant in two patent infringement lawsuits with Metaswitch asserting the infringement of a total of ten patents that came into the Company from Sonus, and we are seeking monetary damages. Sonus filed these two lawsuits in the Eastern District of Texas, Marshall Division, on March 8, 2018. Metaswitch filed its answers on May 15, 2018, in which it asserted counterclaims against Sonus, including alleged infringement by us and Sonus of a total of ten patents. The district court has set trials for these cases to occur on February 18, 2020 and June 15, 2020.

On November 19, 2018, Metaswitch filed a complaint against us and several of our subsidiaries in the Southern District of New York, alleging various antitrust violations based, in large part, on allegations that GENBAND should not have brought its successful patent infringement lawsuit against Metaswitch. Metaswitch is seeking monetary damages. On March 7, 2019, the district court granted our motion to reassign the case to the Eastern District of Texas, Marshall Division. On March 25, 2019, the district court for the Eastern District of Texas, Marshall Division, stayed the case pending the Appeals Court's ruling on the Appeal.

On April 22, 2019, we and Metaswitch agreed to a binding mediator's proposal (the "Mediation Agreement") that resolves the six Lawsuits between us and Metaswitch (the "Lawsuits"). We and Metaswitch will be memorializing the Mediation Agreement in final settlement documents. Pursuant to the terms of the Mediation Agreement, Metaswitch has agreed to pay us an aggregate amount of $63.0 million, which includes cash payments of $37.5 million during the second quarter of 2019 and $25.5 million payable in three installments annually, beginning in 2020, and such installment payments by Metaswitch will accrue interest at a rate of 4% per year. We and Metaswitch expect to cross-license certain patents that we and Metaswitch own. We and Metaswitch have agreed to stay the Lawsuits pending the completion of the final settlement documents.

On November 8, 2018, Ron Miller, a purported stockholder of ours, filed a Class Action Complaint (the "Miller Complaint") in the United States District Court for the District of Massachusetts (the "Massachusetts District Court") against us and three of our former officers, Raymond P. Dolan, Mark T. Greenquist and Michael Swade (collectively, the "Defendants"), claiming to represent a class of purchasers of Sonus common stock during the period from January 8, 2015 through March 24, 2015 and alleging violations of the federal securities laws. Similar to a previous complaint entitled Sousa et al. vs. Sonus Networks, Inc. et al., which was dismissed with prejudice by an order dated June 6, 2017, the Miller Complaint claims that the Defendants made misleading forward-looking statements concerning Sonus' expected fiscal first quarter of 2015 financial performance, which statements were also the subject of the order, whose findings we neither admitted nor denied. The Miller plaintiffs are seeking monetary damages.

After the Miller Complaint was filed, several parties filed and briefed motions seeking to be selected by the Massachusetts District Court to serve as a Lead Plaintiff in the action. Briefing on the issue was completed on January 30, 2019 and the Massachusetts District Court is expected to issue a decision shortly. We have not yet filed an answer, and the Massachusetts District Court has not yet set a schedule.

In addition, we are often a party to disputes and legal proceedings that we consider routine and incidental to our business. Management does not expect the results of any of these actions to have a material effect on our business or consolidated financial statements.

Item 1A. Risk Factors

Our business faces significant risks and uncertainties, which may have a material adverse effect on our business prospects, financial condition and results of operations, and you should carefully consider them. There have been no material changes in the three months ended March 31, 2019 to the risk factors described in Part I, Item 1A. of our Annual Report on Form 10-K/A for the year ended December 31, 2018.

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

(c) Issuer Purchases of Equity Securities

The following table provides information with respect to the shares of common stock repurchased by us for the periods indicated:

Period	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet be Purchased Under the Plans or Programs
January 1, 2019 to January 31, 2019	—	$ —	—	$ —
February 1, 2019 to February 28, 2019	49,484	$ 5.67	—	$ —
March 1, 2019 to March 31, 2019	131,944	$ 5.18	—	$ —
Total	181,428	$ 5.31	—	$ —

(1) Upon vesting of restricted stock awards, our employees are permitted to return to us a portion of the newly vested shares to satisfy the tax withholding obligations that arise in connection with such vesting. During the first quarter of 2019, 181,428 shares of restricted stock were returned to us by employees to satisfy tax withholding obligations arising in connection with vesting of restricted stock, which shares are included in this column.

Item 5. Other Information

None.

Item 6. Exhibits (Updates in Progress)

Exhibit No.	Description
3.1	Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K12B, filed October 30, 2017 with the SEC).
3.2	Certificate of Amendment of the Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed November 28, 2017 with the SEC).
3.3	Amended and Restated By-Laws of the Registrant (incorporated by reference to Exhibit 3.3 to the Registrant's Annual Report on Form 10-K, filed March 8, 2018 with the SEC).
10.1 *	Employment Agreement by and between the Registrant and Anthony Scarfo, dated January 18, 2018.
10.2 *	Employment Agreement by and between GENBAND and Steven Bruny, dated February 7, 2015.
10.3 *	Severance Agreement by and between GENBAND Management Services Corp., GENBAND Holdings Company, GENBAND US LLC, GENBAND Inc., Cayman Holdings, GENBAND LLC and Steven Bruny, dated March 2, 2016.
10.4	Senior Secured Credit Facilities Amended and Restated Credit Agreement by and among the Registrant, as a guarantor, Ribbon Communications Operating Company, Inc., as the borrower, Silicon Valley Bank, as administrative agent, issuing lender, swingline lender and joint lead arranger, Citizens Bank, N.A., as lender and joint lead arranger, SunTrust Bank, as lender and documentation agent, and the other lenders party thereto, dated April 29, 2019 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K, filed May 2, 2019 with the SEC).
31.1 *	Certificate of Ribbon Communications Inc. Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2 *	Certificate of Ribbon Communications Inc. Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1 #	Certificate of Ribbon Communications Inc. Chief Executive Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2 #	Certificate of Ribbon Communications Inc. Chief Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase

---

* Filed herewith.

\# Furnished herewith.

SIGNATURES

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

Date: May 2, 2019	RIBBON COMMUNICATIONS INC.
	By: /s/ Daryl E. Raiford
	Daryl E. Raiford Executive Vice President and Chief Financial Officer (Principal Financial Officer)

Exhibit 10.1

January 18, 2018

By email

Anthony Scarfo

Dear Tony:

On behalf of Ribbon Communications Inc. ("Ribbon Communications"), I am pleased to offer you in this letter (this "Agreement") employment with Sonus Networks, Inc. (a wholly-owned subsidiary of Ribbon Communications, the "Company") as Executive Vice President, Product and R&D, reporting to the Company's Chief Executive Officer.

1. Compensation.

(a) *Base Salary*. Your initial base salary ("Base Salary") will be at the annualized rate of $350,000, less applicable state and federal withholdings, paid bi-weekly in accordance with the Company's normal payroll practices.

(b) *Annual Cost of Living Adjustment*. You will receive an annual lump sum payment of $25,000, less applicable state and federal withholdings, as a cost of living adjustment, paid on the first payroll period of each year or as otherwise mutually agreed.

(c*) Sign On Bonus*. You will receive an initial cash sign on bonus of $25,000, less applicable state and federal withholdings, paid at the first payroll date following the Commencement Date.

(d) *Target Bonus*. You will be eligible to receive target variable compensation of $350,000 annually based on corporate and individual objectives ("Target Bonus"). Specific objectives to achieve your Target Bonus will be agreed upon after the Commencement Date, and then periodically thereafter. Your annual Target Bonus, if any, shall be paid as soon as practicable following the Company's public disclosure of its financial results for the applicable bonus period.

(e) *Restricted Shares*. Subject to Board of Director approval at the next meeting, you will be granted 75,000 restricted shares of the Company's common stock under the Company's Amended and Restated Stock Incentive Plan, which you will receive under separate cover. The grant date will be the earliest 15th day of a month following Board of Director approval, or the first business day thereafter if that day is not a business day. These restricted shares will vest over a three year period as follows: 33% on the one year anniversary of the date of grant with the remaining shares vesting in equal installments semi-annually over the subsequent twenty-four (24) months. You will be required to enter into a restricted stock agreement on the Company's standard form once you have received your grant. The Company will not release any vested shares until it has received your electronically signed restricted stock agreement.

You may elect under Section 83(b) of the Internal Revenue Code of 1986, as amended, to be taxed at the time the Restricted Shares are acquired on the Restricted Stock Grant Date ("Section 83(b) Election"). A Section 83(b) Election, if made, must be filed with the Internal Revenue Service within thirty (30) days of the Restricted Stock Grant Date. You are obligated to pay to the Company the amount of any federal, state, local or other taxes of any kind required by law to be withheld with respect to the granting (if a Section 83(b) Election is made) or vesting (if a Section 83(b) Election is not made) of the shares. If you do not make a Section 83(b) Election, you shall satisfy such tax withholding obligations by delivery to the Company, on each date on which shares vest, such number of shares that vest on such date as have a fair market value (calculated using the last reported sale price of the common stock of the Company on the NASDAQ Global Select Market on the trading date immediately prior to such vesting date) equal to the amount of the Company's withholding obligation; provided, however, that the total tax withholding cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income). Such delivery of shares to the Company shall be deemed to happen automatically, without any action required on your part, and the Company is hereby authorized to take such actions as are necessary to effect such delivery of shares to the Company.

2. Benefits. During your employment with the Company, you will be entitled to the below described benefits. The Company will recognize your prior service with Sonus Networks, Inc. ("Sonus") for all purposes including vacation accrual and 401(k) vesting.

(a) You will be entitled to vacation consistent with Company policy and limitations. Based on your Sonus continued service date, you are presently eligible for 20 days of PTO per year under the current PTO policy;

(b) You will be entitled to participate as an employee of the Company in all benefit plans and fringe benefits and perquisites generally provided to employees of the Company in accordance with Company policy, currently including group health, life and dental insurance, 401(k) program and equity incentive plans. The Company retains the right to change, add or cease any particular benefit for its employees; and

(c) The Company will reimburse you for all reasonable travel, business development, meals, entertainment and other expenses incurred by you in connection with the performance of your duties and obligations on behalf of the Company. You will comply with such limitations and reporting requirements with respect to expenses as may be established by the Company from time to time and will promptly provide all appropriate and requested documentation in connection with such expenses.

(d) If you are required by the Company to relocate your home or principal residence as a term and condition of your continued employment, you will be eligible for certain benefits (including, for example, relocation assistance and eligible expenses reimbursement) under the Company's then-applicable relocation policy.

3. Employment Relationship. It is expected that your employment will start on January 22, 2018 ("Commencement Date"). This offer is contingent upon your satisfactory completion of our pre-employment reference check and background check investigation. No provision of this Agreement shall be construed to create an express or implied employment contract for a specific period of time. Employment at the Company is considered "at will" and either you or the Company may terminate the employment relationship at any time and for any reason. As a full-time employee of the Company, you will be expected to devote your full business time and energies to the business and affairs of the Company. As the Company's organization evolves, its reporting structure may change and you may be assigned such other management duties and responsibilities as the Company may determine, in addition to performing duties and responsibilities reflected above. For the sake of clarity, should the Company deem it necessary to make changes to your role in the future, it will endeavor to ensure that such changes are commensurate with the role and level you hold at the relevant time.

4. Termination and Eligibility for Severance. The termination and severance benefits described on *Attachment 1* hereto are incorporated into this Section 4 by reference.

5. Tax Implications of Termination Payments. Subject to this Section 5, any payments or benefits required to be provided under Section 4 shall be provided only after the date of your "separation from service" with the Company as defined under Section 409A of the U.S. Internal Revenue Code of 1986, as amended, and the guidance issued thereunder ("Section 409A"). The following rules shall apply with respect to distribution of the payments and benefits, if any, to be provided to you under Section 4:

(a) It is intended that each installment of the payments and benefits provided under Section 4 shall be treated as a separate "payment" for purposes of Section 409A. Neither the Company nor you shall have the right to accelerate or defer the delivery of any such payments or benefits except to the extent specifically permitted or required by Section 409A.

(b) If, as of the date of your "separation from service" with the Company, you are not a "specified employee" (each within the meaning of Section 409A), then each installment of the payments and benefits shall be made on the dates and terms set forth in Section 4; and

(c) If, as of the date of your "separation from service" with the Company, you are a "specified employee" (each, for purposes of this Agreement, within the meaning of Section 409A), then:

(i) Each installment of the payments and benefits due under Section 4 that, in accordance with the dates and terms set forth herein, will in all circumstances, regardless of when the separation from service occurs, be paid within the short-term deferral period (as defined for the purposes of Section 409A) shall be treated as a short-term deferral within the meaning of Treasury Regulation Section 1.409A-1(b)(4) to the maximum extent permissible under Section 409A; and

(ii) Each installment of the payments and benefits due under Section 4 that is not paid within the short-term deferral period or otherwise cannot be treated as a short-term deferral within the meaning of Treasury Regulation Section 1.409A-1(b)(4) and that would, absent this subsection, be paid within the six-month period following your "separation from service" with the Company shall not be paid until the date that is six months and one day after such separation from service (or, if earlier, upon your death), with any such installments that are required to be delayed being accumulated during the six-month period and paid in a lump sum on the date that is six months and one day following your separation from service and any subsequent installments, if any, being paid in accordance with the dates and terms set forth herein; provided, however, that the preceding provisions of this sentence shall not apply to any installment of payments if and to the maximum extent that that such installment is deemed to be paid under a separation pay plan that does not provide for a deferral of compensation by reason of the application of Treasury Regulation 1.409A-1(b)(9)(iii) (relating to separation pay upon an involuntary separation from service). Any installments that qualify for the exception under Treasury Regulation Section 1.409A-1(b)(9)(iii) must be paid no later than the last day of the second taxable year following the taxable year in which your separation from service occurs.

(d) Section 409A of the Code. This Agreement is intended to comply with the provisions of Section 409A and this Agreement shall, to the extent practicable, be construed in accordance therewith. Terms used in this Agreement shall have the meanings given such terms under Section 409A if and to the extent required in order to comply with Section 409A. Notwithstanding the foregoing, to the extent that this Agreement or any payment or benefit hereunder shall be deemed not to comply with Section 409A, then neither the Company, the Board of Directors nor its or their designees or agents shall be liable to you or any other person for any actions, decisions or determinations made in good faith.

6. Previous Employment. By accepting employment with the Company, you represent the following: (i) any notice period you are required to give or to serve with a previous employer has expired and that by entering into or performing any of your duties for the Company, you will not be in breach of any other obligation binding on you; (ii) you will not use or disclose any confidential information in breach of any agreement you may have with a previous employer or any other person; and (iii) you are not bound by the terms of any non-competition, non-solicitation, confidentiality or non-disclosure agreement with a previous employer or other party.

7. Employment Eligibility. In compliance with the Immigration Reform and Control Act of 1986, the Company is required to verify your identity and employment eligibility. Please bring the necessary documents with you on your first day of employment.

8. Confidentiality. The Company considers the protection of its confidential information and proprietary materials to be very important. Therefore, as a condition of your employment, you and the Company will become parties to the Confidentiality, Non-Competition and

Assignment of Inventions Agreement, as set forth on *Attachment 2* hereto. This attached agreement must be signed and returned to the Company on your first day of employment.

9. Indemnity. As an executive of the Company, the Company will provide you with an Indemnity Agreement on the Company's standard form.

10. General.

(a) This Agreement will constitute our entire agreement as to your employment by the Company and will supersede any prior agreements or understandings, whether in writing or oral.

(b) This Agreement may be executed in more than one counterpart, each of which shall be deemed to be an original, and all such counterparts together shall constitute one and the same instrument.

(c) The provisions of this Agreement are severable and if any one or more provisions may be determined to be illegal or otherwise unenforceable, in whole or in part, the remaining provisions of this Agreement shall nevertheless be binding and enforceable. Notwithstanding the foregoing, if there are any conflicts between the terms of this Agreement and the terms of any equity plan document referred to in this Agreement, then the terms of this Agreement shall govern and control. Except as modified hereby, this Agreement shall remain unmodified and in full force and effect.

(d) This Agreement is personal in nature and neither of the parties hereto shall, without the written consent of the other, assign or otherwise transfer this Agreement or its obligations, duties and rights under this Agreement; provided, however, that in the event of the merger, consolidation, transfer or sale of all or substantially all of the assets of the Company, this Agreement shall, subject to the provisions hereof, be binding upon and inure to the benefit of such successor and such successor shall discharge and perform all of the promises, covenants, duties and obligations of the Company hereunder.

(e) All notices shall be in writing and shall be delivered personally (including by courier), sent by facsimile transmission (with appropriate documented receipt thereof), by overnight receipted courier service (such as UPS or Federal Express) or sent by certified, registered or express mail, postage prepaid, to the Company at the following address: General Counsel, Ribbon Communications Inc., 4 Technology Park Drive, Westford, MA 01886, and to you at the most current address we have in your employment file. Any such notice shall be deemed given when so delivered personally, or if sent by facsimile transmission, when transmitted, or, if by certified, registered or express mail, postage prepaid mailed, forty-eight (48) hours after the date of deposit in the mail. Any party may, by notice given in accordance with this paragraph to the other party, designate another address or person for receipt of notices hereunder.

(f) *Arbitration*.

i. Any controversy, dispute or claim arising out of or relating to this Agreement or the breach hereof which cannot be settled by mutual agreement will be finally settled by binding arbitration in the Commonwealth of Massachusetts, under the jurisdiction of the American Arbitration Association or other mutually agreeable alternative arbitration dispute resolution service, before a single arbitrator appointed in accordance with the arbitration rules of the American Arbitration Association or other selected service, modified only as herein expressly provided. The arbitrator may enter a default decision against any party who fails to participate in the arbitration proceedings.

ii. The decision of the arbitrator on the points in dispute will be final, non-appealable and binding, and judgment on the award may be entered in any court having jurisdiction thereof.

iii. The fees and expenses of the arbitrator will be shared equally by the parties, and each party will bear the fees and expenses of its own attorney.

iv. The parties agree that this Section 10(f) has been included to resolve any disputes between them with respect to this Agreement, and that this Section 10(f) will be grounds for dismissal of any court action commenced by either party with respect to this Agreement, other than post-arbitration actions seeking to enforce an arbitration award or actions seeking an injunction or temporary restraining order. In the event that any court determines that this arbitration procedure is not binding, or otherwise allows any litigation regarding a dispute, claim, or controversy covered by this Agreement to proceed, the parties hereto hereby waive, to the maximum extent allowed by law, any and all right to a trial by jury in or with respect to such litigation.

v. The parties will keep confidential, and will not disclose to any person, except as may be required by law or the rules and regulations of the Securities and Exchange Commission or other government agencies, the existence of any controversy hereunder, the referral of any such controversy to arbitration or the status or resolution thereof.

(g) This Agreement shall be governed by and interpreted in accordance with the laws of the Commonwealth of Massachusetts, without regard to the conflict of laws provisions thereof.

(h) Sonus Networks, Inc. is an equal opportunity employer.

11. Acceptance. You may accept the terms and conditions described herein by confirming your acceptance in writing. Please send your countersignature to this Agreement to the Company, or via e-mail to me, which execution will evidence your agreement with the terms and conditions set forth herein.

Sincerely,

/s/ Fritz Hobbs
Fritz Hobbs, Chief Executive Officer

Accepted by:

/s/ Anthony Scarfo
Anthony Scarfo
Date: 1/19/18

Attachment 1

Termination and Severance Benefits

1. Definitions. As used in this *Attachment 1* to the Agreement, the following terms shall have the following meanings:

   (a) An *"Acquisition"* shall mean any of the following:
      i. (A) any "person," as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") (other than the Company or its affiliates), is or becomes the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company (not including in the securities beneficially owned by such person any securities acquired directly from the Company or you) representing fifty percent (50%) or more of the combined voting power of the Company's then outstanding securities;
      ii. (B) in the event that the individuals who as of the date hereof constitute the Board, and any new director whose election by the Board or nomination for election by the Company's stockholders was approved by a vote of at least a majority of the Board then still in office who either were members of the Board as of the date hereof or whose election or nomination for election was previously so approved, cease for any reason to constitute at least a majority thereof;
      iii. (C) the consummation of a merger or consolidation of the Company with or the sale of the Company to any other entity and, in connection with such merger, consolidation or sale, individuals who constitute the Board immediately prior to the time any agreement to effect such merger or consolidation is entered into fail for any reason to constitute at least a majority of the board of directors of the surviving/purchasing or acquiring entity following the consummation of such merger, consolidation or sale;
      iv. (D) the stockholders of the Company approve a plan of complete liquidation of the Company; or
      v. (E) the consummation of the sale or disposition by the Company of all or substantially all of the Company's assets to an entity not controlled by the Company. An Acquisition shall constitute a change in control within the meaning of Section 409A.

   (b) *"Good Reason"* shall mean any of the following:
      i. (A) a material reduction in your Base Salary; or (B) the termination, elimination or denial of your rights to material employee benefits or any material reduction in the scope or value thereof (in the case of any such reduction, with scope and value considered in the aggregate);
      ii. The imposition of any requirement that you relocate your home or principal residence to any location (A) outside of the United States, or (B) in the United States which is more than thirty (30) miles away from any metropolitan area in which the Company conducts, or has taken significant steps to conduct, operations as of the date of imposition of such requirement; or
      iii. Without limiting the generality or effect of the foregoing, any material breach of this Agreement by the Company.

   (c) "*Cause*" shall mean the occurrence of any of the following:
      i. (A) your indictment for, formal admission to (including a plea of guilty or *nolo contendere* to), or conviction of a felony, a crime of moral turpitude, dishonesty, breach of trust or unethical business conduct, or any crime involving the Company;
      ii. (B) gross negligence or willful misconduct by you in the performance of your duties that is likely to have an adverse affect on the Company or its reputation;
      iii. (C) your commission of an act of fraud or dishonesty in the performance of your duties;
      iv. (D) repeated failure by you to perform your duties which are reasonably and in good faith requested in writing by the Chief Executive Officer of the Company or the Board of Directors of the Company; or
      v. (E) material breach of this Agreement by you, which you do not cure within ten (10) days following receipt by you of such written notice notifying you of such breach, or material breach by you of any confidentiality agreement with the Company.

2. Termination and Eligibility for Severance.

   (a) Upon any termination of your employment (the "Date of Termination"), you will be paid (i) any and all earned and unpaid portion of your Base Salary through the Date of Termination; (ii) any accrued but unused vacation pay owed to you in accordance with Company practices up to and including the Date of Termination; and (iii) any allowable and unreimbursed business expenses incurred through the Date of Termination that are supported by appropriate documentation in accordance with the Company's policies. Hereafter, items (i) through (iii) in this Section 2(a) are referred to as "Accrued Benefits." If the Company terminates your employment for Cause (as defined below) or you terminate your employment without Good Reason (as defined below), you will be entitled to receive only the Accrued Benefits.

(b) Solely during the period beginning on the Commencement Date and ending on the one-year anniversary of the Commencement Date (the “Initial Severance Period”), if the Company terminates your employment without Cause or if you terminate your employment with Good Reason and, in either case, subject to the additional conditions of this Agreement, the Company will provide you the following severance and related post-termination benefits:

i. The Company will continue to pay your then-current Base Salary, less applicable state and federal withholdings, in accordance with the Company's usual payroll practices, for a period of twelve (12) months following the Date of Termination; unless the termination occurs in contemplation of, upon or within six (6) months after an Acquisition, in which case the Company will pay you your then-current Base Salary, less applicable state and federal withholdings, in accordance with the Company's usual payroll practices, for a period of eighteen (18) months;

ii. The Company may pay you a pro-rated portion of your Target Bonus, less applicable state and federal withholdings, calculated upon reference to your termination date, if the board approves a bonus for the year in which your employment terminates, subject to the terms and conditions of the applicable bonus plan;

iii. The Company will continue to pay the Company's share of medical, dental and vision insurance premiums for you and your dependents for the twelve (12) month period following the termination of your employment; provided, that if immediately prior to the termination of your employment you were required to contribute towards the cost of premiums as a condition of receiving such insurance, you may be required to continue contributing towards the cost of such premiums under the same terms and conditions as applied to you and your dependents immediately prior to the termination of your employment in order to receive such continued insurance coverage; unless the termination occurs in contemplation of, upon or within six (6) months after an Acquisition, in which case the Company with continue to pay such premiums for you and your dependents for an eighteen (18) month period following the termination of your employment;

iv. Any options that are unvested as of the Date of Termination and that would vest during the twelve (12) months following your termination will accelerate and immediately vest and become exercisable upon termination, in accordance with the terms of the applicable stock option agreement; provided that if your termination occurs in contemplation of, upon or within six (6) months after an Acquisition, then all unvested options at that time will fully accelerate and immediately vest on the Date of Termination; and all options vesting pursuant to this Section 2(b)(iii) will remain outstanding and exercisable for the shorter of three (3) years from the Date of Termination or the original remaining life of the options;

v. Any restricted shares that are unvested as of the Date of Termination and that *would* vest during the twelve (12) months following your termination will accelerate and immediately vest upon termination and such shares will be freely marketable; provided that if your termination occurs in contemplation of, upon or within six (6) months after an Acquisition, then all unvested restricted shares at that time will fully accelerate, immediately vest upon termination and be freely marketable; and

vi. If the Company terminates your employment for any reason other than Cause, and such termination occurs during the performance period, any unvested performance shares that were granted to you will vest as follows: (i) 25% of such shares will vest immediately on the Date of Termination; and (ii) the remainder of such shares will vest as restricted shares pursuant to the vesting schedule set forth in Section 2(b)(iv) above.

(c) Following the Initial Severance Period, if the Company terminates your employment without Cause or if you terminate your employment with Good Reason and, in either case, subject to the additional conditions of this Agreement, the Company will provide you the following severance and related post-termination benefits:

i. The Company will pay you your then-current Base Salary, less applicable state and federal withholdings, in accordance with the Company's usual payroll practices, for a period of twelve (12) months;

ii. The Company may pay you a pro-rated portion of your then applicable Target Bonus, less applicable state and federal withholdings, calculated upon reference to your termination date, if the board approves a bonus for the year in which your employment terminates, subject to the terms and conditions of the applicable bonus plan; and

iii. The Company will continue to pay the Company's share of medical, dental and vision insurance premiums for you and your dependents for the twelve (12) month period following the termination of your employment; provided, that if immediately prior to the termination of your employment you were required to contribute towards the cost of premiums as a condition of receiving such insurance, you may be required to continue contributing towards the cost of such premiums under the same terms and conditions as applied to you and your dependents immediately prior to the termination of your employment in order to receive such continued insurance coverage.

(d) The Company's provision of the benefits described in Sections 2(b) and (c) above will be contingent upon your execution of a release of all claims of any kind or nature in favor of the Company in a form to be provided by the Company (the "Release Agreement"). You will have twenty-one (21) days following your receipt of the Release Agreement to consider whether or not to accept it. If the Release Agreement is signed and delivered by you to the Company, you will have seven (7) days from the date of delivery to revoke your acceptance of such agreement. The payments described in Sections 2(b) and (c) above shall be made on the Company's regular payroll schedule, commencing on the eighth (8th) day following the delivery of the executed Release Agreement to the Company, provided that you have not revoked the Release Agreement; any lump sum payments described in Sections 2(b) or (c) above shall made simultaneously with the first payment made pursuant to Section 2(a). The Company shall have no further obligation to you in the event your employment with the Company terminates at any time, other than those obligations specifically set forth in this Section 2.

(e) The Company may terminate your employment at any time with or without Cause by written notice to you specifying the Date of Termination. You may terminate your employment with or without Good Reason by providing written notice to the Company at least thirty (30) days prior to the Date of Termination, specifying the basis for your claim of Good Reason. If you seek to terminate your employment for Good Reason, the Company will have ten (10) days following its receipt of written notice of termination to cure the circumstance giving rise to Good Reason.

Exhibit 10.2

GENBAND

Fkjdslafklfkd;slaf;ladsfkjl;dasfj;ladsjf;ldsak

2801 Network Boulevard, Suite 300
Frisco, Texas 75034

Highly Confidential

February 7, 2015

Steven Bruny

Via email

Dear Steven,

Pursuant to recent discussions between you and David Walsh, President, Chief Executive Officer and Chairman, I am pleased to offer you the G1 level position of EVP, Global Services, based on the terms and conditions described below. If you accept this offer, it is anticipated that you will commence the EVP, Global Services role on or about February 9, 2015 ("Effective Date").

Compensation

If you accept this offer, your annual base salary will be USD $280,000.00, less applicable withholdings, as of the Effective Date. In addition to the above-described annual salary, you will be eligible for incentive compensation with a target of 50% of your annual base salary, less applicable withholdings, subject to the terms and conditions of the Company's discretionary Short Term Incentive Plan ("STIP"). Eligibility for incentive compensation under the STIP is not a contractual entitlement, and GENBAND reserves its rights to amend, revise, and/or withdraw the STIP in the future. This annual target variable compensation will be pro-rated in 2015 based on the Effective Date.

Equity

If you accept this offer, GENBAND will recommend to the Compensation Committee of the Board of Directors ("Board") that you be granted .15% of additional equity in GENBAND Holdings Company per the terms of the GENBAND Holdings Company Management Equity Plan (the "Plan") when shares become available for grant under the Plan. GENBAND's agreement to make this recommendation to the Board is not and should not be construed to be a guarantee that the Board will award you any additional equity when shares become available for grant under the Plan. As you may be aware, awards of available equity in GENBAND Holdings Company may only be made upon

GENBAND

Fkjdslafklfkd;slaf;ladsfkjl;dasfj;ladsjf;ldsak

2801 Network Boulevard, Suite 300
Frisco, Texas 75034

formal approval of the Board, execution of any requested subscription agreements or offering documents and collection of any required payment.

The terms and conditions of your employment with GENBAND not addressed in this letter remain of full force and effect including, without limitation, your obligations under GENBAND Confidentiality, Non-Disclosure and Non-Solicitation Agreement dated May 20, 2012.

If you wish to accept this offer of employment based on the above terms, please sign this letter in the space below and return it to Petrena Ferguson (via email PDF is fine) by close of business on February 27, 2015.

I believe this is a great opportunity for you to continue your excellent contribution to GENBAND and remain as part of our exciting future. If you have any questions, please do not hesitate to contact me.

Sincerely,

Robin Wright
EVP, Corporate Operations & HR

I, **Steven Bruny**, have read, understood and accept the above described offer of employment.

/s/ Steven Bruny___________ 2/26/15________________________
Signature Date

Exhibit 10.3

SEVERANCE AGREEMENT

This SEVERANCE AGREEMENT (this ***"Agreement")*** is made and entered into as of March 2, 2016, by and between GENBAND Management Services Corp., a Delaware corporation (the ***"Company"),*** GENBAND Holdings Company, a Cayman Islands exempted company limited by shares ***("Cayman Holdings"),*** GENBAND US LLC, a Delaware limited liability company ***("GENBAND LLC"),*** GENBAND Inc., a Delaware corporation ***("Holdco***", and together with the Company, Cayman Holdings and GENBAND LLC, the "GENBAND Parties"), and Steven Bruny (the "Executive").

WITNESSETH:

WHEREAS, the Executive is an employee of the Company;

WHEREAS, the Executive is expected to make major contributions to the profitability, growth and financial strength of the Company:

WHEREAS, the Company desires to assure itself of present and future continuity of management and desires to establish certain minimum severance benefits for certain of its senior executives, including the Executive; and

WHEREAS, the Company desires to provide additional inducement for the Executive to remain in the ongoing employ of the Company;

NOW, THEREFORE, in consideration of the premises and mutual covenants herein and for other good and valuable consideration, the parties agree as follows:

1. Certain Defined Terms. In addition to terms defined elsewhere herein, the following capitalized terms have the following meanings when used in this Agreement:

(a) "***Base Pay***" means the Executive's annual fixed or base compensation, as determined from time to time by Cayman Holdings, whether acting through its Board of Directors (the "**Cayman Board**") or a committee thereof, regardless of whether all or any portion thereof may be deferred under any deferred compensation plan or program of the GENBAND Entities.

(b) ***"Change in Control"*** shall mean the consummation of any transaction or series of related transactions, pursuant to which any Person or group (within the meaning of the Securities Exchange Act of 1934, as amended), other than OEP or another GENBAND Entity, acquires (i) directly or indirectly more than 50% of the equity securities of any GENBAND Principal Entity, entitled to vote (whether such transaction is effected by merger, consolidation, recapitalization, sale or transfer of the applicable GENBAND) Principal Entity's equity or otherwise), or (ii) directly or indirectly all or substantially all of the assets of any GENBAND Principal Entity and its subsidiaries, in each case the occurrence of which shall be determined by the board of directors, the board of managers or the managing member, as applicable, of such GENBAND Principal Entity; provided, that for the purposes of clause (i), voting securities of Cayman Holdings shall be deemed to refer to the fully diluted beneficial ownership of the outstanding voting securities of Cayman Holding taking into account the equity ownership of Cayman Holdings and Holdco. By way of example, for the purposes of clause (i) of the immediately preceding sentence if Holdco holds 25% of the outstanding voting securities of Cayman Holdings, and if Person X holds 20% of the outstanding voting securities of Holdco on a fully diluted basis, then Person X sha11 be deemed to hold 5% of the outstanding Cayman Holdings voting securities.

(c) ***"*Code*"*** means the Internal Revenue Code of 1986, as amended.

(d) "***Disability"*** means (i) the Executive's inability to regularly perform the essential functions of the Executive's position, with or without accommodation, due to physical or mental incapacity or illness, for a period of ninety (90) days in the aggregate in any consecutive twelve (12) month period unless otherwise prohibited by federal, state, or local law or ordinance, (ii) for a reason specified in clause (i), the Executive is receiving income replacement benefits for a period of not less than three (3) months under a GENBAND Entity accident or health plan, (iii) a determination by the Social Security Administration that the Executive is totally disabled or (iv) a determination that the Executive is eligible for disability benefits under a long-term disability plan of a GENBAND Entity that provides coverage to the Executive; but only if such plan bases disability eligibility on criteria that comply with clauses (i), (ii) or (iii) above.

(e) "***For Cause***" means, termination of the employment of the Executive by the Company if the Executive is guilty of (i) bribery in violation or the GENBANO Code of Business Conduct and Ethics and/or local law and regulation including, without limitation, the UK Bribery Act, (ii) engaging in acts in the course of his employment with any GENBAND Party that constitute theft, fraud or embezzlement, (iii) intentional or negligent misconduct which materially and adversely affects any GENBAND Entity and which is not cured within thirty (30) days following receipt of written notice of such misconduct, (iv) unauthorized disclosure of proprietary information of a material and confidential nature relating to any GENBAND Entity, which unauthorized disclosure bas a material adverse effect on any GENBAND Entity, (v) material violation of any GENBAND Party policy, agreement or procedure which is not cured within thirty (30) days following receipt of written notice of same, (vi) excessive absenteeism, (vii) material neglect of duty, (viii) failure to perform the duties of the Executive's position to the satisfaction of the Cayman Board, which is not cured within thirty (30) days following receipt or written notice of same, (ix) insubordination or failure to perform and carry out any directive of the Cayman Board, (x) alcohol or substance abuse, (xi) being convicted of a felony or pleading no contest" to a felony charge, or (xii) failing to cooperate with the GENBAND Entities and/or their professional advisors in any investigation (whether internal or external) or any formal legal or investigative proceeding. The determination of whether a termination of the Executive is For Cause shall be made by the Cayman Board or a committee thereof and written notice specifying the reason(s) therefore shall be delivered to the Executive as promptly as practicable following such determination.

(f) ***"GENBAND Entity"*** means the Company, Holdco, Cayman Holdings, and, as the context may require, their direct and indirect wholly-owned subsidiaries.

(g) "***GENBAND Principal Entity***" means any of Holdco, Cayman Holdings or GENBAND LLC.

(h) ***"OEP"*** means (i) One Equity Partners lll, L.P., OEP lll Co-lnvestors L.P and OEP II Partners Co-Invest L.P. and OEP GB Holdings (together, the *'"OEP Holders"),* and (ii) any corporation, partnership, limited liability company or other entity that is an affiliate of any OEP Holder (including without limitation any applicable co-invest vehicle).

(i) ***"Person***" means an individual, a corporation, a company, a voluntary association, a partnership, a joint venture, a limited liability company, a trust, an estate, an unincorporated organization, a governmental authority or other entity.

j) ***"Section 409A***" means Section 409A of the Code, as amended, and the Department of Treasury Regulations and other interpretive guidance issued thereunder.

(k) ***"Separation from Service Date***" means the date of termination of the Executive's employment (within the meaning of the Department of Treasury Regulation l.409A-l(h)(l)(ii)).

(l) "***Specified Employee***" means a key employee of a GENBAND Entity, within the meaning of the Department of Treasury Regulations 1.409A·l(i), on the individual's Separation from Service Date. The determination of whether the Executive is a Specified Employee shall be made by the Cayman Board (or its designee) in accordance with the terms of Section 409A and applicable guidance thereunder (including, without limitation, the Department of Treasury Regulation 1.409A-l (i) and any successor provision thereto).

(m) "***Term***" means the period commencing as March 2, 2016 and expiring as of the close of business on March 2, 2020; provided, however, that commencing with March 2, 2020 and on each March 2 thereafter ("Extension Date"), the Term shall be automatically extended for an additional one-year period, unless the Company or the Executive provides the other party hereto 90 days' prior written notice before the next Extension Date that the Term shall not be so extended.

(n) "***Termination Date***" means the date of the termination of the Executive's Employment.

2. **Termination of Employment**

(a) The Executive's employment may be terminated by the Company at any time and for any reason. If, during the Term and within six (6) months following the occurrence of a Change in Control, the Executive's employment is terminated by the Company, other than (i) For Cause or (ii) as a result of the Executive's death or Disability, the Executive will be entitled to the compensation and benefits provided under Section 3 hereof.

(b) The Executive may terminate his employment with the Company at any time and for any reason. Upon the occurrence of one or more of the following events (hereinafter, a "Good Reason") during the Term (regardless of whether any other reason for such termination exists or has occurred, including without limitation, other employment) and within six (6) months following the occurrence of a Change in Control, the Executive may terminate his employment with the Company and receive the compensation and benefits provided under Section 3 hereof:

(i) (A) a material reduction in the Executive's Base-Pay, except in cases where any such reduction is applicable to substantially all executive officers of the Company in substantially the same manner and to substantially the same degree; or (B) the termination, elimination or denial of the Executive's rights to material employee benefits or any material reduction in the scope or value thereof (in the case of any such reduction, with scope and value considered in the aggregate), except in cases where any such termination, elimination, denial or reduction is applicable to substantially all executive officers of the Company in substantially the same manner and to substantially the same degree;

(ii) The imposition of any requirement that the Executive relocate his home or principal resident to any location (A) outside of the United States, or (B) in the United States which is more than thirty (30) miles away from any metropolitan area in which the Company conducts, or has taken significant steps to conduct, operations as of the date of imposition of such requirement; or

(iii) Without limiting the generality or effect of the foregoing, any material breach of this Agreement by the Company or any other GENBAND Party or any successors thereto.

(c) A termination of the Executive's employment for Good Reason shall not be deemed to occur unless the Executive (i) provides written notice to the Company, or any successor, of the existence of the occurrence of an event or condition described in Section 2(b) not later than sixty (60) days after the initial existence of the event or condition, which notice shall provide the Company, or any successor, a period of at least thirty (30) days to remedy the event or condition before a Good Reason basis for termination shall exist hereunder and (ii) terminates his employment for Good Reason based on the event or condition described in Section 2(b) prior to the second anniversary following the initial existence of such event or condition.

(d) A termination of the Executive's employment by the Company pursuant to Section 2(a) or by the Executive for Good Reason pursuant to Section 2(b) will not affect any rights the Executive may have pursuant to any agreement, policy, plan, program or arrangement of any GENBAND Entity providing employee benefits, which rights: shall be governed by the terms thereof.

3. **Compensation and Benefits**

(a) If, during the Term and within six (6) months following the occurrence of a Change in Control, the Company terminates the Executive's employment (other than for Cause or le; a result of the Executive's death or Disability) pursuant to Section 2(a). or the Executive terminates his employment for Good Reason pursuant to Section 2(b):

(i) the Company shall (subject to Section 3(b) below):

(A) pay or cause to be paid to the Executive a lump-sum payment. within ten (10) calendar days of the Termination Date, in an amount equal to the sum of (x) any unpaid Base Pay through the Termination Date and (y) payment in respect of any accrued but unused paid time off or sick pay, and (z) payment in respect of any reasonable business expenses incurred (and properly submitted for reimbursement) but not reimbursed prior to the Termination Date; and

(B) during the period beginning on the Termination Date and ending on the six (6) month anniversary of the Termination Date pay to the Executive, in accordance with the Company's normal payroll practices in effect on the Termination Date, an amount (the "Severance Payment") equal to:

(x) 50% of the Executive's Base Pay in effect on the Termination Date (or in effect immediately prior to any reduction contemplated by Section 2(h)(i)(A) hereof, whichever is higher). For the sake of clarity, Executive will continue to receive an amount equal to his monthly salary in effect on the Termination Date (or in effect immediately prior to any reduction contemplated by Section 2(b)(i)(A) hereof, whichever is higher) for six (6) months following his separation from the Company;

(y) under all circumstances, any other compensation or benefits which may be owed or provided to or in respect of the Executive in accordance with the terms and provisions of any plans or programs of the GENBAND Entities,

provided, however, that any installment that would otherwise have been paid prior to the first normal payroll payment date occurring on or after the sixtieth (60th) day following the Termination Date (such payroll date, the ***"First Payment Date")*** shall instead be paid on the First Payment Date, and provided, *further,* that if the Executive is a Specified Employee, except to the extent that any amounts payable to the Executive as a Severance Payment are not treated as deferred compensation under Section 409A, such as, for example, certain payments pursuant to a separation pay plan, the Severance Payment shall not be provided to the Executive until the earlier of (I) the expiration of the six (6)-month period measured from the Separation from Service Date and (II) the date of the Executive's death. All payment delayed pursuant to this paragraph shall be paid, with interest thereon calculated at the "prime rate," as quoted from time to time during the relevant period in the Southwest Edition of <u>the Wall Street Journal</u>, on the first day of the seventh month following the Executive's Separation from Service Date (or the date of the Executive's death, if earlier), and all remaining payments due pursuant to this Agreement shall be paid as otherwise provided herein; and

(ii) for six (6) months following the Termination Date, the Executive shall be entitled to reimbursement for, or payment by or on behalf of the GENBAND Entities or any successor entities of, the premium cost for such group health plan coverage for which the Executive is entitled under the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("***COBRA***") (and which the Executive properly and timely elects to receive with respect to the Executive or any Qualified Beneficiary (as defined in COBRA) whose continued coverage under such GENBAND Entity group health plan is continued and whose coverage derives from being the spouse or a dependent of the Executive) for so long as the Executive or, as appropriate, such Qualified Beneficiary, remains eligible for continuation coverage as contemplated pursuant to COBRA and the relevant group health plan of the GENBAND Entities, but in no event longer than six (6) months. If and to the extent that any health or welfare benefit described in this Section 3(a)(ii) cannot be paid or provided under any applicable law or regulation, or under the terms of any policy, plan, program or arrangement of the GENBAND Entities, then the GENBAND Parties will take all action necessary to ensure that such benefit is provided through other means to the Executive and his Qualified Beneficiaries, as applicable, including the reimbursement to the Executive of the costs incurred by the Executive's to purchase such benefits personally. The GENBAND Parties shall at the same time as any such action (including payment of any reimbursement) make any payment that may be necessary to ensure that the Executive's after-tax position with respect to any health and welfare benefits received pursuant to this Section 3(a)(ii) is not worse than the Executive's after-tax position in the event such benefits had been provided to the Executive while he was employed by the Company. Any such reimbursement or in-kind benefits provided under this Agreement shall be made or provided by the GENBAND Parties on or before the last day of the Executive's taxable year following the taxable year in which the expenses are incurred, and shall also satisfy all other requirements of the regulations under Section 409A with respect to any such reimbursements. The amount of any such expenses reimbursed or in-kind benefit provided in one year shall not affect the expenses or in-kind benefits eligible for reimbursement or payment in any subsequent year, and the Executive's right to such reimbursement or payment of any such expenses will not be subject to liquidation or exchange for any other benefit.

(b) The GENBAND Parties obligations pursuant to this Section 3 (other than under Section 3(a)(i)(A)) shall be conditioned upon (i) the Executive's termination of employment constituting a "separation from service'" within the meaning of Department of Treasury Regulation 1.409A-l(h) and (ii) the Executives execution and delivery of a release, in substantially the form attached hereto as Exhibit A, on or prior to the 60th day following the Termination Date, which has not been revoked by the Executive prior to, and cannot be revoked by the Executive after, such 60th day. Further, for purposes of Section 409A, the Executive's right to receive installment payments pursuant to this Section 3 shall be treated as a right to receive a series of separate and distinct payments.

4. **Confidentiality.**

(a) Confidential Information. The Executive acknowledges and agrees that during his employment with the Company, he will have access to and acquire Confidential Information regarding the business of the GENBAND Entities that is not generally available to the public. In order to assist the Executive with his duties, the GENBAND Parties promise to provide the Executive with Confidential Information regarding the business of the GENBAND Entities that is not generally available to the public and that, if disclosed, could put the Company at an unfair competitive disadvantage. For purpose of this Agreement, ***"Confidential Information***" means any information or material (i) generated, collected, or used by any GENBAND Entity that relates to its actual or anticipated business or research and development, or (ii) suggested by or resulting from work assigned to and for performed by Executive for or on behalf of any GENBAND Entity, including without limitation information and materials relating to their financial performance, financial statements and reports, financial projections, accounting methods and information, business plans, strategic plans, plans regarding their future growth, development and projects, marketing plans, sales methods and strategies, products, pricing strategies, price lists, customer contacts, customer lists, customer information (including, without limitation, customer methods of operation, requirement, preferences and history of dealings with the GENBAND Entities), vendor lists, vendor information (including, without limitation, their history of dealings with the GENBAND Entities), employee files, employee compensation, skills, performance and qualifications of personnel of the GENBAND Entities, trade secrets, inventions (whether patented or unpatented), copyrights, service marks, know-how, algorithms, computer programs, computer code and related documentation, processes, methods, formulas, research, development, licenses, permits, and compilations of any of the foregoing information relating to the actual or anticipated business of the GENBAND Entities. The Executive agrees and acknowledges that substantial time, labor, skill and money have been and will be invested in developing the Confidential Information and that the protection and maintenance of this Confidential Information constitute legitimate interests to be protected by the GENBAND Entities and by the covenants set forth in this Section 4 and in Section 5.

(b) Non-Disclosure. As a material inducement to the (GENBAND Parties to enter into this Agreement, and to pay to the Executive the compensation set forth herein, the Executive agrees that, both during the Executive's employment with the Company and at any time thereafter, the Executive shall preserve in strictest confidence, and shall not disclose, copy or take away, either directly or indirectly, or use for the Executive's own benefit or the benefit of any third party, any Confidential Information of the GENBAND Entities, or any confidential or proprietary information or material received by the GENBAND Entities. Except as required in the ordinary course of the Executive's employment for the benefit of the GENBAND Entities. All documents, records, files, computer programs, electronic data, and tangible items and materials containing or embodying any Confidential Information, including all copies thereof, whether prepared by the Executive or by others, are the property of the applicable GENBAND Entity and shall immediately be returned to such GENBAND Entity upon termination of the Executive's employment with the Company (voluntary or otherwise), or at any time upon a GENBAND Entity's request, and no copies thereof shall be kept by the Executive.

(c) Non-Disclosure of Confidential Information of Third Parties. The Executive shall not use or disclose to other employees of any GENBAND Entity, during or following his employment with the Company, information belonging to any third parties which the Executive knows, or should reasonably be expected to know, is confidential unless written permission been given by such third parties to the applicable GENBAND Entity to allow the GENBAND Entity to use and/or disclose such information; provided that, notwithstanding the foregoing, the Executive shall be entitled to us: or disclose such confidential information to other employees of any GENBAND Entity as required by law or applicable attorney rules of professional conduct.

5. Non-Competitive and Non-Solicitation. The Executive agrees as follows:

(a) Non-Competition. For purposes of this Section 6, a "***Competitive Business***" shall mean any business engaged in the supply of IP gateways. switching product, session border controllers or FMC security solutions or similar products, and any other business that is substantially similar to any business that any GENBAND Entity is engaged in on, or has taken active steps to engage in by, the Termination Date. The Executive acknowledges that the services the Executive is to render are of a special and unusual character with a unique value to the GENBAND Parties, the loss of which cannot adequately be compensated by damages in action at law. In view of the unique value to the GENBAND Parties of the services of the Executive, in consideration of the GENBAND Parties' agreement to provide the Executive with Confidential Information and other consideration specified herein, and as a material inducement for the GENBAND Parties to enter into this Agreement, the Executive agrees that, during the term of the Executive's employment with any GENBAND Party, and for a period of six (6) months after the termination of the Executive's employment with all GENBAND Parties, for whatever reason, the Executive shall not, within North America, Europe or the area commonly called the "Asia-Pacific" and "Latin America" regions, directly or indirectly:

(i) provide personal services, as an officer, director, executive, manager, employee, consultant, advisor, independent contractor or otherwise, to a Competitive Business;

(ii) develop, acquire or maintain an ownership interest in a Competitive Business; provided, however, that ownership interest of less than five percent (5%) of the outstanding capital stock of a publicly traded Competitive Business shall not be a violation of this Section 5(a)(ii); or

(iii) offer, develop, or provide any products or services that would constitute a Competitive Business.

(b) Non-Solicitation. For purposes of this Section 5, the term "Customer" shall mean any Person, firm, corporation, partnership, association or other entity to which any GENBAND Entity provided, or took active steps to attempt to provide products or services during the twelve (12) months prior to the Termination Date with respect to which the Executive possess information that is proprietary or confidential to any GENBAND Entity. During the term of the Executive's employment with any GENBAND Party and for a period of six (6) months following the termination, for whatever reason, of the Executive's employment with all GENBAND Parties, the Executive shall not, on behalf of any Competitive Business, directly or indirectly:

(i) take any action to, or do anything reasonably intended to, divert business from any GENBAND Entity or any of their subsidiaries, solicit any Customer or prospective Customer of any GENBAND Entity, or influence or attempt to influence any existing or prospective Customers of any GENBAN'D Entity to cease doing business with a GENBAND Entity, or

(ii) hire, employ, solicit for employment, or attempt to hire, employ, or solicit for employment any employee of any GENBAND Entity or any of its subsidiaries.

(c) Judicial Amendment. The GENBAND Parties and the Executive acknowledge the reasonableness of the agreement set forth in subsections (a) and (b) of this Section 5, including the reasonableness of the geographic area, duration of time and scope of Activity restrained that are specified in this Section 5. The Executive further acknowledges that his skills are such that he can be gainfully employed in noncompetitive employment and that the agreement not to compete will in no way prevent him from earning a living. Notwithstanding the foregoing, if it is judicially determined that any of the limitations contained in subsections (a) or (b) of this Section 5 are unreasonable, illegal or offensive under applicable law(s) (statute, common law or otherwise) and may not be enforced as herein agreed, the Executive and the GENBAND Parties agree that the unreasonable, illegal, or offensive portions of subsections (a) and (b) of this Section 5 shall be and hereby are redrafted to conform with those applicable laws, while leaving the remaining portions of subsections (a) and (b) of this Section 5 intact. By agreeing to this contractual modification prospectively at this time, the Executive and the GENBAND Parties intend to make the agreements contained in subsections (a) and (b) of this Section 5, including but not limited to the covenant not to compete contained in subsection (a), legal under the law(s) of all applicable jurisdictions so that the entire agreement not to compete and/or this entire Section 5 as prospectively modified shall remain in full force and effect and shall not be rendered void or illegal. Such modifications shall not affect any payments made to the Executive under this Agreement.

(d) Notice to Prospective or Subsequent Employers. The Executive shall notify any Person or entity employing the Executive after the Termination Date, or evidencing an intention of employing the Executive after the Termination Date, of the existence and provisions of subsections (a) and (b) of this Section 5 of this Agreement. In addition, the Executive agrees that the GENBAND Parties may notify any Person or entity employing the Executive or evidencing an intention of employing the Executive of the existence and provisions of this Agreement.

6. Representations of the Executive. The Executive represents that his execution of this Agreement, and performance of the Executives obligations hereunder, will not conflict with, or result in a violation of or breach of, any other agreement to which the Executive is a party or any judgment, order or decree to which the Executive is subject. The Executive certifies that he has no outstanding agreement or obligation that is in conflict with any of the provisions of this Agreement, or that would preclude the Executive from complying with the provisions hereof, and further certifies that he will not enter into any such conflicting agreement while employed by any GENBAND Party.

7. Remedies. The Executive acknowledges that his abilities and the services he will provide to the GENBAND Parties are unique and that his failure to perform his obligations under Sections 4 and 5 of this Agreement would cause the GENBAND Parties irreparable harm and injury. The Executive further acknowledges that damages at law will not be an adequate remedy for breach of the covenants contained in Sections 4 and 5, and that the only adequate remedy is one that would prevent him from breaching the terms of Sections 4 and 5. As a result, the Executive and the GENBAND Parties agree that the GENBAND Parties' remedies may include specific performance, a temporary restraining order, preliminary and permanent injunctive relief or other equitable relief against any threatened or actual breach of Sections 4 or 5 by the Executive (without any requirement to post a bond or other security). The termination of the Executive for any reason shall not be deemed a waiver by the GENBAND Parties of any breach by the Executive of this Agreement or any other obligation owed to the GENBAND Parties, and notwithstanding such a termination, the Executive shall be liable for all damages attributable to such a breach. Nothing contained in this Section 7 shall prohibit the GENBAND Parties from seeking and obtaining any other remedy, including monetary damages, to which it may be entitled.

8. Non-Disparagement. The Executive agrees not to, directly or indirectly, either orally or in writing, disparage the GENBAND Parties or any of their affiliates or any of their respective equity holders, affiliates, directors, managers, officers, employees, agents or representatives, or any of their respective financial conditions or operations, or any of their respective products, services or practices.

9. No Mitigation Obligation. The GENBAND Parties hereby acknowledge that it will be difficult and may be impossible for the Executive to find reasonably comparable employment within a reasonable time period following the Termination Date; provided, however, any such difficulty or impossibility shall not prevent the Executive from earning a living. In addition, the GENBAND Parties acknowledge that the GENBAND Entities' severance pay plans and policies applicable in general to their respective salaried employees typically do not provide for mitigation, offset or reduction of any severance payments received thereunder. Accordingly, the payment of the severance compensation by or on behalf of the GENBAND Parties' to the Executive in accordance with the terms of this agreement is hereby acknowledged by the GENBAND Parties to be reasonable, and the Executive will not be required to mitigate the amount of any payment provided for in this Agreement by seeking other employment or otherwise nor will any profits, income, earnings or other benefits from any source whatsoever create any mitigation. offset, reduction or any other obligation on the part of the Executive hereunder or otherwise.

10. Employment Rights. Nothing expressed or implied in this Agreement will create any right or duty on the part of the GENBAND Parties or the Executive to have the Executive remain in the employment of any GENBAND Entity at any time, including, without limitation, prior to or following any Change in Control.

11. Withholding of Taxes. The Company shall be entitled to withhold from any amounts payable under this Agreement all federal, state, city or other taxes that the Company is required to withhold pursuant to any law or government regulation or ruling.

12. Successors and Binding Agreement.

(a) The GENBAND Parties will require any successor (whether direct or indirect, by purchase, merger, consolidation, reorganization or otherwise) to all or substantially all of the business or assets of the respective GENBAND Parties, expressly to assume and agree to perform this Agreement in the same manner and to the same extent the GENBAND Parties would be required to perform if no such succession had taken place. This Agreement will be binding upon and inure to the benefit of the GENBAND Parties and any successor to the respective GENBAND Parties, including without limitation any Persons acquiring directly or indirectly all or substantially all of the business or assets of a GENBAND Party whether by purchase, merger, consolidation, reorganization or otherwise (and such successor shall thereafter be deemed a "GENBAND Party" for the purposes of this Agreement), but will not otherwise be as assignable, transferable or delegable by a GENBAND Party other than to a subsidiary or affiliate of such GENBAND Party.

(b) This Agreement will inure to the benefit of and be enforceable by the Executive and the Executive's personal or legal representative, executors, administrators, successors, heirs, distributees and legatees.

(c) This Agreement is personal in nature and none of the parties hereto shall, without the consent of the other, assign, transfer or delegate this Agreement or any rights or obligation s hereunder except as expressly provided in Sections 12(a) and 12(b). Without limiting the generality or effect of the foregoing, the Executive's right to receive payments hereunder will not be assignable, transferable or delegable, whether by pledge, creation of a security interest, or otherwise, other than by a transfer by the Executive's will or by the laws of descent and distribution and, in the event of any attempted assignment or transfer contrary to this Section 12(c), the GENBAND Entities shall have no liability to pay any amount so attempted to be assigned, transferred or delegated.

13. Notices. For all purposes of this Agreement (except as otherwise expressly provided in this Agreement with respect to notice periods), all communications, including without limitation notices, consents, requests or approvals, required or permitted to be given hereunder will be in writing and will be deemed to have been duly given when hand delivered or ten (10) business days after having been mailed by United States registered or certified mail. return receipt requested, postage prepaid, or five (5) business days after having been sent by a nationally recognized overnight courier- service such as Federal Express or UPS, addressed to the Company (for the GENBAND Parties) at 2801 Network Blvd., Suite 300, Frisco, Texas 75034 (to the attention of the President of the Company) and to the Executive at the Company's address, with a copy to the Executive at his principal residence, or to such other address as any party may have furnished to the other in writing and in accordance her with except that notices of changes of address shall be effective only upon receipt.

14. Governing Law. The validity, interpretation, construction and performance of this Agreement will be governed by and construed in accordance with the substantive laws of the State of Texas, without giving effect to the principles of cont1ict of laws of such State or any other jurisdiction.

15. Validity. If any provision of this Agreement or the application or any provision hereof to any Person or circumstances is held invalid, unenforceable or otherwise illegal, the remainder of this Agreement and the application of such provision to any other Person or circumstances will not be affected, and the provision so held to be invalid, unenforceable or otherwise illegal will be reformed to the extent (and only to the extent) necessary to make it enforceable, valid or legal.

16. Miscellaneous. No provision of this Agreement may be modified, waived or discharged unless such waiver, modification or discharge is agreed to in writing signed by the Executive and the GENBAND Parties. No waiver by either party hereto at any time of any breach by the other party hereto or compliance with any condition or provision of this Agreement to be performed by such other party will be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time. No agreements or representations, oral or otherwise, expressed or implied with respect to the subject matter hereof have been made by either party which are not set forth expressly in this Agreement. References to Sections are to references to Sections of this Agreement. For the avoidance of doubt, the parties acknowledge and agree that the Company shall be the legal employer of the Executive and this Agreement shall be interpreted accordingly.

17. Arbitration. Any dispute, controversy or claim arising out of or in connection with or relating to this Agreement or any breach or alleged breach thereof shall be submitted to and settled by binding arbitration in Dallas, Texas, in accordance with the Commercial Arbitration Rules of the American Arbitration Association (or at any other place or under any other form of arbitration mutually acceptable to the parties so involved). Any dispute, controversy or claim submitted for resolution shall be submitted to one neutral arbitrator agreed to by the parties, who shall have the authority to render a decision in terms of findings of fact and conclusions of law. No arbitration shall be commenced after the date when institution of legal or equitable proceedings based upon such subject matter would be barred by the applicable statute of limitations. Any party may bring an action in any court of competent jurisdiction to compel arbitration under this Agreement, to enforce an arbitration award, and to vacate an arbitration award. However, in actions seeking to vacate an award, the standard of review to be applied to the arbitrator's finding of fact and conclusions of law will be the same as that applied by the appellate court reviewing a decision of a trial court sitting without a jury. The parties agree that in any arbitration commenced pursuant to this Agreement, the parties shall be entitled to such discovery (including depositions, requests for the production of documents and interrogatories) as is allowed by the arbitrator after the arbitrator hears arguments for and against limits which shall be imposed on discovery by each party in arbitration. The arbitrator shall have full power and authority to limit discovery. In the event that either party fails to comply with its discovery obligations hereunder, the arbitrator shall have full power and authority to compel disclosure or impose sanctions to the full extent of Rule 37, Federal Rules of Civil Procedure. Unless the parties agree otherwise, the parties. the arbitrator, and the American Arbitration Association shall treat the arbitration proceedings, any related discovery, and the decision of the arbitrator, as confidential, except in connection with judicial proceedings ancillary to the arbitration, such as a judicial challenge to, or enforcement of an award, and unless otherwise required by law to protect a legal right of a party. To the extent possible, any specific issues of confidentiality should be raised with and resolved by the neutral arbitrator. The arbitrator shall, in its award, allocate between the parties the costs of arbitration, which shall include reasonable attorneys' fees of the parties, in such proportions as the arbitrator deems just. The GENBAND Parties shall pay the arbitrator's fees and expenses.

18. Section 409A. The GENBAND Parties and the Executive acknowledge and agree that, to the extent applicable, this Agreement shall be interpreted in accordance with Section 409A, including without limitation any such regulations or other guidance that may be issued after the date hereof. For the avoidance of doubt, the Executive shall not be entitled to any severance benefits that are otherwise subject to Section 409A hereunder unless he has incurred a termination of his employment under Department of Treasury Regulation l.409A-l(h)(l)(ii). Notwithstanding any provision of this Agreement to the contrary, in the event that the GENBAND Parties determine that any amounts payable or provided hereunder will be immediately taxable to the Executive under Section 409A, the GENBAND Parties reserve the right to (without any obligation to do so or to indemnify the Executive for a failure to do so) (a) adopt amendments to this Agreement and/or appropriate policies and procedures, including amendments, policies and/or procedures with retroactive effect, that the GENBAND Parties determine to be necessary or appropriate to preserve the intended tax treatment of the benefits provided by this Agreement, to preserve the economic benefits of this Agreement and to avoid less favorable accounting or tax consequences for the GENBAND Parties and/or (b) take such other actions it determines to be necessary or appropriate to exempt the amounts payable hereunder from Section 409A or to comply with the requirements of Section 409A and thereby avoid the application of penalty taxes thereunder. Notwithstanding the foregoing, no provision of the Agreement shall be interpreted or construed to transfer any liability for failure to comply with the requirements of Section 409A from the Executive or any other individual to the GENBAND Parties or any of its affiliates, employees or agents.

19. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together will constitute one and the same agreement.

20. Survival. Notwithstanding any other provision of this Agreement to the contrary, the parties' respective rights and obligations under Sections 4 through 21, will survive the expiration of this Agreement, any expiration of the Term and the termination of the Executive's employment for any reason whatsoever.

21. Entire Agreement. This Agreement and any agreements referenced herein set forth the entire agreement of the parties concerning the subject matter hereof and supersede all prior agreements, arrangements and understandings with respect to such subject matter.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed and delivered as of the date first above written.

GENBAND MANAGEMENT SERVICES CORP.

By: /s/ David Walsh
President and CEO

GENBAND US LLC

By: /s/ David Walsh
President and CEO

GENBAND HOLDINGS COMPANY

By: /s/ David Walsh
President and CEO

GENBAND, INC.

By: /s/ David Walsh
President and CEO

/s/ Steven Bruny
Executive

EXHIBIT A

Release

This RELEASE, executed as of , 20 (this "Release"), is made by the undersigned (the "Executive") in favor of GENBAND Management Services Corp., a Delaware corporation (the "Company"), GENBAND Inc., a Delaware corporation ("Holdco"), GENBAND US LLC, a Delaware limited liability company ("GENBAND LLC'), GENBAND Holdings Company, a Cayman Islands exempted company limited by shares ("Cayman Holdings" and together with Holdco, GENBANND LLC and the Company, the '"GENBAND Parties"), and the other "Releasees" (as hereinafter defined). For purposes of this Release, "GENBAND Entities" shall mean the GENBAND Parties and their direct and indirect wholly owned subsidiaries.

WHEREAS, the Executive and the GENBAND Parties have entered into that certain Severance Agreement, dated as of May ___, 2015, (the "Agreement"), pursuant to which, among other things, the Executive is entitled to certain severance, compensation and benefits, subject to the Executive's execution and delivery of this Release;

NOW, THEREFORE, in consideration of the terms and provisions contained herein and in the Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Executive hereby agrees as follows:

1. Release.

(a) The Executive agrees for himself, the Executive's spouse and child or children (if any), and the Executive's heirs, beneficiaries, devisees, executors, administrators, attorneys, personal representatives, successors and assigns, to hereby knowingly and voluntarily release and forever discharge the GENBAND Parties and their subsidiaries and affiliates (within the meaning of Rule 12b-2 promulgated pursuant to the Securities Exchange Act of 1934. as amended) together with all of their respective future, current and former officers, directors, principals, owners, equity holders, members, general or limited partners, trustees, consultants, agents, attorneys, representatives, employees and representatives of such persons, and each of their predecessors, successors and assigns, and employee benefit plans in which the Executive is or has been a participant by virtue of his employment with the GENBAND Parties (collectively, the "Releases"), from any and all debt, demands, actions, causes of actions. accounts, covenants, contracts, Agreements, claims, damages, omissions, promises, judgments, rights, equitable relief, penalties, fees, costs, charges, complaints, obligations, promises, controversies, suits, expenses, compensation, responsibility and any and all claims, liabilities and obligations whatsoever, of every name, nature, kind, character and description, known or unknown, asserted or unasserted, direct or indirect, absolute or contingent, suspected or unsuspected, both in law and equity, which the Executive has ever had, now has, or may hereafter claim to have against the Releases by reason of any matter, cause or thing whatsoever arising out of the Executive's employment with the Company or the other GENBAND Parties (or any subsidiaries thereof), or the termination of the Executive's employment with the Company or the other GENBAND Parties (or any subsidiaries thereof) or the Executive's status at any time as a holder of any securities of the GENBAND Parties (individually, a "Claim" and collectively, Claims"). This Release shall apply to any Claim of any type, including, without limitation, any and all Claims or any type that the Executive may have arising under the common law Title VII of the Civil Rights Act of 1964, the Civil Rights Act of 1991, the Americans With Disabilities Act, the Family and Medical Leave Act, the Employee Retirement Income Security Act, the Equal Pay Act of 1963, the Age Discrimination in Employment Act of 1967, the Older Workers Benefit Protection Act, the Sarbanes-Oxley Act of 2002, the Texas Commission on Human Rights Act, or the Texas Pay Day Law, each as amended, and any other Federal, state or local statues, regulations, ordinances or common law, or under any policy, agreement, contract, understanding or promise, written or oral, formal or informal, between any of the Releases and the Executive, provided, however, that this Release shall not apply to or affect or impair (i) Claims for vested benefits pursuant to any GENBAND Entity employee benefit plan and equity plan in which the Executive was a participant before the Termination Date; (ii) any Claims for unemployment insurance benefits or workers' compensation benefits applicable to the period through the Termination Date; (iii) any Claims that may arise for indemnification of the Executive under any directors and officers or similar insurance, any indemnification agreement between the Executive and a GENBAND Entity or under the GENBAND Entities' Bylaws, Certificate of Incorporation, Memorandum and Articles of Associate, Limited Liability Company Agreement and/or other applicable governing documents; or (iv) any and all Claims to payments. rights and benefits arising under the Agreement (collectively with the Claims specified in clauses (i), (ii) and (iii), the "Excluded Claims").

(b) For the purpose of implementing a full and complete release, the Executive understands and agrees that this Release is intended to include all Claims (other than Excluded Claims), if any, which the Executive may have, including Claims (other than Excluded Claims) that the Executive docs not know or suspect to exist in the Executive's favor against the GENBAND Parties or any other Releasees and that this Release extinguishes those Claims.

(c) The Executive represents and warrants that he has not filed any complaints or charges with any court or administrative agency against the Company or any of the Releasees which have not been dismissed, closed, withdrawn or otherwise terminated on or before the date of this Release. The Executive further represents and agrees that he has not assigned nor transferred or attempted to assign or transfer, nor will the Executive attempt to assign or transfer, to any person or entity not a party to this Release, any of the Claims the Executive is releasing in this Release. Furthermore, by signing this Release, the Executive (i) represents and agrees that he will not be entitled to any personal recovery in any action or proceeding that may be commenced on the Executive's behalf arising out of the matters released herein and (ii) covenants and agrees to refrain from directly or indirectly asserting any Claim, or commencing, instituting or causing to be commenced, any proceeding of any kind against any of the Releasees, based upon any Claim released or purported to be released hereby.

(d) The Executive (i) acknowledges that he fully comprehends and understands all the terms of this Release and their legal effects and (ii) expressly represents and warrants that (A) he is competent to effect the release made herein knowingly and voluntarily and without reliance on any statement or representation of the GENBAND Entities or their directors, members, officers, employees, accountants, advisor, attorneys, consultants or other agents and (B) he had the opportunity to consult with an attorney regarding this Release.

2. Entire Agreement. This Release constitutes the entire agreement and understanding between the Executive and the GENBAND Parties with respect to the subject matter hereof and supersedes all prior and contemporaneous agreements and understandings, whether written or oral, between the Executive and the GENBAND Parties relating to the subject matter hereof (which shall not be deemed to include the Agreement), and there are no representations, understandings or agreements relating to the subject matter hereof that are not fully expressed in this Release.

3. Amendments. This Release may not be modified, amended, supplemented or canceled, except by written instrument executed by the Person(s) against whose interest any of the foregoing shall operate.

4. Governing Law. This Release shall be governed by and construed in accordance with the laws of the State of Texas for contracts made and to be fully performed in such state, without giving effect to any choice of law rules that may require the application of the laws of another jurisdiction.

5. Defined Terms: Third Party Beneficiaries. Capitalized terms used and not otherwise defined in this Release shall have the respective meanings ascribed to such terms in the Agreement. Each Releasee is expressly intended to be a third party beneficiary of this Release and each may enforce the tem1s and provisions of this Release.

6. Executive Acknowledgements and Representations. The Executive hereby acknowledges and represents that:

(a) The Executive bas been advised in writing to seek the advice of an attorney of his choice prior to signing this Release, has had an adequate opportunity to seek legal counsel of his own choosing and has done so or made a knowing decision not to do so. The GENBAND Parties and the Executive agree that the parties have relied upon the advice of their respective attorneys, who are attorneys of their own choice, or they have knowingly and willingly not sought the advice of such attorneys. The Executive hereby understands and acknowledges the significance and consequence of this Release and represents that the terms of this Release are fully understood and voluntarily accepted by the Executive.

(b) The Executive has read this Release and understands all of the terms of this Release, and enters into this Release freely and voluntarily.

(c) This Release is intended to include in its effect and does include, without limitation, all claims which the Executive does not know or suspect to exist in his favor at the time of execution of this Release, and that the terms agreed upon contemplate and extinguish any and all such claims.

(d) The Executive has been given at least forty-five (45) days to consider and to accept or reject the terms of this Release and any changes to this Release, whether material or immaterial, did not and will not affect or extend such consideration period. The Executive represents and acknowledges that he has considered this Release for forty-five (45) days or waived his right to do so.

(e) The Executive shall have a period of seven (7) days following the execution of this Release within which to revoke this Release, and that this Release will not become effective or enforceable until this seven (7) day period bas expired. A revocation must be accomplished by hand-delivery of a written notification actually delivered to the Company at the address indicated in Section 13 of the Agreement before the expiration of the seven (7) day period. In the event that the Release is revoked, the GENBAND Parties shall have no obligation to furnish any of the payments and benefits described or provided for in the Agreement. In the event that the Executive receives any consideration pursuant to the Agreement before the GENBAND Parties had notice of the Executive's revocation of this Release and/or an adequate opportunity to stop disbursement, the Executive agrees to promptly return such consideration to the GENBAND Parties.

(f) Without limiting the generality or scope of the release or claims set forth in paragraph 1 above, Executive knowingly and voluntarily enters into this Release with the purpose of releasing any age discrimination claims he may have under the Age Discrimination in Employment Act against the GENBAND Parties.

[Remainder of page intentionally left blank- signature page follows.]

BY SIGNING BELOW, THE EXECUTIVE ACKNOWLEDGES THAT HE HAS READ THIS RELEASE, HAS HAD THE OPPORTUNITY TO CONSULT WITH AN ATTORNEY OF HIS CHOICE, UNDERSTANDS THIS RELEASE, AND IS VOLUNTARIY ENTERING INTO THIS RELEASE. READ THIS RELEASE CAREFULLY. IT CONTAINS A RELEASE OF ALL KNOWN AND UNKNOWN CLAIMS.

IN WITNESS WHEREOF, the Executive has executed this Release as of the date first above written.

Signature of Executive

Printed Name of Executive

EXHIBIT 31.1

CERTIFICATION

I, Franklin W. Hobbs, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Ribbon Communications Inc.;

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

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

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

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

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

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

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

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

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

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

Date: May 2, 2019

/s/ Franklin W. Hobbs

Franklin W. Hobbs
President and Chief Executive Officer
(Principal Executive Officer)

EXHIBIT 31.2

CERTIFICATION

I, Daryl E. Raiford, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Ribbon Communications Inc.;

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

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

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

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

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

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

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

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

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

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

Date: May 2, 2019

/s/ Daryl E. Raiford

Daryl E. Raiford
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

EXHIBIT 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of Ribbon Communications Inc. (the "Company") for the period ended March 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Franklin W. Hobbs, President and Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to his knowledge:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Date: May 2, 2019

/s/ Franklin W. Hobbs

Franklin W. Hobbs
President and Chief Executive Officer
(Principal Executive Officer)

EXHIBIT 32.2

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report on Form 10-Q of Ribbon Communications Inc. (the "Company") for the period ended March 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Daryl E. Raiford, Executive Vice President and Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to his knowledge:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Date: May 2, 2019

/s/ Daryl E. Raiford

Daryl E. Raiford
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)