

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

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Casa Systems, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

3663
(Primary Standard Industrial
Classification Code Number)

75-3108867
(I.R.S. Employer
Identification No.)

**100 Old River Road
Andover, Massachusetts 01810
(978) 688-6706**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Jerry Guo
President, Chief Executive Officer and Chairman
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100 Old River Road
Andover, Massachusetts 01810
(978) 688-6706

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement is declared effective.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

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

Large accelerated filer

☐

Accelerated filer

☐

Non-accelerated filer

☒

Smaller reporting company

☐

(Do not check if a smaller reporting company)

Emerging growth company

☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities To Be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price(2)	Amount of Registration Fee
Common Stock, \$0.001 par value per share	8,452,500	\$30.38	\$256,786,950.00	\$31,969.98

(1) Includes shares the underwriters have the option to purchase.

(2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(c) under the Securities Act on the basis of the average of the high and low prices of the Registrant's Common Stock as reported on the Nasdaq Global Select Market on April 16, 2018.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

PROSPECTUS (Subject to Completion)
Issued April 23, 2018

7,350,000 Shares



Common Stock

The selling stockholders identified in this prospectus, including our Chief Executive Officer and other officers and directors, are offering 7,350,000 shares of our common stock. We are not selling any shares of common stock under this prospectus, and we will not receive any proceeds from the sale of shares by the selling stockholders.

Our common stock is listed on the Nasdaq Global Select Market under the symbol “CASA.” On April 20, 2018, the last reported sale price of our common stock as reported on the Nasdaq Global Select Market was \$30.12 per share.

We are an “emerging growth company” under applicable federal securities laws and are subject to reduced public company reporting requirements. Investing in our common stock involves risks. See “[Risk Factors](#)” beginning on page 11.

[illegible]

(1) See “Underwriters” beginning on page 136 for additional information regarding underwriting compensation.

The selling stockholders have granted the underwriters the right to purchase up to an additional 1,102,500 shares of common stock.

The Securities and Exchange Commission and state securities regulators have not approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares on _____, 2018.

MORGAN STANLEY

BARCLAYS

RAYMOND JAMES

STIFEL

Macquarie Capital

Northland Capital Markets

William Blair

, 2018



History of staying ahead of technological shifts

DOCSIS® 3.0

2008

DOCSIS Qualified

Commercially deployed, fully qualified DOCSIS 3.0 cable modem termination system (CMTS)

DOCSIS® 3.1

2015

Speeds Up to 10 Gbps

Commercially deployed DOCSIS 3.1-compliant solutions supporting speeds up to 10 gigabits per second (Gbps)

2005

FPGAs

Software Centric Approach

Software-centric cable solution leveraging the programmability of FPGAs and general purpose processors

2012

Integrated CCAP

Voice, Video & Data Converged

Commercially deployed converged cable access platform (CCAP) delivering IP voice, digital video and data over a single port

2016

Distributed Access Architecture (DAA)

Introduced DAA Solution

Commercially deployable solution

Perform

Axyom™ U

- Common virtualization convergence, lower
- NFV 2.0 architecture
- 5G-ready converged

DOCSIS® Core

Subscri

Managem

Centrall

Performance-Driven Innovation

Ultra-Broadband Software-Centric Platform

on software framework and multi-services core for fixed and wireless, enabling network costs, quality of service across access types and new services

enabling high performance as well as flexible and dynamic scaling of capacity and services

core and access functions

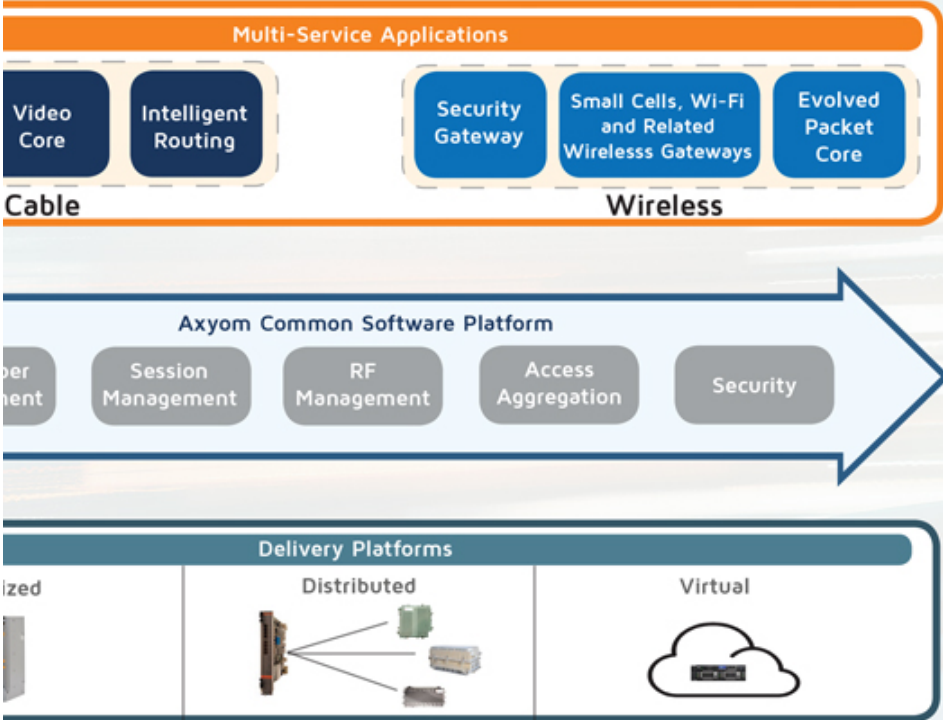


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You should rely only on the information contained in this prospectus or in any free writing prospectus we file with the Securities and Exchange Commission, or SEC. We, the selling stockholders and the underwriters have not authorized anyone to provide you with additional information or information different from that contained in this prospectus or any free writing prospectus. The selling stockholders and the underwriters are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date on the front cover of this prospectus, or other earlier date stated in this prospectus, regardless of the time of delivery of this prospectus or of any sale of our common stock.

For investors outside the United States: none of we, the selling stockholders or the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of our common stock and the distribution of this prospectus outside of the United States.

Terms Used in this Prospectus

Concept	Abbreviation	Definition
Cable Modem Termination System	CMTS	A CMTS is a critical element of a cable service provider's network. A CMTS is typically located either on the cable service provider's premises or at a remote hub in the field and is used to provide high-speed data services such as Internet Protocol, or IP, or Voice over Internet Protocol, or VoIP, to cable subscribers. A CMTS enables IP data and IP voice communication between a cable service provider's networks and subscribers' modems through coaxial cable. A CMTS performs several network services, including subscriber and access management, data security and service provisioning for cable subscribers. A CMTS communicates with subscribers' cable modems using DOCSIS protocol. DOCSIS is a cable industry standard defined by CableLabs, a consortium of cable service providers.
Converged Cable Access Platform	CCAP	A CCAP is a part of a cable service provider's network that enables the delivery of IP voice, digital video and data over a single port. A CCAP combines CMTS functions that enable data and IP voice communication with edge-quadrature amplitude modulation, or Edge-QAM, functionality to enable video delivery over cable networks in one integrated chassis.
Field Programmable Gate Array	FPGA	An FPGA is an integrated circuit designed to be configured by a customer after manufacturing. FPGAs can be reprogrammed in the field to desired application or functionality requirements through the use of custom software. This feature distinguishes FPGAs from Application Specific Integrated Circuits (ASICs), which are custom manufactured for specific tasks and are not able to be modified after manufacturing.
Remote-PHY	R-PHY	R-PHY refers to remotely deployable hardware that is typically located at the edge of a cable service provider's network, near where the customers are located. R-PHY is capable of radio frequency signal generation that provides connectivity from where the customers are located to the data center via an optical network. R-PHY is typically connected to a CMTS or a CCAP system at a data center. By placing R-PHY equipment closer to subscribers, cable service providers are able to move fiber closer to the network edge. This allows for cable service providers to serve more subscribers at higher speed, resulting in overall increased network throughput.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus. You should read the following summary together with the more detailed information appearing in this prospectus, including our consolidated financial statements and related notes, and the risk factors beginning on page 11, before deciding whether to purchase shares of our common stock. Unless the context otherwise requires, we use the terms “Casa Systems,” “Casa,” “our company,” “we,” “us” and “our” in this prospectus to refer to Casa Systems, Inc. and its subsidiaries.

CASA SYSTEMS, INC.

Our Vision

Our products help our customers provide and manage broadband connectivity. We believe consumers and enterprises should be able to enjoy ultra-fast speeds and enhanced digital content experiences through their phones, tablets, computers, TVs and other connected devices at home or on the go. We believe that connectivity should be ubiquitous and seamless; it should not matter whether the user is accessing the Internet through wireless or fixed connections, and it should not matter whether that service is being provided by a cable operator, fixed telecom carrier or wireless services provider. Our innovative, software-centric products are designed to help achieve this vision.

Overview

We offer solutions for next-generation centralized, distributed and virtualized architectures for cable broadband, fixed-line broadband and wireless networks. Our innovative solutions enable customers to cost-effectively and dynamically increase network speed, add bandwidth capacity and new services for consumers and enterprises, reduce network complexity and reduce operating and capital expenditures. Our solutions include a suite of software-centric infrastructure solutions that allow cable service providers to deliver voice, video and data services over a single platform at multi-gigabit speeds.

We focus our development efforts on innovation and being the first to market with new products at each generational shift in network technology. For example, we pioneered the use of a software-centric approach to leverage the programmability of FPGAs and general purpose processors for use in the cable industry. In addition, we believe we were the first to provide each of the following to our customers: a solution enabling cable service providers to deliver Internet Protocol, or IP, voice, digital video and data over a single port; a solution enabling cable service providers to deliver multi-gigabit speeds to their subscribers; and a remote node solution to enable distributed broadband cable access at gigabit speeds.

We have created a software-centric, multi-service portfolio that enables a broad range of core and access network functions for fixed and wireless networks. These networks share a common set of core and access network functions that enable network services such as subscriber management, session management, transport security and radio frequency, or RF, management. Our Axyom™ software architecture allows each of these network functions to be provided and controlled by a distinct segment of software, which can be integrated or combined together in a building block-style fashion with the segments of software responsible for each other network function. This allows us to offer network architectures that can be efficiently tailored to meet each customer’s specific requirements, both as they exist at the time of initial implementation and as they evolve over time. While we initially focused on providing solutions for cable service providers due to our founders’

experience in the cable industry, the commonalities between fixed and wireless network architectures have allowed us to expand our solutions into the wireless market as cable service providers have increasingly sought to add wireless capabilities to their service offerings.

We offer a scalable solution that can meet the evolving bandwidth needs of our customers and their subscribers. Our first installation in a service provider's network frequently involves deploying our broadband products in only a portion of the provider's network and with only a fraction of the capacity of our products enabled at the time of initial installation. Over time, our customers have generally expanded the use of our solutions to other areas of their networks to increase network capacity. Capacity expansions are accomplished either by deploying additional systems or line cards, or by our remote enablement of additional channels through the use of software. Sales of additional line cards and software-based capacity expansions generate higher gross margins than our initial hardware-based deployments.

Our solutions are commercially deployed in over 70 countries by more than 450 customers, including regional service providers as well as some of the largest Tier 1 broadband service providers, serving millions of subscribers. Our principal customers include Charter/Time Warner Cable, Rogers, Sprint and Mediacom in North America; Televisa/IZZI Mexico, Megacable Mexico and Claro Telmex Colombia in Latin America; Liberty Global, Vodafone and DNA Oyj in Europe; and Jupiter Communications, Beijing Gehua CATV Networks and China Mobile in Asia-Pacific.

We have achieved significant growth and profitability. For the year ended December 31, 2017, we generated revenue of \$351.6 million, net income of \$88.5 million, non-GAAP net income of \$110.2 million and adjusted EBITDA of \$153.1 million, representing an increase of 11.2%, a decrease of 0.2%, an increase of 16.0% and an increase of 18.6%, respectively, from the corresponding amounts for the year ended December 31, 2016.¹ For the year ended December 31, 2016, we generated revenue of \$316.1 million, net income of \$88.7 million, non-GAAP net income of \$95.0 million and adjusted EBITDA of \$129.1 million, representing increases of 16.0%, 30.5%, 30.5% and 11.7%, respectively, from the corresponding amounts for the year ended December 31, 2015. For the year ended December 31, 2015, we generated revenue of \$272.5 million, net income of \$67.9 million, non-GAAP net income of \$72.8 million and adjusted EBITDA of \$115.5 million, representing increases of 29.0%, 13.8%, 17.2% and 22.1%, respectively, from the corresponding amounts for the year ended December 31, 2014.

Industry Background

We believe broadband service providers are facing several key challenges, including:

- ***Rapidly increasing bandwidth demand.*** Bandwidth demand has grown substantially and is expected to continue to increase, caused by more users with more connected devices and applications, increased use of bandwidth-intensive streaming media services, and the increasing prevalence of Internet of Things, or IoT, solutions, among other factors.
- ***Competition fueled by increasing breadth of service offerings.*** With increased consumer and enterprise choice for access to broadband, broadband service providers are increasingly coming into competition with each other, and must develop differentiated service offerings with higher levels of performance at lower cost.

¹ Non-GAAP net income and adjusted EBITDA are non-GAAP financial measures. Please see "Selected Consolidated Financial Data—Non-GAAP Financial Measures" for information regarding the limitations of using non-GAAP net income and adjusted EBITDA and for a reconciliation of each of non-GAAP net income and adjusted EBITDA to net income, the most directly comparable financial measure calculated and presented in accordance with GAAP.

- **Increasing network complexity.** As the diversity of service offerings has grown, network complexity has increased.
- **Need to control operating and capital expenditures.** The operation of network infrastructure is space, power and personnel intensive. In addition, broadband service providers are frequently required to incur significant capital expenditures to upgrade existing equipment.

Opportunity to Transform Broadband Networks

Given the challenges they face, broadband service providers are undertaking three key technology initiatives to help build next-generation networks:

- **Densification.** Broadband service providers are shifting from centralized to more distributed architectures, a process referred to as densification. Densification requires extending network connectivity and distributing access aggregation solutions closer to end users.
- **Network convergence.** As fixed and wireless providers continue to consolidate and integrate their service offerings, which is referred to as convergence, these service providers are seeking to integrate their separate delivery modes with all-IP architectures, shared transport and a common suite of software-centric core and access network functions.
- **Virtualization.** Software-enabled architectures that are decoupled from underlying hardware allow for increased efficiencies, upgradability, configuration flexibility, service agility and scalability not feasible with hardware-centric approaches.

Our Solutions

We offer solutions for fixed and wireless networks. Our software-centric, multi-service broadband platform, Axyom, enables ultra-broadband delivery and convergence. We engineered our platform from the ground-up to be high performance, flexible and adaptable, and to allow our customers to seamlessly address the growing demand for bandwidth and connectivity and competitive need for service agility.

Our platform provides the following key benefits to broadband service providers:

- **Addition of critical bandwidth capacity.** Our solutions enable broadband service providers to offer multi-gigabit speeds and to expand capacity seamlessly to meet the growing demand for bandwidth.
- **Flexibility to add new and expand existing services.** Our platform provides us with the flexibility to adapt to changing industry standards and customer needs.
- **Ability to upgrade networks remotely.** Our programmable architecture allows us to deploy technology updates to our customers remotely without the expense, disruption or network downtime caused by hardware replacements or field visits by personnel.
- **Reduced network complexity, operating costs and capital expenditures.** Our converged software platform allows broadband service providers to significantly reduce the complexity and costs of their networks by reducing parallel and otherwise redundant network architectures.
- **Ability to densify networks.** Our products help broadband service providers deploy more capacity at the network edge, closer to where end users and devices are accessing the network, increasing available bandwidth and reducing latency to improve quality of service.

- **Common platform capabilities to address the needs of both fixed and wireless networks.** Our software-centric, multi-service platform enables a broad range of network services for fixed and wireless networks allowing for the delivery of diverse consumer and enterprise applications.

Our primary product line is our portfolio of converged cable access platform, or CCAP, solutions, which enable the provision of voice, video and data over a single port.

Our Competitive Strengths

The following competitive strengths have helped us become a market leader:

- **Highly flexible, software-centric architecture.** We have designed our product portfolio from the ground up to be software-centric and modular in nature. Our proprietary software is at the heart of our products. Our software-centric architecture enables us to virtualize core network and access functions allowing these functions to be decoupled from underlying hardware, which is not feasible with hardware-centric approaches and allows for increased efficiencies, upgradability, configuration flexibility, service agility and scalability. Our software allows us to leverage the programmability of FPGAs and general purpose processors in our solutions.
- **Proven engineering and product development track record.** We have a proven history of anticipating network evolutions and developing solutions that enable next-generation networks. Our forward-looking design and investment approach, coupled with our proven product development track record, has enabled us to deliver fully featured next-generation solutions in advance of competitors. For example, we believe we were first to market with (1) a software-centric cable solution leveraging the programmability of FPGAs and general purpose processors, (2) a commercially deployed, fully qualified DOCSIS 3.0 CMTS, (3) a commercially deployed CCAP delivering IP voice, digital video and data over a single port, (4) commercially deployed DOCSIS 3.1-compliant solutions supporting speeds of up to 10 gigabits per second and (5) a commercially deployable remote-PHY solution.
- **Strong management and engineering team with a culture of innovation.** We pride ourselves on our culture of innovation, which is driven by our management team of experienced executives and engineers with deep industry expertise. As of December 31, 2017, approximately 86% of our employees were engineers or had other technical backgrounds.
- **Customer focus.** We have a passion to serve our customers and the agility and flexibility to offer solutions to meet their evolving requirements.
- **Diversified and established customer base.** Our solutions are commercially deployed in over 70 countries by more than 450 customers, including some of the world's largest Tier 1 broadband service providers.

Market Opportunity

We believe that the shift to software-centric ultra-broadband networks and fixed and wireless convergence presents us with a compelling market opportunity. According to S&P Global Market Intelligence, the global CCAP market, which currently accounts for the majority of our revenue, was \$1.5 billion in 2017. In addition, we believe that new wireless communications and network infrastructure segments that we have entered offer substantial additional market opportunities.

Our Growth Strategy

The key elements of our growth strategy are:

- Continue to innovate and extend technology leadership through R&D investment.
- Further penetrate existing customers.
- Expand our customer base.
- Expand the breadth of solutions sold to customers, with particular focus on the development of new software-based and virtualized products.
- Leverage our core technology for the cable industry into adjacent wireless markets.
- Invest in our platform through selective acquisitions.

Risks Associated with Our Business

You should consider carefully the risks described under the “Risk Factors” section beginning on page 11 and elsewhere in this prospectus. These risks, which include the following, could materially and adversely affect our business, financial condition, operating results, cash flow and prospects, which could cause the trading price of our common stock to decline and could result in a partial or total loss of your investment:

- If we do not successfully anticipate technological shifts, market needs and opportunities, and develop new products and product enhancements that meet those technological shifts, needs and opportunities, we may not be able to compete effectively.
- Our success depends in large part on broadband service providers’ continued deployment of, and investment in, ultra-broadband network capabilities that make use of our solutions.
- We expect certain of our customers will continue to account for a substantial portion of our revenue.
- Timing of large orders and seasonality in our revenue may cause our quarterly revenue and results of operations to fluctuate and possibly decline materially from quarter to quarter.
- Our sales to the broadband service provider market are volatile and our sales cycles can be long and unpredictable. As a result, our sales and revenue are difficult to predict and may vary substantially from period to period, which may cause our revenue and results of operations to fluctuate and possibly decline significantly.
- We may not generate positive returns on our research and development investments.
- Our CCAP solutions currently represent a significant majority of our product sales; this concentration may limit our ability to increase our revenue.
- We have invested heavily in developing wireless solutions, and we face risks in seeking to expand our platform into the wireless market.
- We believe the broadband service provider industry is in the early stages of a major architectural shift toward the virtualization of networks and the use of networks with distributed architectures. If the architectural shift does not occur, if it does not occur at the pace we predict, or if the products and services we have developed are not attractive to our customers after such shift takes place, our revenues could decline.
- We face intense competition, including from larger, well-established companies, and we may lack sufficient financial or other resources to maintain or improve our competitive position.

- If we are unable to sell additional products to our existing customers, our revenue growth will be adversely affected and our revenue could decline.
- We may have difficulty attracting new large customers or acquiring new customers due to the high costs of switching broadband equipment.
- Our results of operations are likely to vary significantly from period to period and be unpredictable. If we fail to meet the expectations of analysts or investors, the market price of our common stock could decline substantially.

Initial Public Offering

On December 19, 2017, we closed our initial public offering of 6,900,000 shares of our common stock, which included 900,000 shares of our common stock pursuant to the full exercise by the underwriters of an option to purchase additional shares, at a public offering price of \$13.00 per share for aggregate gross proceeds of \$89.7 million.

Recent Developments (preliminary and unaudited)

Our consolidated financial statements for our fiscal quarter ended March 31, 2018 are not yet available. Accordingly, the financial results we present below are preliminary and subject to the completion of our financial closing procedures and any adjustments that may result from the completion of the quarterly review of our consolidated financial statements. As a result, these preliminary results may differ from the actual results that will be reflected in our consolidated financial statements for the quarter when they are completed and publicly disclosed. These preliminary results may change and those changes may be material.

Our expectations with respect to our unaudited results for the period discussed below are based upon management estimates and are the responsibility of management. Our independent registered public accounting firm has not audited, reviewed or performed any procedures with respect to these preliminary results and, accordingly, does not express an opinion or any other form of assurance about them.

Although the results of our fiscal quarter ended March 31, 2018 are not yet finalized, the following information reflects our preliminary expectations with respect to such results based on currently available information:

- Revenue is expected to be between \$88.0 million and \$89.0 million, representing an increase of 21.0% to 22.4% as compared to revenue of \$72.7 million for the three months ended March 31, 2017. The year-over-year quarterly increase was primarily attributable to an increase in sales of our broadband products to existing customers in North America and Asia-Pacific.
- Net income is expected to be between \$17.2 million and \$17.7 million, representing a decrease of 5.5% to 2.7% as compared to net income of \$18.2 million for the three months ended March 31, 2017. The year-over-year quarterly decrease in net income was primarily attributable to a reduction in gross margin, due to an increase in sales of our hardware-based broadband products, and an increase in operating expenses due to an increase in headcount, stock-based compensation and expenditures for new product development.
- Non-GAAP net income is expected to be between \$21.0 million and \$21.5 million, representing an increase of 5.5% to 8.0% as compared to non-GAAP net income of \$19.9 million for the three months ended March 31, 2017. The year-over-year quarterly increase in non-GAAP net income was primarily attributable to an increase in sales of our broadband products, partially offset by a reduction in gross margin, due to an increase in sales of our hardware-based broadband products, and an increase in operating expenses due to an increase in headcount and expenditures for new product development.

The estimates above represent the most current information available to management. A range for the preliminary results described above is provided because our financial closing procedures for the month and quarter ended March 31, 2018 are not yet complete.

Our Corporate Information

We were incorporated in the State of Delaware on February 28, 2003. Our principal executive offices are located at 100 Old River Road, Andover, Massachusetts 01810, and our telephone number at that address is (978) 688-6706. Our website address is www.casa-systems.com. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider information contained on our website to be part of this prospectus or in deciding whether to purchase shares of our common stock.

“Casa Systems,” “Casa,” our logo and other trademarks or tradenames of Casa Systems, Inc. appearing in this prospectus are our property. This prospectus also contains trademarks and trade names of other companies, which are the property of their respective owners. Solely for convenience, trademarks and trade names referred to in this prospectus may appear without the ® or ™ symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the right of the applicable licensor to these trademarks and trade names.

THE OFFERING

Common stock offered by the selling stockholders	7,350,000 shares
Common stock to be outstanding after this offering	81,800,741 shares. The number of shares of common stock outstanding will not change as a result of this offering.
Option to purchase additional shares	The selling stockholders have granted the underwriters an option, exercisable for 30 days after the date of this prospectus, to purchase up to an additional 1,102,500 shares from the selling stockholders.
Use of proceeds	The selling stockholders will receive all of the net proceeds from the sale of shares in this offering. We will not receive any proceeds from the shares sold by the selling stockholders. See “Use of Proceeds.”
Dividend policy	Although we declared special dividends on five separate occasions prior to our initial public offering, we do not anticipate declaring any cash dividends in the foreseeable future. See “Dividend Policy” for more information.
Risk factors	See “Risk Factors” for a discussion of factors you should carefully consider before deciding to invest in our common stock.
Nasdaq Global Select Market symbol	“CASA”

The number of shares of our common stock to be outstanding after this offering is based on 81,800,741 shares of common stock outstanding as of March 31, 2018 and excludes:

- 145,830 shares of common stock issuable upon the exercise of stock options outstanding under our 2003 Stock Incentive Plan as of March 31, 2018, with a weighted-average exercise price of \$0.25 per share;
- 14,502,800 shares of common stock issuable upon the exercise of stock options outstanding under our 2011 Stock Incentive Plan as of March 31, 2018, with a weighted-average exercise price of \$4.26 per share;
- 371,855 shares of common stock issuable upon the vesting of restricted stock units outstanding under our 2011 Stock Incentive Plan as of March 31, 2018;
- 1,067,376 shares of common stock issuable upon the exercise of stock options outstanding under our 2017 Stock Incentive Plan as of March 31, 2018, with a weighted-average exercise price of \$17.89 per share;
- 135,723 shares of common stock issuable upon the vesting of restricted stock units outstanding under our 2017 Stock Incentive Plan as of March 31, 2018; and
- 8,856,598 additional shares of common stock reserved for future issuance under our 2017 Stock Incentive Plan as of March 31, 2018.

Except as otherwise noted, all information in this prospectus assumes no exercise by the underwriters of their option to purchase up to an additional 1,102,500 shares from the selling stockholders.

SUMMARY CONSOLIDATED FINANCIAL DATA

The following tables present summary consolidated financial and other financial data for our business. The summary consolidated statement of operations data presented below for the years ended December 31, 2017, 2016 and 2015 and the summary consolidated balance sheet data as of December 31, 2017 and 2016 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. The summary consolidated statement of operations data presented below for the year ended December 31, 2014 and the summary consolidated balance sheet data as of December 31, 2015 and 2014 have been derived from our audited consolidated financial statements not included in this prospectus. Our historical results are not necessarily indicative of the results to be expected in the future. You should read this summary consolidated financial data in conjunction with the section of this prospectus titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and related notes included elsewhere in this prospectus.

	Year Ended December 31,			
	2017	2016	2015	2014
	(in thousands, except per share amounts)			
Consolidated Statement of Operations Data:				
Revenue:				
Product	\$ 311,896	\$ 279,223	\$ 247,588	\$ 194,358
Service	39,679	36,905	24,862	16,920
Total revenue	351,575	316,128	272,450	211,278
Cost of revenue(1):				
Product	88,538	89,340	74,349	59,088
Service	4,973	8,477	5,265	5,917
Total cost of revenue	93,511	97,817	79,614	65,005
Gross profit	258,064	218,311	192,836	146,273
Operating expenses:				
Research and development(1)	60,677	49,210	37,155	25,481
Sales and marketing(1)	39,602	36,114	36,157	21,409
General and administrative(1)	21,563	18,215	16,453	10,346
Total operating expenses	121,842	103,539	89,765	57,236
Income from operations	136,222	114,772	103,071	89,037
Other income (expense), net	(13,404)	921	(1,408)	(2,942)
Income before provision for income taxes	122,818	115,693	101,663	86,095
Provision for income taxes	34,318	27,025	33,742	26,387
Net income	\$ 88,500	\$ 88,668	\$ 67,921	\$ 59,708
Cash dividends declared per common share or common share equivalent	\$ 1.7576	\$ 2.9197	\$ —	\$ 0.3835
Net income (loss) attributable to common stockholders(2):				
Basic	\$ 11,849	\$ (35,119)	\$ 27,302	\$ 23,287
Diluted	\$ 11,849	\$ (35,119)	\$ 30,402	\$ 23,843
Net income (loss) per share attributable to common stockholders(2):				
Basic	\$ 0.34	\$ (1.07)	\$ 0.86	\$ 0.78
Diluted	\$ 0.26	\$ (1.07)	\$ 0.78	\$ 0.73

	Year Ended December 31,			
	2017	2016	2015	2014
	(in thousands, except per share amounts)			
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders ⁽²⁾ :				
Basic	35,359	32,864	31,740	29,983
Diluted	44,972	32,864	38,809	32,683

Other Financial Data:

Non-GAAP net income ⁽³⁾	\$ 110,230	\$ 95,032	\$ 72,812	\$ 62,145
Adjusted EBITDA ⁽³⁾	\$ 153,096	\$ 129,084	\$ 115,541	\$ 94,632

- (1) Includes stock-based compensation expense related to stock options, stock appreciation rights and restricted stock units granted to employees and non-employee consultants as follows:

	Year Ended December 31,			
	2017	2016	2015	2014
	(in thousands)			
Cost of revenue	\$ 306	\$ 237	\$ 143	\$ 161
Research and development expense	2,864	2,306	1,843	852
Sales and marketing expense	1,112	1,147	775	598
General and administrative expense	4,854	4,614	4,560	380
Total stock-based compensation expense	<u>\$9,136</u>	<u>\$8,304</u>	<u>\$7,321</u>	<u>\$1,991</u>

- (2) See Note 13 to our audited consolidated financial statements included elsewhere in this prospectus for an explanation of the calculations of basic and diluted net income (loss) per share attributable to common stockholders.
- (3) These financial measures are not calculated in accordance with GAAP. See “Selected Consolidated Financial Data—Non-GAAP Financial Measures” for information regarding our use of these non-GAAP financial measures and a reconciliation of such measures to their nearest comparable financial measures calculated and presented in accordance with GAAP.

	As of December 31,			
	2017	2016	2015	2014
	(in thousands)			
Consolidated Balance Sheet Data:				
Cash, cash equivalents and marketable securities	\$260,820	\$343,946	\$ 92,496	\$ 77,155
Working capital ⁽¹⁾	324,710	286,652	162,981	99,237
Total assets	469,697	583,035	283,097	230,815
Long-term debt, including current portion, net of unamortized debt issuance costs	297,615	299,751	7,795	—
Total liabilities	419,541	557,259	103,160	124,636
Convertible preferred stock	—	97,479	97,479	97,479
Total stockholders' equity (deficit)	50,156	(71,703)	82,458	8,700

- (1) We define working capital as current assets less current liabilities.

RISK FACTORS

Risks Related to Our Business and Our Industry

If we do not successfully anticipate technological shifts, market needs and opportunities, and develop new products and product enhancements that meet those technological shifts, needs and opportunities, we may not be able to compete effectively.

The broadband service provider market, including fixed and wireless, is characterized by rapid technological shifts and increasingly complex customer requirements to achieve scalable networks that accommodate rapidly increasing consumer demand for bandwidth. To compete effectively, we must continue to develop new technologies and products that address emerging technological trends and changing customer needs. The process of developing new technology is complex and uncertain, and the development of new offerings requires significant upfront investment that may not result in material improvements to existing products or result in marketable new products or costs savings or revenue for an extended period of time, if at all.

We believe that our culture of innovation is a significant factor in our ability to develop new products. If we are not able to attract and retain employees that are able to contribute to our culture of innovation, our ability to identify emerging technological trends and changing customer needs and successfully develop new products to address them could be adversely impacted.

The success of new products and enhancements also depends on many other factors, including timely completion and introduction, differentiation from products offered by competitors and previous versions of our own products and, ultimately, market acceptance of these new products and enhancements. In addition, new technologies or standards could render our existing products obsolete or less attractive to customers. If we are unable to successfully introduce new products and enhancements, we would not be able to compete effectively and our business, financial condition, results of operations and prospects could be materially adversely affected.

Our success depends in large part on broadband service providers' continued deployment of, and investment in, ultra-broadband network capabilities that make use of our solutions.

A significant portion of our product and solution suite is dedicated to enabling cable service providers to deliver voice, video and data services over newer and faster ultra-broadband networks. As a result, our success depends significantly on these cable service providers' continued deployment of, and investment in, their networks, which depends on a number of factors outside of our control. These factors include capital constraints, the presence of available capacity on legacy networks, perceived subscriber demand for ultra-broadband networks, competitive conditions within the broadband service provider industry and regulatory issues. If broadband service providers do not continue deploying and investing in their ultra-broadband networks in ways that involve our solutions, for these or other reasons, our business, financial condition, results of operations and prospects could be materially adversely affected.

We expect certain of our customers will continue to represent a substantial portion of our revenue.

Historically, certain of our customers have accounted for a significant portion of our revenue. For example, sales to Charter, which purchased Time Warner Cable in 2016, accounted for 37%, 23% and 14% of our revenue for the years ended December 31, 2017, 2016 and 2015, respectively; sales to Liberty Global accounted for 11%, 10% and 17% of our revenue for the years ended December 31, 2017, 2016 and 2015, respectively; and sales to Rogers accounted for 19% of our revenue for the year ended December 31, 2016. Based on their historical purchasing patterns, we expect that our large customers will continue to account for a substantial portion of our

revenue in future periods. However, our customers generally make purchases from us on a purchase-order basis rather than pursuant to long-term contracts, and those that do enter long-term contracts typically have the right to terminate their contracts for convenience. As a result, we generally have no assurances that these large customers will continue to purchase our solutions. We may also see consolidation of our customer base, which could result in loss of customers. In addition, some of our large customers have used, and may in the future use, the sizes and relative importance of their orders to our business to require that we enter into agreements with more favorable terms than we would otherwise agree to and obtain price concessions. The loss of a significant customer, a significant delay or reduction in purchases by large customers or significant price concessions to one or more large customers, could have a material adverse effect on our business, financial condition, results of operations and prospects.

Timing of large orders and seasonality in our revenue may cause our quarterly revenue and results of operations to fluctuate and possibly decline materially from quarter to quarter.

Our customers tend to make large purchases from us when initiating or upgrading services based on our solutions, followed by smaller purchases for maintenance and ongoing support. In addition, purchases by existing customers of capacity expansions can also involve large individual orders that may represent a significant portion of our revenue for a fiscal quarter, which may also have a significant impact on our quarterly gross margin due to these capacity expansions generating higher gross margins than our initial hardware-based deployments. As a result of all of these factors, our quarterly revenue and results of operations, including our gross margin, may be significantly impacted by one or a small number of large individual orders. For example, any cancellation of orders or any acceleration or delay in anticipated product purchases or the acceptance of shipped products by a large customer could materially affect our revenue and results of operations in any quarterly period. We may be unable to sustain or increase our revenue from other new or existing customers to offset the discontinuation of purchases by one of our larger customers. As a result, our quarterly revenue and results of operations are difficult to estimate and may fluctuate or decline materially from quarter to quarter.

In addition, we believe that there are significant seasonal factors which may cause revenue to be greater for the first and fourth quarters of our fiscal year as compared to the second and third quarters. We believe that this seasonality results from a number of factors, including the procurement, budgeting and deployment cycles of many of our customers. These seasonal variations may cause our quarterly revenue and results of operations to fluctuate or decline materially from quarter to quarter.

Our sales to the broadband service provider market are volatile and our sales cycles can be long and unpredictable. As a result, our sales and revenue are difficult to predict and may vary substantially from period to period, which may cause our revenue and results of operations to fluctuate and possibly decline significantly.

Our sales to the broadband service provider market have been characterized by large and sporadic purchases and long sales cycles. Sales activity often depends upon the stage of completion of expanding network infrastructures, the availability of funding and the extent to which broadband service providers are affected by regulatory, economic and business conditions in the countries in which they operate.

In addition, the timing of our sales and revenue recognition is difficult to forecast because of the unpredictability of our products' sales cycles. A sales cycle is the period between initial contact with a prospective customer and the sale of our products to that customer. Customer orders often involve the purchase of multiple products. These orders are complex and difficult to obtain because prospective customers generally consider a number of factors over an extended period of time before committing to purchase the products and solutions we sell. Customers, especially in the case of our large customers, often view the purchase of our

products as a significant and strategic decision and require considerable time to evaluate, test and qualify our products prior to making a purchase decision and placing an order. The length of time that customers devote to their evaluation, contract negotiation and budgeting processes varies significantly, but can often exceed 24 months. During the sales cycle, we expend significant time and money on sales and marketing activities and make investments in evaluation equipment, all of which are included in our sales and marketing expenses and lower our operating margins, particularly if no sale occurs.

Even if a customer decides to purchase our products, there are many factors affecting the timing of our recognition of revenue, which makes our revenue difficult to forecast. For example, the sale of our products may be subject to acceptance testing or there may be unexpected delays in a customer's internal procurement processes, particularly for some of our larger customers, for whom our products represent a very small percentage of their total procurement activity. These factors may result in our inability to recognize revenue for months or years following a sale. In addition, other factors that are specific to particular customers can affect the timing of their purchases and the variability of our revenue recognition, including the strategic importance of a particular project to a customer, budgetary constraints and changes in their personnel. For all of these reasons, it is difficult to predict whether a sale will be completed, the particular period in which a sale will be completed and the period in which revenue from a sale will be recognized. If our sales cycles lengthen, our revenue could be lower than expected, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

We may not generate positive returns on our research and development investments.

Developing our products is expensive, and the investment in product development may involve a long payback cycle or may result in investments in technologies or standards that do not get adopted in the timeframe we anticipate, or at all. For the years ended December 31, 2017, 2016 and 2015, our research and development expenses were \$60.7 million, or approximately 17.3% of our revenue, \$49.2 million, or approximately 15.6% of our revenue, and \$37.2 million, or approximately 13.6% of our revenue, respectively. We expect to continue to invest heavily in software development in order to expand the capabilities of our broadband and wireless infrastructure solutions, introduce new products and features and build upon our technology leadership, and we expect that our research and development expenses will continue to increase in absolute dollars and as a percentage of revenue from 2017 to 2018. Our investments in research and development may not generate positive returns in a timely fashion or at all.

Our converged cable access platform, or CCAP, solutions currently represent a significant majority of our product sales; this concentration may limit our ability to increase our revenue, and our business would be adversely affected in the event we are unable to sell one or more of our products.

We are heavily dependent upon the sales of our CCAP solutions. In the event we are unable to market and sell these products or any future product that represents a substantial amount of our revenue, our business, financial condition, results of operations and prospects could be materially adversely affected.

We have invested heavily in developing wireless solutions, and we face risks in seeking to expand our platform into the wireless market.

We have invested heavily in developing wireless solutions that have yet to generate any significant revenue. We cannot guarantee that these investments, or any of our other investments in research and development, will ever generate material revenue or become profitable for us, and the failure of these investments to generate positive returns may adversely impact our business, financial condition, results of operations and prospects. The wireless market makes up a substantial portion of our total potential addressable

market. In addition, expanding our offerings into the wireless market presents other significant risks and uncertainties, including potential distraction of management from other business operations that generate more substantial revenue, the dedication of significant research and development, sales and marketing, and other resources to this new business line at the expense of our other business operations and other risks that we may not have adequately anticipated.

We believe the broadband service provider industry is in the early stages of a major architectural shift toward the virtualization of networks and the use of networks with distributed architectures. If the architectural shift does not occur, if it does not occur at the pace we predict, or if the products and services we have developed are not attractive to our customers after such shift takes place, our revenues could decline.

We believe the broadband service provider industry is in the early stages of transitioning to the virtualization of networks and the use of networks with distributed architectures. We are developing products and services that we believe will be attractive to our customers and potential customers who make that shift. Our strategy depends in part on our belief that the industry shift to a software-centric cloud-based architecture and increasing densification will continue. In our experience, fundamental changes like this often take time to accelerate and the adoption rates of our customers may vary. As our customers determine their future network architectures and how to implement them, we may encounter delayed timing of orders, deferred purchasing decisions and reduced expenditures. These longer decision cycles and reduced expenditures may negatively impact our revenues, or make it difficult for us to accurately predict our revenues, either of which could materially adversely affect our business, financial condition, results of operations and prospects. Moreover, it is possible that our customers may reverse or fail to expand upon current trends toward virtualization and distributed architectures, which could result in significantly reduced demand for the products that we have developed and currently plan to develop.

We face intense competition, including from larger, well-established companies, and we may lack sufficient financial or other resources to maintain or improve our competitive position.

The market for broadband infrastructure solutions is intensely competitive, and we expect competition to increase in the future from established competitors and new market entrants. This competition could result in increased pricing pressure, reduced profit margins, increased sales and marketing expenses and our failure to increase, or the loss of, market share, any of which could materially adversely affect our business, financial condition, results of operations and prospects.

In the broadband service provider market, we primarily compete with larger and more established companies, such as Arris, Cisco, Ericsson and Nokia.

Many of our existing and potential competitors enjoy substantial competitive advantages, such as:

- greater name recognition and longer operating histories;
- larger sales and marketing budgets and resources;
- broader distribution and established relationships with customers;
- greater access to larger customer bases;
- greater customer support resources;
- greater manufacturing resources;
- the ability to leverage their sales efforts across a broader portfolio of products;

- the ability to leverage purchasing power with vendor subcomponents;
- the ability to incorporate additional functionality into their existing products;
- the ability to bundle offerings with other products and services;
- the ability to set more aggressive pricing policies;
- the ability to offer greater amounts of equity and more valuable equity as incentives for purchases of their products and services;
- lower labor and development costs;
- greater resources to fund research and development or otherwise acquire new product offerings;
- larger intellectual property portfolios; and
- substantially greater financial, technical, research and development or other resources.

Our ability to compete will depend upon our ability to provide a better solution than our competitors at a price that offers superior value. We may be required to make substantial additional investments in research, development, sales and marketing in order to respond to competition.

We also expect increased competition if our market continues to expand. Conditions in our market could change rapidly and significantly as a result of technological advancements or other factors. Current or potential competitors may be acquired by third parties that have greater resources available than we do. Our current or potential competitors might take advantage of the greater resources of the larger organizations resulting from these acquisitions to compete more vigorously or broadly with us. In addition, continued industry consolidation might adversely affect customers' perceptions of the viability of smaller and even medium-sized companies, such as us, and, consequently, customers' willingness to purchase from us. Further, certain large customers may develop broadband infrastructure solutions for internal use and/or to broaden their portfolios of internally developed resources, which could allow these customers to become new competitors in our market.

If we are unable to sell additional products to our existing customers, our revenue growth will be adversely affected and our revenue could decline.

To increase our revenue, we must sell additional products to our existing customers and add new customers. We expect that a substantial portion of our future sales will be follow-on sales to existing customers. For example, one of our sales strategies is to target sales of capacity expansions and implementation of wireless solutions at our current cable customers because they are familiar with the operational and economic benefits of our solutions. However, our existing customers may choose to use other providers for their infrastructure needs. If we fail to sell additional products to our existing customers, our business, financial condition, results of operations and prospects could be materially adversely affected.

We may have difficulty attracting new large customers or acquiring new customers due to the high costs of switching broadband equipment.

Broadband service providers typically need to make substantial investments when deploying network infrastructure, which can delay a purchasing decision. Once a broadband service provider has deployed infrastructure for a particular portion of its network, it is often difficult and costly to switch to another vendor's infrastructure. Unless we are able to demonstrate that our products offer significant performance, functionality or cost advantages that outweigh a customer's expense of switching from a competitor's product, it will be difficult for us to generate sales once that competitor's equipment has been deployed. Accordingly, if a customer has

already deployed a competitor's product for its broadband infrastructure, it may be difficult for us to sell our products to that customer. If we fail to attract new large customers or acquire new customers, our business, financial condition, results of operations and prospects could be materially adversely affected.

We are exposed to the credit risk of some of our customers and to credit exposures in the event of turmoil in the credit markets, which could result in material losses.

Due to our reliance on significant customers, we are dependent on the continued financial strength of these customers. If one or more of our significant customers experience financial difficulties, it could result in uncollectable accounts receivable and our loss of such customers and anticipated revenue.

The majority of our sales are on an open credit basis, with typical payment terms of one year or less. We monitor individual customer payment capability in granting such open credit arrangements, seeking to limit such open credit to amounts we believe our customers can pay and maintain reserves we believe are adequate to cover exposure for doubtful accounts. However, there can be no assurance that our open credit customers will pay the amounts they owe to us or that the reserves we maintain will be adequate to cover such credit exposure. Our customers' failure to pay and/or our failure to maintain sufficient reserves could have a material adverse effect on our consolidated financial statements. In addition, in the event that turmoil in the credit markets makes it more difficult for some customers to obtain financing, those customers' ability to pay could be adversely impacted, which in turn could have a material adverse impact on our business and operations.

A portion of our sales is also derived through our resellers, which tend to have more limited financial resources than other customers and to present increased credit risk. Our resellers also typically have the ability to terminate their agreements with us for any reason upon advance written notice.

We are exposed to fluctuations in currency exchange rates, which could adversely affect our business, financial condition, results of operations and prospects.

Our sales agreements are primarily denominated in U.S. dollars. Therefore, a strengthening U.S. dollar could increase the real cost of our products to our customers outside of the U.S., and alternatively a decrease in the value of the U.S. dollar relative to foreign currencies could increase our product and operating costs in foreign locations. If we are not able to successfully hedge against the risks associated with the currency fluctuations, our business, financial condition, results of operations and prospects could be materially adversely affected.

We generate a significant amount of revenue from sales to customers outside of the United States, and we are therefore subject to a number of risks associated with international sales and operations.

We have extensive international operations and generate a significant amount of revenue from sales to customers in Asia-Pacific, Europe and the Latin America. Our ability to grow our business and our future success will depend to a significant extent on our ability to continue to expand our operations and customer base worldwide.

As a result of our international reach, we must hire and train experienced personnel to staff and manage our foreign operations. To the extent that we experience difficulties in recruiting, training, managing and retaining an international staff, and specifically staff related to sales management and sales personnel, we may experience difficulties in sales productivity in foreign markets. We also enter into strategic relationships with resellers and sales agents in certain international markets where we do not have a local presence. If we are not able to maintain these relationships or to recruit additional companies to enter into reseller and sales agent relationships, our

future success in these international markets could be limited. Business practices in the international markets that we serve may differ from those in the U.S. and may require us in the future to include terms other than our standard terms in customer contracts. To the extent that we may enter into customer contracts in the future that include non-standard terms related to payment, warranties or performance obligations, our business, financial condition, results of operations and prospects could be materially adversely affected.

Our international sales and operations are subject to a number of risks, including the following:

- greater risk of unexpected changes in regulatory practices, tariffs and tax laws and treaties;
- greater difficulty in enforcing contracts and accounts receivable collection and longer collection periods;
- increased expenses incurred in establishing and maintaining our international operations;
- fluctuations in exchange rates between the U.S. dollar and foreign currencies where we do business;
- greater difficulty and costs in recruiting local experienced personnel;
- wage inflation in certain growing economies;
- general economic and political conditions in these foreign markets;
- economic uncertainty around the world as a result of sovereign debt issues;
- communication and integration problems resulting from cultural and geographic dispersion;
- limitations on our ability to access cash resources in our international operations;
- ability to establish necessary business relationships and to comply with local business requirements;
- risks associated with trade restrictions and foreign legal requirements, including the importation, certification and localization of our products required in foreign countries;
- the uncertainty of protection for intellectual property rights in some countries;
- delays resulting from our need to comply with foreign cybersecurity laws;
- greater risk of a failure of our operations and employees to comply with both U.S. and foreign laws and regulations, including antitrust regulations, the FCPA, privacy and data protection laws and regulations and any trade regulations ensuring fair trade practices; and
- heightened risk of unfair or corrupt business practices in certain geographies and of improper or fraudulent sales arrangements that may impact financial results and result in restatements of, or irregularities in, financial statements.

These and other factors could harm our ability to gain future international revenue and, consequently, materially adversely affect our business, financial condition, results of operations and prospects. Expanding our existing international operations and entering into additional international markets will require significant management attention and financial commitments. Our failure to successfully manage our international operations and the associated risks effectively could limit our future growth or materially adversely affect our business, financial condition, results of operations and prospects.

We are subject to anti-corruption laws such as the U.S. Foreign Corrupt Practices Act of 1977, as amended.

We are subject to anti-corruption laws such as the U.S. Foreign Corrupt Practices Act of 1977, as amended, or the FCPA, which generally prohibits U.S. companies and their employees and intermediaries from making

corrupt payments to foreign officials for the purpose of obtaining or keeping business, securing an advantage or directing business to another individual or entity, and requires companies to maintain accurate books and records. Under the FCPA, U.S. companies may be held liable for the corrupt actions taken by directors, officers, employees, agents, or other strategic or local partners or representatives. We rely on non-employee third-party representatives and other intermediaries to develop international sales opportunities, and generally have less direct control over such third parties' actions taken on our behalf. If we or our intermediaries fail to comply with the requirements of the FCPA or similar legislation, governmental authorities in the United States and elsewhere could seek to impose civil and/or criminal fines and penalties, which could have a material adverse effect on our business, reputation, results of operations and financial condition. We intend to increase our international sales and business and, as such, the cost of complying with such laws, and the potential harm from our noncompliance, are likely to increase.

Failure to comply with anti-corruption laws, such as the FCPA and the United Kingdom Bribery Act 2010, or the Bribery Act, and similar laws associated with our activities outside the U.S., could subject us to penalties and other adverse consequences. Any violation of the FCPA, Bribery Act or similar laws could result in whistleblower complaints, adverse media coverage, investigations, loss of export privileges, severe criminal or civil sanctions suspension or debarment from U.S. government contracts, all of which could have a material adverse effect on our reputation, business, results of operations and prospects. In addition, responding to any enforcement action or related investigation may result in a materially significant diversion of management's attention and resources and significant defense costs and other professional fees.

We are subject to governmental export and import controls that could impair our ability to compete in international markets or subject us to liability if we violate these controls.

Our products may be subject to various export controls and because we incorporate encryption technology into certain of our products, certain of our products may be exported from various countries only with the required export license or through an export license exception. Furthermore, certain export control and economic sanctions laws prohibit the shipment of certain products, technology, software and services to embargoed countries and sanctioned governments, entities, and persons. If we fail to comply with the applicable export control laws, customs regulations, economic sanctions or other applicable laws, we could be subject to monetary damages or the imposition of restrictions which could materially adversely affect our business, financial condition, results of operations and prospects and could also harm our reputation. Further, there could be criminal penalties for knowing or willful violations, including incarceration for culpable employees and managers. Obtaining the necessary export license or other authorization for a particular sale may be time-consuming and may result in the delay or loss of sales opportunities. We recently discovered that we may have inadvertently violated certain technical provisions of the U.S. export control laws and regulations by failing to inform customers of their export control obligations and failing to make certain submissions to the Commerce Department's Bureau of Industry and Security, or BIS, in a timely and complete manner. However, we believe that the exports of our products were all to destinations and end users that would not have required licensing under the U.S. export control and sanctions laws. We have voluntarily disclosed the potential technical violations to BIS, and, although BIS may impose a penalty, we do not expect any such penalty to be material to our business, financial condition, results of operations and prospects.

In addition, various countries regulate the import of certain encryption technology and products, including through import permit and license requirements, and have enacted laws that could limit our ability to distribute our products or could limit our customers' ability to implement our products in those countries. Any change in export or import regulations, economic sanctions or related legislation, shift in the enforcement or scope of existing regulations or change in the countries, governments, persons or technologies targeted by such regulations could result in decreased use of our products by, or in our decreased ability to export or sell our products to, existing or potential customers with international operations or create delays in the introduction of our products into international markets. Any decreased use of our products or limitation on our ability to export or sell our products could materially adversely affect our business, financial condition, results of operations and prospects.

Our revenue growth rate in recent periods may not be indicative of our future performance.

Our revenue growth rate in recent periods may not be indicative of our future performance. Our revenue grew 11.2% from the year ended December 31, 2016 to the year ended December 31, 2017 and grew 16.0% from the year ended December 31, 2015 to the year ended December 31, 2016. We may not achieve similar revenue growth rates in future periods. You should not rely on our revenue for any prior quarterly or annual period as any indication of our future revenue or revenue growth. If we are unable to maintain consistent revenue or revenue growth, our business, financial condition, results of operations and prospects could be materially adversely affected.

As the majority of the growth in our revenue and income from operations has occurred since 2013, it is difficult to evaluate our future prospects.

We were founded in 2003 and booked our first revenue in 2006. The majority of the growth in our revenue and income from operations has occurred since 2013, and it is difficult to evaluate our future prospects, including our ability to plan for and manage future growth. We have encountered and will continue to encounter risks and difficulties frequently experienced by rapidly growing companies in constantly evolving industries, including the risks described in this prospectus. If we do not address these risks successfully, our business, financial condition, results of operations and prospects could be materially adversely affected, and the market price of our common stock could decline.

Our products are necessary for the operation of our customers' broadband service operations. Product quality problems, warranty claims, services disruptions, or other defects, errors or vulnerabilities in our products or services could harm our reputation and materially adversely affect our business, financial condition, results of operations and prospects.

We assist our customers in the operation of their broadband service operations. Failures of our products could result in significant interruptions in our customers' capabilities to maintain their networks and operations. Further, unsatisfactory performance could cause us to lose revenue or market share, increase our service costs, cause us to incur substantial costs in analyzing, correcting or redesigning our products, cause us to lose significant customers, subject us to liability for damages and divert our resources from other tasks, any one of which could materially adversely affect our business, financial condition, results of operations and prospects.

In addition, sophisticated hardware and operating system software and applications that we produce or procure from third parties may contain defects in design or manufacture, including "bugs" and other problems that could unexpectedly interfere with the operation of our networks, system, or products. Such defects could result in warranty claims or claims by customers for losses that they sustain or, in some cases, could allow customers to claim damages. In the past, we have had to replace certain components of products that we had shipped or provide remediation in response to the discovery of defects or bugs from failures in software protocols.

Limitation of liability provisions in our standard terms and conditions of sale, and those of our resellers and sales agents, may not be enforceable under some circumstances or may not fully or effectively protect us from end-customer claims and related liabilities and costs. In some cases, including with respect to indemnification obligations under many of our agreements with customers and resellers, our contractual liability may be uncapped. The sale and support of our products also entail the risk of product liability claims. We maintain insurance to protect against certain types of claims associated with the use of our products, but our insurance coverage may not adequately cover any such claims. In addition, even claims that ultimately are unsuccessful could result in expenditures of funds in connection with litigation and divert management's time and other resources.

Our products must interoperate with operating systems, software applications and hardware, and comply with industry standards, that are developed by others, and if we are unable to devote the necessary resources for

our products to interoperate with such software and hardware and comply with such standards, we may lose or fail to increase market share and experience a weakening demand for our products.

Generally, our products comprise only a part of and must interoperate with our customers' existing infrastructure, specifically their networks, servers, software and operating systems, which may be manufactured by a wide variety of vendors and original equipment manufacturers. Our products must also comply with industry standards, such as Data Over Cable Service Interface Specification, or DOCSIS, 3.0 and 3.1, which are established by third parties, in order to interoperate with such servers, storage, software and other networking equipment such that all systems function efficiently together. We may depend on other vendors to support prevailing industry standards. Also, some industry standards may not be widely adopted or implemented uniformly, and competing standards and other approaches may emerge that may be preferred by our customers.

In addition, when new or updated versions of these industry standards, software systems or applications are introduced, we must sometimes develop updated versions of our software so that our products will interoperate properly. We may not accomplish these development efforts quickly, cost-effectively or at all. These development efforts require capital investment and the devotion of engineering resources. If we fail to maintain compatibility with these systems and applications, our customers may not be able to adequately utilize our products, and we may lose or fail to increase market share and experience a weakening in demand for our products, among other consequences, which could materially adversely affect our business, financial condition, results of operations and prospects.

Our ability to sell our products is highly dependent on the quality of our support and services offerings, and our failure to offer high-quality support and services could have a material adverse effect on our business, financial condition, results of operations and prospects.

Once our products are deployed within our customers' networks, our customers depend on our support organization to resolve any issues relating to our products. Our provision of high-quality support is critical for the successful marketing and sale of our products. If we do not assist our customers in deploying our products effectively, do not succeed in helping our customers resolve post-deployment issues quickly or do not provide adequate ongoing support, it could adversely affect our ability to sell our products to existing customers and could harm our reputation with potential customers. In addition, our standard sales contracts require us to provide minimum service requirements to our customers on an ongoing basis and our failure to satisfy these requirements could expose us to claims under these contracts. Our failure to maintain high-quality support and services, including compliance with our contractual minimum service obligations, could have a material adverse effect on our business, financial condition, results of operations and prospects.

We base our inventory requirements on our forecasts of future sales. If these forecasts are materially inaccurate, we may procure inventory that we may be unable to use in a timely manner or at all.

We and our contract manufacturers procure components and build our products based on our forecasts. These forecasts are based on estimates of future demand for our products, which are in turn based on historical trends and analyses from our sales and marketing organizations, adjusted for overall market conditions. To the extent our forecasts are materially inaccurate or if we otherwise do not need such inventory, we may under- or over-procure inventory, and such inaccuracies in our forecasts could subject us to contractual damages and otherwise materially adversely affect our business, financial condition, results of operations and prospects.

Because we depend on third-party manufacturers to build our hardware, we are susceptible to manufacturing delays and pricing fluctuations that could prevent us from delivering customer orders on time, if at all, or on a cost-effective basis, which may result in the loss of sales and customers.

We depend on third-party contract manufacturers to manufacture our product hardware. A significant portion of our cost of revenue consists of payments to these third-party contract manufacturers. Our reliance on

these third-party contract manufacturers reduces our control over the manufacturing process, quality assurance, product costs and product supply and timing, which exposes us to risk. To the extent that our products are manufactured at facilities in foreign countries, we may be subject to additional risks associated with complying with local rules and regulations in those jurisdictions. If we are unable to manage our relationships with our third-party contract manufacturers effectively, or if these third-party manufacturers suffer delays or disruptions for any reason, experience increased manufacturing lead times, capacity constraints or quality control problems in their manufacturing operations or fail to meet our future requirements for timely delivery, our ability to ship products to our customers would be severely impaired, and our business, financial condition, results of operations and prospects could be materially adversely affected.

Our contract manufacturers typically fulfill our supply requirements on the basis of individual orders. We do not have long-term contracts with our third-party manufacturers that guarantee capacity, the continuation of particular pricing terms or the extension of credit limits. Accordingly, they are not obligated to continue to fulfill our supply requirements, which could result in supply shortages, and increases in the prices for manufacturing services on short notice. We may not be able to develop alternate contract manufacturers in a timely manner, or at all. If we add or change contract manufacturers, or change any manufacturing plant locations within a contract manufacturer network, we would add additional complexity and risk to our supply chain management.

In addition, we may be subject to significant challenges in ensuring that quality, processes and costs, among other issues, are consistent with our expectations and those of our customers. A new contract manufacturer or manufacturing location may not be able to scale its production of our products at the volumes or quality we require. This could also adversely affect our ability to meet our scheduled product deliveries to our customers, which could damage our customer relationships and cause the loss of sales to existing or potential customers, late delivery penalties, delayed revenue or an increase in our costs which could adversely affect our gross margins. This could also result in increased levels of inventory subjecting us to increased excess and obsolete charges that could have a negative impact on our results of operations.

Because some of the key components in our products come from limited sources of supply, we are susceptible to supply shortages or supply changes, which could disrupt or delay our scheduled product deliveries to our customers and may result in the loss of sales and customers.

Our products rely on key components that our contract manufacturers purchase on our behalf from a limited number of suppliers, including Altera, Analog Devices, Bell Power, Broadcom, Maxim, Mini-Circuits, Qorvo, TTM Technologies and Xilinx. We do not have guaranteed supply contracts with any of our component suppliers, and our suppliers could delay shipments or cease manufacturing such products or selling them to us at any time. The development of alternate sources for those components is time-consuming, difficult and costly. If we are unable to obtain a sufficient quantity of these components on commercially reasonable terms or in a timely manner, sales of our products could be delayed or halted entirely or we may be required to redesign our products. Any of these events could result in lost sales and damage to our customer relationships, which would adversely impact our business, financial condition, results of operations and prospects. In the event of a shortage or supply interruption from our component suppliers, we may not be able to develop alternate or second sources in a timely manner, on commercially reasonable terms or at all. In addition, certain of our customer contracts require us to notify our customers of any discontinuation of the products that we supply to them and to provide support for discontinued products, and lack of supply from our suppliers could leave us unable to fulfill our customer support obligations. Adverse changes to our relationships with our sole suppliers could result in lost sales and damage to our customer relationships, which would adversely impact our business, financial condition, results of operations and prospects.

We rely on resellers and sales agents to sell our products into certain international markets, and the loss of such resellers and sales agents could delay or harm our ability to deliver our products to our customers.

We rely upon resellers and sales agents to coordinate sales and distribution of our products in certain international markets. We provide our resellers and sales agents with specific training and programs to assist

them in selling our products, but these steps may not be effective. In addition, our resellers and sales agents may be unsuccessful in marketing, selling and supporting our products and services. If we are unable to develop and maintain effective sales incentive programs for our resellers and sales agents, we may not be able to incentivize these resellers and sales agents to sell our products to customers. Any of our resellers and sales agents could elect to consolidate or enter into a strategic partnership with one of our competitors, which could reduce or eliminate our future opportunities with that reseller or sales agent. Our agreements with our resellers and sales agents may generally be terminated for any reason by either party with advance notice. We may be unable to retain these resellers and sales agents or secure additional or replacement resellers and sales agents. The replacement of one or more of our significant resellers or sales agents requires extensive training, and any new or expanded relationship with a reseller or sales agent may take several months or more to achieve productivity. Any of these events could materially adversely affect our business, financial condition, results of operations and prospects.

Our business and operations have experienced rapid growth in recent years, and if we do not appropriately manage any future growth or are unable to improve our systems and processes, our business, financial condition, results of operations and prospects will be adversely affected.

We have experienced rapid growth and increased demand for our products in recent years, which have placed a strain on our management, administrative, operational and financial infrastructure. For example, our revenue increased from \$272.5 million for the year ended December 31, 2015 to \$316.1 million for the year ended December 31, 2016 and to \$351.6 million for the year ended December 31, 2017. To handle this growth and increase in demand, we have significantly expanded our headcount, from 481 as of December 31, 2015 to 604 as of December 31, 2016 and to 680 as of December 31, 2017, and we expect to continue to increase our headcount. As we have grown, we have had to manage an increasingly larger and more complex array of internal systems and processes to scale with all aspects of our business, including our software development, contract manufacturing and purchasing, logistics and fulfillment and sales, maintenance and support. Our success will depend in part upon our ability to manage our growth effectively. To do so, we must continue to increase the productivity of our existing employees and continue to hire, train and manage new employees as needed. To manage domestic and international growth of our operations and personnel, we will need to continue to improve our operational, financial and management controls and our reporting processes and procedures and implement more extensive and integrated financial and business information systems. We may not be able to successfully implement these or other improvements to our systems and processes in an efficient or timely manner, and we may discover deficiencies in their capabilities or effectiveness. Our failure to improve our systems and processes, or their failure to operate effectively and in the intended manner, may result in disruption of our current operations and customer relationships, our inability to manage the growth of our business and our inability to accurately forecast our revenue, expenses and earnings.

If we are unable to hire, retain, train and motivate qualified personnel and senior management, including in particular our founders, our business, financial condition, results of operations and prospects could be adversely affected.

Our future success depends, in part, on our ability to continue to attract and retain highly skilled personnel, particularly software engineering and sales personnel. Competition for highly skilled personnel is often intense, particularly in the greater Boston region where we are headquartered, and we may not be able to attract and retain the highly skilled employees that we need to support our business. Many of the companies with which we compete for experienced personnel have greater resources than we have to provide more attractive compensation packages and other amenities. Research and development personnel are aggressively recruited by startup and growth companies, which are especially active in many of the technical areas and geographic regions in which we conduct product development. In addition, in making employment decisions, particularly in the high-technology industry, job candidates often consider the value of the stock-based compensation they are to receive in connection with their employment. Declines in the market price of our stock could adversely affect our ability to attract, motivate or retain key employees. If we are unable to attract or retain qualified personnel, or if there are delays in hiring required personnel, our business, financial condition, results of operations and prospects could be materially adversely affected.

Also, to the extent we hire personnel from competitors, or from certain customers or other third parties whose employees we have agreed not to solicit, we may be subject to allegations that such personnel have been improperly solicited, that such personnel have divulged proprietary or other confidential information or that former employers own certain inventions or other work product. Such claims could result in litigation.

Our future performance also depends on the continued services and continuing contributions of our founders and senior management to execute our business plan and to identify and pursue new opportunities and product innovations. Our employment arrangements with our employees do not require that they continue to work for us for any specified period, and therefore, they could terminate their employment with us at any time. In particular, the loss of Jerry Guo, our President and Chief Executive Officer, and Weidong Chen, our Chief Technology Officer, could have a material adverse impact on our business. Further, the loss of other members of our senior management team, sales and marketing team or engineering team, or any difficulty attracting or retaining other highly qualified personnel in the future, could significantly delay or prevent the achievement of our development and strategic objectives, which could materially adversely affect our business, financial condition, results of operations and prospects. Except with respect to Mr. Guo, we do not maintain “key person” life insurance on our officers, directors or key employees.

If we do not effectively expand and train our direct sales force, we may be unable to increase sales to our existing customers or add new customers, and our business will be adversely affected.

We depend on our direct sales force to increase sales with existing customers and to obtain new customers. As such, we have invested and will continue to invest substantially in our sales organization. In recent periods, we have been adding personnel to our sales function as we focus on growing our business, entering new markets and increasing our market share, and we expect to incur significant additional expenses in expanding our sales personnel in order to achieve revenue growth. There is significant competition for sales personnel with the skills and technical knowledge that we require. Our ability to achieve significant revenue growth will depend, in large part, on our success in recruiting, training, retaining and integrating sufficient numbers of sales personnel to support our growth, particularly in international markets. In addition, we have significantly increased the number of personnel in our sales and marketing departments in recent periods, with headcount growing from 94 as of December 31, 2015 to 114 as of December 31, 2016 and to 122 as of December 31, 2017. New hires require significant training and may take significant time before they achieve full productivity. Our recent hires and planned hires may not become productive as quickly as we expect, and we may be unable to hire, retain or integrate into our corporate culture sufficient numbers of qualified individuals in the markets where we do business or plan to do business. If we are unable to hire, integrate and train a sufficient number of effective sales personnel, or the sales personnel we hire are not successful in obtaining new customers or increasing sales to our existing customer base, our business, financial condition, results of operations and prospects could be materially adversely affected.

Adverse economic conditions or reduced broadband infrastructure spending may adversely affect our business, financial condition, results of operations and prospects.

Our business depends on the overall demand for broadband connectivity. Weak domestic or global economic conditions, fear or anticipation of such conditions or a reduction in broadband infrastructure spending even if economic conditions improve, could materially adversely affect our business, financial condition, results of operations and prospects in a number of ways, including longer sales cycles, lower prices for our products and services, reduced sales and lower or no growth. Continued turmoil in the geopolitical environment in many parts of the world may also affect the overall demand for our products and services. Deterioration in global economic or political conditions could materially adversely affect our business, financial condition, results of operations and prospects in the future. A prolonged period of economic uncertainty or a downturn may also significantly affect the availability of capital and the terms and conditions of financing arrangements, including the overall cost of financing as well as the financial health or creditworthiness of our customers. Circumstances may arise in which we need, or desire, to raise additional capital, and such capital may not be available on commercially reasonable terms, or at all.

Breaches of our cybersecurity systems and measures could degrade our ability to conduct our business operations and deliver products and services to our customers, delay our ability to recognize revenue, compromise the integrity of our products, result in significant data losses and the theft of our intellectual property, damage our reputation, expose us to liability to third parties and require us to incur significant additional costs to maintain the security of our networks and data.

We increasingly depend upon our IT systems to conduct virtually all of our business operations, ranging from our internal operations and product development activities to our marketing and sales efforts and communications with our customers and business partners. Certain persons and entities may attempt to penetrate our network and systems, or of the systems hosting our website, and may otherwise seek to misappropriate our proprietary or confidential information or cause interruptions of our service. Because the techniques used by such persons and entities to access or sabotage networks and systems change frequently and may not be recognized until launched against a target, we may be unable to anticipate these techniques. We have also outsourced a number of our business functions to third-parties, including our manufacturers and logistics providers, and our business operations also depend, in part, on the success of these third parties' own cybersecurity measures. Additionally, we depend upon our employees and independent contractors to appropriately handle confidential data and deploy our IT resources in a safe and secure fashion that does not expose our network systems to security breaches and the loss of data. Accordingly, if any of our cybersecurity systems, processes or policies, or those of any of our manufacturers, logistics providers, customers or independent contractors fail to protect against unauthorized access, sophisticated hacking or terrorism and the mishandling, misuse, or misappropriation of data by employees, contractors or other persons or entities, our ability to conduct our business effectively could be damaged in a number of ways, including:

- sensitive data regarding our business, including intellectual property, personal information and other confidential and proprietary data, could be stolen;
- our electronic communications systems, including email and other methods, could be disrupted, and our ability to conduct our business operations could be seriously damaged until such systems can be restored;
- our ability to process customer orders and electronically deliver products and services could be degraded, and our distribution channels could be disrupted, resulting in delays in revenue recognition, damage to our relationships with customers and prospective customers and damage to our reputation;
- defects and security vulnerabilities could be introduced into our software, products, network and systems, thereby damaging our reputation and perceived reliability and security of our products and potentially making the systems of our customers vulnerable to data loss and cyber incidents; and
- personally identifiable data relating to various parties, including end users, employees and business partners could be compromised.

Should any of the above events occur, we could be subject to significant claims for liability from our customers, employees or others and regulatory investigations or actions from governmental agencies. In addition, our ability to protect our intellectual property rights could be compromised and our reputation and competitive position could be significantly harmed. Any regulatory, contractual or other actions, litigations, investigations, fines, penalties and liabilities relating to any actual or alleged misuse or misappropriation of personal data or other confidential or proprietary information could be significant in terms of monetary exposure and reputational impact and necessitate changes to our business operations that may be disruptive to us. Additionally, we could incur significant costs in order to upgrade our cybersecurity systems, processes, policies and procedures and remediate damages. Consequently, our financial performance and results of operations could be materially adversely affected.

If we are unable to obtain, maintain or protect our intellectual property rights, our competitive position could be harmed or we could be required to incur significant expenses to enforce our rights.

Our success depends, in part, on our ability to protect our proprietary technology. We rely on trade secret, patent, copyright and trademark laws and confidentiality agreements with employees and third parties to protect and enforce our rights to our proprietary technology, all of which offer only limited protection.

In order to protect our proprietary information, we rely in significant part on confidentiality arrangements with our employees, licensees, independent contractors, advisers and customers. These arrangements may not be effective to prevent disclosure of confidential information, including trade secrets, and may not provide an adequate remedy in the event of unauthorized disclosure of confidential information. In addition, if others independently discover our trade secrets, we would not be able to assert trade secret rights against such parties. Effective trade secret protection may not be available in every country in which our services are available or where we have employees or independent contractors. The loss or unavailability of trade secret protection could make it easier for third parties to compete with our products by copying functionality. In addition, any changes in, or unexpected interpretations of, the trade secret and employment laws in any country in which we operate may compromise our ability to enforce our intellectual property rights. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

We also rely on patents to protect certain aspects of our proprietary technology in the United States. The process of obtaining patent protection is expensive and time-consuming, and we may not be able to prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. We may choose not to seek patent protection for certain innovations and may choose not to pursue patent protection in certain jurisdictions. Further, we cannot guarantee that any of our pending patent applications will result in the issuance of patents or that any patents that do issue from such applications will have adequate scope to provide us with a competitive advantage. There is no assurance that all potentially relevant prior art relating to our patents and patent applications has been found. To the extent that additional patents are issued from our patent applications, which is not certain, third parties may challenge their validity, enforceability or scope, which may result in such patents being narrowed or invalidated. If third parties have prepared and filed patent applications in the United States that also claim technology to which we have rights, we may have to participate in interference proceedings in the United States Patent and Trademark Office to determine priority of invention for patent applications filed before March 16, 2013, or in derivation proceedings to determine inventorship for patent applications filed after such date. In addition, patents have a limited lifespan. In the United States, the natural expiration of a patent is generally 20 years after its effective filing date. Even if patents covering our products are obtained by us or by our licensors, once such patents expire, we may be vulnerable to competition from similar products. Moreover, the rights granted under any issued patents may not provide us with adequate protection or competitive advantages, and, as with any technology, competitors may be able to develop similar or superior technologies to our own now or in the future.

Despite our efforts, the steps we have taken to protect our proprietary rights may not be adequate to preclude misappropriation of our proprietary information or infringement of our intellectual property rights, and our ability to police such misappropriation or infringement is uncertain, particularly in countries outside of the United States. Competitors may use our technologies in jurisdictions where we have not obtained or are unable to adequately enforce intellectual property protection to develop their own products. We are also restricted from asserting our intellectual property rights against certain customers under our contracts with them.

Detecting and protecting against the unauthorized use of our products, technology and proprietary rights is expensive, difficult and, in some cases, impossible. Litigation may be necessary in the future to enforce or defend our intellectual property rights, to protect our trade secrets or to determine the validity and scope of the proprietary rights of others. Such litigation could result in substantial costs and diversion of management resources, either of which could materially adversely affect our business, financial condition, results of

operations and prospects, and there is no guarantee that we would be successful. Furthermore, many of our current and potential competitors have the ability to dedicate substantially greater resources to protecting their technology or intellectual property rights than we do. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating our intellectual property, which could result in a substantial loss of our market share. Even if we did succeed in enforcing our intellectual property through litigation, this may be costly and divert management resources.

Finally, certain of our license agreements with our third-party licensors provide for joint ownership of developments or inventions that we create that are related to the subject matter of the license. Other agreements to which we are subject, including member agreements with standards bodies and research and development consortia, may require us to disclose and/or grant licenses to technology that is related to the subject matter of the standards body or the consortium and included in our contributions to specifications established by these bodies. These agreements could result in third parties having ownership or license rights to important intellectual property that we otherwise may have elected to maintain exclusive ownership of.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

We have not applied for trademark registration for our name and logo in all geographic markets. In those markets where we have applied for trademark registration, failure to secure those registrations could adversely affect our ability to enforce and defend our trademark rights and result in indemnification claims. Our registered or unregistered trademarks or trade names, as well as the registered or unregistered trademarks or trade names used by our resellers or distributors associated with our products, may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. Any claim of infringement by a third party, even those claims without merit, could cause us to incur substantial costs defending against such claim, could divert management attention from our business and could require us to cease use of such intellectual property in certain geographic markets. Over the long term, if we, or our resellers or distributors, are unable to establish name recognition based on our trademarks and trade names, then our business may be adversely affected.

Assertions by third parties of infringement or other violations by us of their intellectual property rights, or other lawsuits asserted against us, could result in significant costs and materially adversely affect our business, financial condition, results of operations and prospects.

Patent and other intellectual property disputes are common in the broadband infrastructure industry and have resulted in protracted and expensive litigation for many companies. Many companies in the broadband infrastructure industry, including our competitors and other third parties, as well as non-practicing entities, own large numbers of patents, copyrights, trademarks and trade secrets, which they may use to assert claims of patent infringement, misappropriation or other violations of intellectual property rights against us. From time to time, they have or may in the future also assert such claims against our customers whom we typically indemnify against claims that our products infringe, misappropriate or otherwise violate the intellectual property rights of third parties.

As the number of products and competitors in our market increases and overlaps occur, claims of infringement, misappropriation and other violations of intellectual property rights may increase. Any claim of infringement, misappropriation or other violations of intellectual property rights by a third party, even those without merit, could cause us to incur substantial costs defending against the claim, distract our management from our business and require us to cease use of such intellectual property, which may impact important elements of our business. In addition, some claims for patent infringement may relate to subcomponents that we purchase from third parties. If these third parties are unable or unwilling to indemnify us for these claims, we could be substantially harmed.

The patent portfolios of most of our competitors are larger than ours. This disparity may increase the risk that our competitors may sue us for patent infringement and may limit our ability to counterclaim for patent

infringement or settle through patent cross-licenses. In addition, future assertions of patent rights by third parties, and any resulting litigation, may involve patent holding companies or other adverse patent owners who have no relevant product revenue and against whom our own patents may therefore provide little or no deterrence or protection. We cannot guarantee that we are not infringing or otherwise violating any third-party intellectual property rights.

The third-party asserters of intellectual property claims may be unreasonable in their demands, or may simply refuse to settle, which could lead to expensive settlement payments, prolonged periods of litigation and related expenses, additional burdens on employees or other resources, distraction from our business, supply stoppages and lost sales. Moreover, in recent years, individuals and groups that are non-practicing entities, commonly referred to as “patent trolls,” have purchased patents and other intellectual property assets for the purpose of making claims of infringement in order to extract settlements. In the past, we have received threatening letters or notices and have been the subject of claims that our solutions and underlying technology infringe or violate the intellectual property rights of others. Responding to such claims, regardless of their merit, can be time-consuming, costly to defend in litigation, divert management’s attention and resources, damage our reputation and brand, and cause us to incur significant expenses.

An adverse outcome of a dispute may require us to pay substantial damages including treble damages if we are found to have willfully infringed a third party’s patents; cease making, licensing or using solutions that are alleged to infringe or misappropriate the intellectual property of others; expend additional development resources to attempt to redesign our products or services or otherwise to develop non-infringing technology, which may not be successful; enter into potentially unfavorable royalty or license agreements in order to obtain the right to use necessary technologies or intellectual property rights; and indemnify our partners and other third parties. Any damages or royalty obligations we may become subject to as a result of an adverse outcome, and any third-party indemnity we may need to provide, could materially adversely affect our business, financial condition, results of operations and prospects. Royalty or licensing agreements, if required or desirable, may be unavailable on terms acceptable to us, or at all, and may require significant royalty payments and other expenditures. Further, there is little or no information publicly available concerning market or fair values for license fees, which can lead to overpayment of license or settlement fees. In addition, some licenses may be non-exclusive, and therefore our competitors may have access to the same technology licensed to us. Suppliers subject to third-party intellectual property claims also may choose or be forced to discontinue or alter their arrangements with us, with little or no advance notice to us. Any of these events could materially adversely affect our business, financial condition, results of operations and prospects.

Unavailability, termination or breach of licenses to third-party software and other intellectual property could materially harm our business.

Many of our products and services include software or other intellectual property licensed from third parties, and we otherwise use software and other intellectual property licensed from third parties in our business. We exercise no control over our third-party licensors, and the failure or unsuitability of their software or other intellectual property exposes us to risks that we will have little ability to control. For example, a licensor may have difficulties keeping up with technological changes or may stop supporting the software or other intellectual property that it licenses to us; our licensors may also have the ability to terminate our licenses if the licensed technology becomes the subject of a claim of intellectual property infringement. Also, it will be necessary in the future to renew licenses, expand the scope of existing licenses or seek new licenses, relating to various aspects of these products and services or otherwise relating to our business, which may result in increased license fees. Any new licenses may not be available on acceptable terms, if at all. In addition, a third party may assert that we or our customers are in breach of the terms of a license, which could, among other things, give such third party the right to terminate a license or seek damages from us, or both. The inability to obtain or maintain certain licenses or other rights or to obtain or maintain such licenses or rights on favorable terms, or the need to engage in litigation regarding these matters, could result in delays in releases of products and services and could otherwise disrupt our business, until equivalent technology can be identified, licensed or developed, if at all, and integrated

into our products and services or otherwise in the conduct of our business. Moreover, the inclusion in our products and services of software or other intellectual property licensed from third parties on a nonexclusive basis may limit our ability to differentiate our products from those of our competitors. Any of these events could have a material adverse effect on our business, financial condition, results of operations and prospects.

Our products contain third-party open source software components, and failure to comply with the terms of the underlying open source software licenses could restrict our ability to sell our products.

Our products contain software modules licensed to us by third-party authors under “open source” licenses. Use and distribution of open source software may entail greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code. Some open source licenses contain requirements that we make available source code for modifications or derivative works we create based upon the type of open source software that we use. If we combine our software with open source software in a certain manner, we could, under certain open source licenses, be required to release portions of the source code of our software to the public. This would allow our competitors to create similar products with lower development effort and time and ultimately could result in a loss of product sales for us.

Although we monitor our use of open source software to avoid subjecting our products to undesirable conditions, we do not have a formal open source policy in place that gives our developers written guidance on what open source licenses we deem “safe.” Further, even where we believe an open source license may have acceptable conditions, the terms of many open source licenses have not been interpreted by U.S. courts, and these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our products. Moreover, we cannot assure you that our informal processes for controlling our use of open source software in our products will be effective or that our compliance with open source licenses, including notice and attribution requirements, are adequate. If we are held to have breached the terms of an open source software license, we could be required to seek licenses from third parties to continue offering our products on terms that are not economically feasible, to re-engineer our products, to discontinue the sale of our products if re-engineering could not be accomplished on a timely or commercially reasonable basis or to make generally available, in source code form, our proprietary code. We also could face infringement claims. Any of the foregoing could materially adversely affect our business, financial condition, results of operations and prospects.

Our failure to adequately protect personal data and to comply with related laws and regulations could result in material liability.

A wide variety of provincial, state, national, foreign, and international laws and regulations apply to the collection, use, retention, protection, disclosure, transfer (including across national boundaries), and other processing of personal data. These data protection and privacy-related laws and regulations are evolving and being tested in courts and may result in ever-increasing regulatory and public scrutiny and escalating levels of enforcement and sanctions.

Any failure by us to comply with applicable laws and regulations, or to protect such data, could result in enforcement action against us, including fines, imprisonment of company officials, public censure, claims for damages by end customers and other affected persons and entities, damage to our reputation and loss of goodwill, and other forms of injunctive or operations-limiting relief, any of which could have a material adverse effect on our operations, financial performance, and business.

Definitions of personal data and personal information, and requirements relating to the same under applicable laws and regulations within the European Union, the United States, and elsewhere, change frequently and are subject to new and different interpretations by courts and regulators. Because the interpretation and application of laws and other obligations relating to privacy and data protection are uncertain, it is possible that existing or future laws, regulations, and other obligations may be interpreted and applied in a manner that is

inconsistent with our data management practices. We may be required to expend significant resources to modify our products and otherwise adapt to these changes, which we may be unable to do on commercially reasonable terms or at all, and our ability to develop new products and features could be limited. These developments could harm our business, financial condition and results of operations. Even if not subject to legal challenge, the perception of privacy concerns, whether or not valid, may harm our reputation and inhibit adoption of our products by current and prospective customers.

Failure to comply with governmental laws and regulations could materially adversely affect our business, financial condition, results of operations and prospects.

Our business is subject to regulation by various federal, state, local and foreign governmental agencies, including agencies responsible for monitoring and enforcing employment and labor laws, workplace safety, product safety, environmental laws, consumer protection laws, anti-bribery laws, import/export controls, federal securities laws and tax laws and regulations. In certain jurisdictions, these regulatory requirements may be more stringent than those in the United States. From time to time, we may receive inquiries from such governmental agencies or we may make voluntary disclosures regarding our compliance with applicable governmental regulations or requirements. Noncompliance with applicable government regulations or requirements could subject us to sanctions, mandatory product recalls, enforcement actions, disgorgement of profits, fines, damages, civil and criminal penalties or injunctions. If any governmental sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, financial condition, results of operations and prospects could be materially adversely affected. In addition, responding to any action will likely result in a significant diversion of management's attention and resources and an increase in professional fees. Enforcement actions and sanctions could materially adversely affect our business, financial condition, results of operations and prospects.

We may invest in or acquire other businesses, which could require significant management attention, disrupt our business, dilute stockholder value and adversely affect our business, financial condition, results of operations and prospects.

As part of our growth strategy, we may make investments in or acquire complementary companies, products or technologies. We do not have experience in making investments in other companies nor have we made any acquisitions to date, and as a result, our ability as an organization to evaluate and/or complete investments or acquire and integrate other companies, products or technologies in a successful manner is unproven. We may not be able to find suitable investment or acquisition candidates, and we may not be able to complete such investments or acquisitions on favorable terms, if at all. If we do complete investments or acquisitions, we may not ultimately strengthen our competitive position or achieve our goals, and any investments or acquisitions we complete could be viewed negatively by our customers, investors and securities analysts.

In addition, investments and acquisitions may result in unforeseen operating difficulties and expenditures. For example, if we are unsuccessful at integrating any acquisitions or retaining key talent from those acquisitions, or the technologies associated with such acquisitions, into our company, the business, financial condition, results of operations and prospects of the combined company could be materially adversely affected. Any integration process may require significant time and resources, and we may not be able to manage the process successfully. We may not successfully evaluate or utilize the acquired technology or personnel or accurately forecast the financial effects of an acquisition transaction, including accounting charges. We may have to pay cash, incur debt or issue equity securities to pay for any such investment or acquisition, each of which could adversely affect our financial condition or the market price of our common stock. The sale of equity or issuance of debt to finance any such acquisitions could result in dilution to our stockholders. The incurrence of indebtedness would result in increased fixed obligations and could also include covenants or other restrictions that would impede our ability to manage our operations. Moreover, if the investment or acquisition becomes impaired, we may be required to take an impairment charge, which could adversely affect our financial condition or the market price of our common stock.

Our international operations may give rise to potentially adverse tax consequences.

We are expanding our international operations and staff to better support our growth into the international markets. We generally conduct our international operations through wholly owned subsidiaries and report our taxable income in various jurisdictions worldwide based upon our business operations in those jurisdictions. Our corporate structure and associated transfer pricing policies contemplate the business flows and future growth into the international markets, and consider the functions, risks and assets of the various entities involved in the intercompany transactions. The amount of taxes we pay in different jurisdictions may depend on the application of the tax laws of the various jurisdictions, including the United States, to our international business activities, changes in tax rates, new or revised tax laws or interpretations of existing tax laws and policies and our ability to operate our business in a manner consistent with our corporate structure and intercompany arrangements. The taxing authorities of the jurisdictions in which we operate may challenge our methodologies for pricing intercompany transactions, which are required to be computed on an arm's-length basis pursuant to the intercompany arrangements or disagree with our determinations as to the income and expenses attributable to specific jurisdictions. If such a challenge or disagreement were to occur, and our position was not sustained, we could be required to pay additional taxes, interest and penalties, which could result in one-time tax charges, higher effective tax rates, reduced cash flows and lower overall profitability of our operations. Our financial statements could fail to reflect adequate reserves to cover such a contingency.

On December 22, 2017, the President signed into law new U.S. federal income tax legislation that contains significant changes to corporate taxation, including the transition of U.S. international taxation to a modified territorial system and the imposition of a one-time transition tax on a deemed repatriation of certain foreign earnings and profits. The overall impact of this new legislation is uncertain, and our business and financial condition could be adversely affected. In addition, further changes in the tax laws of foreign jurisdictions could arise, including as a result of the base erosion and profit shifting project undertaken by the Organisation for Economic Co-operation and Development, or the OECD. The OECD, which represents a coalition of member countries, has issued recommendations that, in some cases, make substantial changes to numerous long-standing tax positions and principles; many of these changes have been adopted or are under active consideration by OECD members and/or other countries.

Recent changes to the U.S. tax laws impact the tax treatment of foreign earnings by, among other things, creating limits on the ability of taxpayers to claim and utilize foreign tax credits, imposing minimum effective rates of current tax on certain classes of foreign income, and imposing additional taxes in connection with specified payments to related foreign recipients. We are unable to determine at this time what effect such changes, or others that may be enacted in the future, may have on our business. Due to our existing, and anticipated expansion of, our international business activities, any changes in the U.S. or foreign taxation of such activities may increase our worldwide effective tax rate and adversely affect our financial condition and operating results.

Taxing authorities may successfully assert that we should have collected or in the future should collect sales and use, value added or similar taxes, and we could be subject to liability with respect to past or future sales, which could adversely affect our operating results.

We do not collect sales and use, value added or similar taxes in all jurisdictions in which we have sales, and we have been advised that such taxes are not applicable to our products and services in certain jurisdictions. Sales and use, value added and similar tax laws and rates vary greatly by jurisdiction. Certain jurisdictions in which we do not collect such taxes may assert that such taxes are applicable, which could result in tax assessments, penalties and interest, to us or our end-customers for the past amounts, and we may be required to collect such taxes in the future. If we are unsuccessful in collecting such taxes from our end-customers, we could be held liable for such costs. Such tax assessments, penalties and interest, or future requirements may adversely affect our operating results.

If we needed to raise additional capital to expand our operations and invest in new products, our failure to do so on favorable terms could reduce our ability to compete and could materially adversely affect our business, financial condition, results of operations and prospects.

We expect that our existing cash and cash equivalents will be sufficient to meet our anticipated cash needs for at least the next 12 months. However, if we need to raise additional funds to expand our operations and invest in new products, we may not be able to obtain additional debt or equity financing on favorable terms, if at all. If we raise additional equity financing, our stockholders may experience significant dilution of their ownership interests, and the market price of our common stock could decline.

Our business is subject to the risks of fire, power outages, floods and other catastrophic events and to interruption by manmade problems such as terrorism.

Our corporate headquarters and the operations of our key manufacturing vendors, as well as many of our customers, are located in areas exposed to risks of natural disasters such as fires and floods. A significant natural disaster, such as a fire, flood or other catastrophic events such as a disease outbreak, could have a material adverse effect on our or their business, which could in turn materially adversely affect our business, financial condition, results of operations and prospects. For example, in the event our manufacturing or logistics abilities are hindered by any of the events discussed above, shipments could be delayed, which could result in missed financial targets, such as revenue and shipment targets, for a particular quarter. Further, if a natural disaster occurs in a region from which we derive a significant portion of our revenue, customers in that region may delay or forego purchases of our products, which could materially adversely affect our business, financial condition, results of operations and prospects. In addition, acts of terrorism could cause disruptions in our business or the business of our manufacturers, logistics providers, partners or customers or the economy as a whole. All of the aforementioned risks may be compounded if our disaster recovery plans and those of our manufacturers, logistics providers or partners prove to be inadequate. To the extent that any of the above results in delays or cancellations of customer orders, or delays in the manufacture, deployment or shipment of our products, our business, financial condition, results of operations and prospects would be adversely affected.

Regulations affecting broadband infrastructure could reduce demand for our products.

Laws and regulations governing the Internet and electronic commerce are emerging but remain largely unsettled, even in the areas where there has been some legislative action. Regulations may focus on, among other things, assessing access or settlement charges, or imposing tariffs or regulations based on the characteristics and quality of products, either of which could restrict our business or increase our cost of doing business. Government regulatory policies are likely to continue to have a major impact on the pricing of existing and new network services and, therefore, are expected to affect demand for those services and the communications products, including our products, supporting those services.

Any changes to existing laws or the adoption of new regulations by federal or state regulatory authorities or any legal challenges to existing laws or regulations affecting IP networks could materially adversely affect the market for our products. Moreover, customers may require us, or we may otherwise deem it necessary or advisable, to alter our products to address actual or anticipated changes in the regulatory environment. Our inability to alter our products or address any regulatory changes could have a material adverse effect on our consolidated financial position, results of operations or cash flows.

We have outstanding debt that could limit our ability to make expenditures and investments in the conduct of our business and adversely impact our ability to obtain future financing.

We have outstanding debt. We may be unable to generate cash sufficient to pay when due the principal of, interest on or other amounts due in respect of our indebtedness. We may be required to dedicate significant cash flows from operations to make such payments, which could limit our ability to make other expenditures and

investments in the conduct of our business. Our indebtedness may also reduce our flexibility in planning for or reacting to changes in our business and market conditions. Our indebtedness also exposes us to interest rate risk, since our debt obligations generally bear interest at variable rates. In addition, we may incur additional indebtedness in the future to meet future financing needs. If we add new debt, the risks described above could increase.

Our credit facility contains restrictive and financial covenants that may limit our operating flexibility.

Our credit facility contains certain restrictive covenants that either limit our ability to, or require a mandatory prepayment in the event we, incur additional indebtedness and liens, merge with other companies or consummate certain changes of control, acquire other companies, engage in new lines of business, change business locations, make certain investments, make any payments on any subordinated debt, transfer or dispose of assets, amend certain material agreements, and enter into various specified transactions. We, therefore, may not be able to engage in any of the foregoing transactions unless we obtain the consent of our lender or prepay the outstanding amount under the credit facility. The credit facility also contains certain financial covenants and financial reporting requirements. Our obligations under the credit facility are secured by substantially all of our assets, excluding intellectual property and investments in foreign subsidiaries. We may not be able to generate or sustain sufficient cash flow or sales to meet the financial covenants or pay the principal and interest under the credit facility. Furthermore, our future working capital, borrowings or equity financing could be unavailable to repay or refinance the amounts outstanding under the credit facility. In the event of a liquidation, our lender would be repaid all outstanding principal and interest prior to distribution of assets to unsecured creditors, and the holders of our common stock would receive a portion of any liquidation proceeds only if all of our creditors, including our lender, were first repaid in full.

Risks Related to Our Common Stock

Our results of operations are likely to vary significantly from period to period and be unpredictable. If we fail to meet the expectations of analysts or investors, the market price of our common stock could decline substantially.

Our results of operations have historically varied from period to period, and we expect that this trend will continue. As a result, you should not rely upon our past financial results for any period as indicators of future performance. Our results of operations in any given period can be influenced by a number of factors, many of which are outside of our control and may be difficult to predict, including the factors described above as well as:

- changes in our pricing policies, whether initiated by us or as a result of competition;
- the amount and timing of operating costs and capital expenditures related to the operation and expansion of our business;
- changes in the growth rate of the broadband services market;
- the actual or rumored timing and success of new product and service introductions by us or our competitors or any other change in the competitive landscape of our industry, including consolidation among our competitors or customers;
- our ability to successfully expand our business geographically;
- insolvency or credit difficulties confronting our customers, which could adversely affect their ability to purchase or pay for our products and services, or confronting our key suppliers, including our sole source suppliers, which could disrupt our supply chain;
- our inability to fulfill our customers' orders due to supply chain delays, access to key commodities or technologies or events that impact our manufacturers or their suppliers;
- the cost and possible outcomes of any potential litigation matters;
- our overall effective tax rate, including impacts caused by any changes in the valuation of our deferred tax assets and any new legislation or regulatory developments;

- increases or decreases in our expenses caused by fluctuations in foreign currency exchange rates; and
- general economic conditions, both domestically and in foreign markets.

Any one of the factors above or the cumulative effect of several of the factors described above may result in significant fluctuations in our financial and other results of operations. This variability and unpredictability could result in our failure to meet expectations of securities analysts or investors for a particular period. If we fail to meet or exceed such expectations for these or any other reasons, the market price of our common stock could decline substantially, and we could face costly lawsuits, including securities class action suits.

An active trading market for our common stock may not be sustained.

Our common stock began trading on the Nasdaq Global Select Market on December 15, 2017. Given the limited trading history of our common stock, there is a risk that an active trading market for our shares may not be sustained, which could put downward pressure on the market price of our common stock and thereby affect the ability of our stockholders to sell their shares at attractive prices, at the times that they would like to sell them, or at all.

The market price of our common stock may be volatile, which could result in substantial losses for investors.

The market price of our common stock could be subject to significant fluctuations. Some of the factors that may cause the market price of our common stock to fluctuate include:

- actual or anticipated changes in our earnings or fluctuations in our results of operations or in the expectations of securities analysts;
- price and volume fluctuations in the overall stock market from time to time;
- volatility in the market price and trading volume of comparable companies;
- announcements of technological innovations, new products, strategic alliances, or significant agreements by us or by competitive vendors;
- announcements by our customers regarding significant increases or decreases in capital expenditures;
- departure of key personnel;
- litigation involving us or that may be perceived as having an impact on our business;
- changes in general economic, industry and market conditions and trends;
- investors' general perception of us;
- sales of large blocks of our stock; and
- announcements regarding further industry consolidation.

In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has often been brought against that company. Because of the potential volatility of our stock price, we may become the target of securities litigation in the future. Securities litigation could result in substantial costs and divert management's attention and resources from our business.

We have broad discretion in the use of our cash reserves and may not use them effectively.

Subject to restrictions in the agreements governing our indebtedness, our management has broad discretion to use our cash reserves and could use our cash reserves in ways that do not improve our results of operations or enhance the value of our common stock. The failure by our management to apply these funds effectively could adversely affect our ability to operate and grow our business. Pending their use, we may invest our cash reserves in a manner that does not produce income or that loses value.

If securities or industry analysts cease publishing research or reports about us, our business or our market, or if they publish negative evaluations of our stock or the stock of other companies in our industry, the price of our stock and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts may publish about us, our business, our market or our competitors. If one or more of the industry analysts covering our business downgrade their evaluations of our stock or the stock of other companies in our industry, the price of our stock could decline. If one or more of these analysts cease to cover our stock, we could lose visibility in the market for our stock, which in turn could cause our stock price to decline.

Purchasers in this offering will incur immediate and substantial dilution in the book value of their investment.

If you invest in our common stock in this offering, your ownership interest will be immediately diluted to the extent of the difference between the public offering price per share of our common stock and the net tangible book value per share of our common stock. Our historical net tangible book value as of December 31, 2017 was \$50.2 million, or \$0.62 per share of common stock. The sale of shares of our common stock in this offering will have no effect on our net tangible book value. Our historical net tangible book value per share represents our total tangible assets less our total liabilities, divided by the number of shares of common stock outstanding as of December 31, 2017. To the extent outstanding options are exercised, you will incur further dilution.

Because we do not expect to declare any dividends on our common stock for the foreseeable future, investors in our common stock may never receive a return on their investment.

Although we declared special dividends on five occasions prior to our initial public offering, we do not anticipate that we will declare any cash dividends to holders of our common stock in the foreseeable future, and investors should not rely on an investment in our common stock to provide dividend income. Instead, we plan to retain any earnings to maintain and expand our existing operations. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any return on their investment. As a result, investors seeking cash dividends should not purchase our common stock.

Insiders have substantial control over us, which could limit your ability to influence the outcome of key transactions, including a change of control.

As of March 31, 2018, our directors, executive officers and 10% stockholders beneficially owned, in the aggregate, approximately 74.1% of our outstanding common stock, and after giving effect to their sale of 6,889,710 shares of common stock in this offering they will beneficially own approximately 66.0% of our outstanding common stock (assuming the underwriters do not exercise their option to purchase additional shares from the selling stockholders), as disclosed in the beneficial ownership table included in this prospectus. As a result, these stockholders could have significant influence over the outcome of matters submitted to our stockholders for approval, including the election of directors and any merger, consolidation or sale of all or substantially all of our assets, and over the management and affairs of our company. Some of these persons or entities may have interests different than yours and may cause us to pursue strategies that deviate from your interests.

A significant portion of our total outstanding shares may be sold into the public market in the near future, which could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a significant number of shares of our common stock in the public market could occur at any time after the expiration of the lock-up agreements that were executed in connection with the initial public offering of our common stock, which will occur at the end of the day on June 12, 2018. These sales, or the market perception that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. As of March 31, 2018, 75,247,146 shares, or 92.0% of our outstanding shares, were restricted as a result of

securities laws or lock-up agreements. In connection with this offering, Morgan Stanley & Co. LLC, on behalf of the underwriters for our initial public offering, has agreed to release the restrictions under the lock-up agreements that were executed in connection with our initial public offering with respect to:

- (i) up to the 8,452,500 shares of our common stock offered hereunder (including the underwriters' option to purchase additional shares) that are held by the selling stockholders in this offering, which includes shares beneficially owned by our directors and executive officers or entities with which they are affiliated; and
- (ii) up to an aggregate of 2,343,071 shares of our common stock currently outstanding or issuable upon exercise of currently outstanding vested options held by existing stockholders and optionholders that are party to the initial public offering lock-up agreements but are not participating in this offering, of which 1,664,657 shares of our common stock were outstanding as of March 31, 2018;

provided, however, that the release of shares of our common stock held by the selling stockholders is limited to the shares actually sold in this offering. The total number of shares released for the stockholders and optionholders not participating in this offering represents the same percentage of the aggregate number of shares and vested options held by such persons as the number of shares being released for the selling stockholders participating in this offering represents of their aggregate holdings. Morgan Stanley & Co. LLC, in its sole discretion, may from time to time permit our stockholders who are subject to these lock-up agreements to sell additional shares prior to the expiration of the lock-up agreements.

In addition to the existing lock-up agreements from the initial public offering, in connection with this offering, we, the selling stockholders and all of our directors and officers have also entered into new lock-up agreements on substantially similar terms effective for 90 days following the date of this prospectus. Upon completion of this offering, based on the number of shares outstanding on March 31, 2018, 65,129,989 shares of our common stock, or 79.6% of our outstanding shares, will be restricted from sale as a result of securities laws or lock-up agreements through June 12, 2018 and 55,612,343 shares of our common stock, or 68.0% of our outstanding shares (assuming the underwriters do not exercise their option to purchase additional shares from the selling stockholders), will be restricted from sale as a result of securities laws or lock-up agreements through the date that is 90 days following the date of this prospectus.

In addition, as of March 31, 2018, there were 15,716,006 shares subject to outstanding options, 507,578 shares subject to outstanding restricted stock unit awards, or RSUs, and an additional 8,856,598 shares reserved for future issuance under our equity incentive plans that will become eligible for sale in the public market to the extent permitted by any applicable vesting requirements, lock-up agreements and Rules 144 and 701 under the Securities Act of 1933, as amended. Because we registered all shares of common stock that may be issued under our equity incentive plans pursuant to a Registration Statement on Form S-8 on December 15, 2017, any such shares that we issue can be freely sold in the public market upon issuance, subject to the lock-up agreements and the restrictions imposed on our affiliates under Rule 144.

Moreover, holders of an aggregate of approximately 43,274,870 shares of our common stock as of March 31, 2018, will have rights, subject to expiration of the lock-up agreements described above and some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. Once we register these shares, they can be freely sold in the public market upon issuance, subject to the lock-up agreements and the restrictions imposed on our affiliates under Rule 144.

Anti-takeover provisions in our restated certificate of incorporation and our amended and restated bylaws, as well as provisions of Delaware law, might discourage, delay or prevent a change in control of our company or changes in our management and, therefore, depress the trading price of our common stock.

Our restated certificate of incorporation and amended and restated bylaws and Delaware law contain provisions that may discourage, delay or prevent a merger, acquisition or other change in control that

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stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares of our common stock. These provisions may also prevent or delay attempts by our stockholders to replace or remove our management. Our corporate governance documents include provisions:

- establishing a classified board of directors with staggered three-year terms so that not all members of our board are elected at one time;
- providing that directors may be removed by stockholders only for cause and only with a vote of the holders of at least 75% of the issued and outstanding shares of common stock;
- limiting the ability of our stockholders to call and bring business before special meetings and to take action by written consent in lieu of a meeting;
- requiring advance notice of stockholder proposals for business to be conducted at meetings of our stockholders and for nominations of candidates for election to our board of directors;
- authorizing blank check preferred stock, which could be issued with voting, liquidation, dividend and other rights superior to our common stock; and
- limiting the liability of, and providing indemnification to, our directors and officers.

As a Delaware corporation, we are also subject to provisions of Delaware law, including Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders holding more than 15% of our outstanding common stock from engaging in certain business combinations with us. Any provision of our restated certificate of incorporation or amended and restated bylaws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

The existence of the foregoing provisions and anti-takeover measures could limit the price that investors might be willing to pay in the future for shares of our common stock. They could also deter potential acquirers of our company, thereby reducing the likelihood that you could receive a premium for your common stock in an acquisition.

Our restated certificate of incorporation provides that the Court of Chancery of the State of Delaware will be the exclusive forum for substantially all disputes between us and our stockholders. Our restated certificate of incorporation further provides that the federal district courts of the United States are the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. These choice of forum provisions could limit our stockholders' ability to obtain a more favorable judicial forum for disputes with us or our directors, officers or employees.

Our restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our certificate of incorporation or our bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. Our restated certificate of incorporation further provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall, to the fullest extent permitted by law, be the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. These choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and other employees. Alternatively, if a court were to find the choice of forum provisions contained in our certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could materially adversely affect our business, financial condition, results of operations and prospects.

We are an “emerging growth company,” and the reduced disclosure requirements applicable to emerging growth companies may make our common stock less attractive to investors.

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and may remain an emerging growth company until the last day of our fiscal year following the fifth anniversary of our initial public offering, subject to specified conditions. For so long as we remain an emerging growth company, we are permitted, and intend, to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include being permitted to provide reduced disclosure regarding executive compensation and exemptions from the requirements to hold non-binding advisory votes on executive compensation and golden parachute payments, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002 related to our internal control over financial reporting, and not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding a supplement to the auditor’s report providing additional information about the audit and the financial statements. In this prospectus, we have not included all of the executive compensation related information that would be required if we were not an emerging growth company. We cannot predict whether investors will find our common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

Further, Section 102(b)(1) of the JOBS Act exempts emerging growth companies from being required to comply with new or revised financial accounting standards until private companies (that is, companies that have not filed a pending registration statement under the Securities Act, had a Securities Act registration statement declared effective or do not have a class of securities registered under the Securities Exchange Act of 1934, as amended, or the Exchange Act) are required to comply with the new or revised financial accounting standards. The JOBS Act provides that a company can elect to opt out of the extended transition period and comply with the requirements that apply to non-emerging growth companies, but any such an election to opt out is irrevocable. We have elected not to opt out of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we will adopt the new or revised standard at the time private companies adopt the new or revised standard, provided that we continue to be an emerging growth company. This may make comparison of our financial statements with the financial statements of another public company that is not an emerging growth company, or an emerging growth company that has opted out of using the extended transition period, difficult or impossible because of the potential differences in accounting standards used.

We will remain an emerging growth company until the last day of the fiscal year following the fifth anniversary of our initial public offering or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company if we have more than \$1.07 billion in annual revenue, we have more than \$700 million in market value of our stock held by non-affiliates (and we have been a public company for at least 12 months and have filed one Annual Report on Form 10-K) or we issue more than \$1 billion of non-convertible debt securities over a three-year period.

We have elected to rely on certain phase-in provisions of the Nasdaq Stock Market rules, and, as a result, we are not yet subject to certain corporate governance requirements otherwise required of Nasdaq-listed companies.

We are currently relying on the phase-in provisions of the Nasdaq rules for certain corporate governance requirements, including the requirements that we have:

- a majority of independent directors on our board of directors;
- an audit committee that is composed entirely of independent directors; and
- a compensation committee that is composed entirely of independent directors.

Under the phase-in provisions of the Nasdaq rules, a majority of the members of our board of directors must be independent within one year of the date of our initial public offering, and we must comply with the following independence requirements with respect to our audit committee and our compensation committee: (1) one independent member of each committee beginning at the time of our initial public offering, (2) a majority of independent members of each committee within 90 days following the date of our initial public offering and (3) all independent members of each committee within one year of the date of our initial public offering. As of March 8, 2018, three members of our board of directors had been determined to be independent, two members of our audit committee had been determined to be independent and two members of our compensation committee had been determined to be independent. During the phase-in periods, our stockholders will not have the same protections afforded to stockholders of companies that comply with Nasdaq's independence requirements without reliance on the phase-in periods. We will be required to recruit new directors in order to comply with Nasdaq's independence requirements, and the resultant changes in our board and committee membership may influence our future corporate strategy and operating philosophies and may result in deviations from our current strategy. Additionally, if, during the phase-in periods, we are unable to recruit a sufficient number of new directors who qualify as independent or otherwise comply with Nasdaq rules, we may be subject to delisting by Nasdaq.

Our management team has limited experience managing a public company.

Most members of our management team have limited experience managing a publicly traded company, interacting with public company investors and complying with the increasingly complex laws pertaining to public companies. Our management team may not successfully or efficiently manage our transition to being a public company subject to significant regulatory oversight and reporting obligations under the federal securities laws and the scrutiny of securities analysts and investors. These new obligations and constituents will require significant attention from our management team and could divert their attention away from the day-to-day management of our business, which could materially adversely affect our business, financial condition, results of operations and prospects.

The requirements of being a public company may strain our resources, divert management's attention and affect our ability to attract and retain qualified board members.

As a public company, we are subject to the reporting requirements of the Exchange Act, the listing requirements of the Nasdaq Stock Market and other applicable securities rules and regulations. Compliance with these rules and regulations will increase our legal and financial compliance costs, make some activities more difficult, time-consuming or costly, and increase demand on our systems and resources, particularly after we are no longer an emerging growth company. Among other things, the Exchange Act requires that we file annual, quarterly and current reports with respect to our business and results of operations and maintain effective disclosure controls and procedures and internal control over financial reporting. In order to maintain and, if required, improve our disclosure controls and procedures and internal control over financial reporting to meet this standard, significant resources and management oversight may be required. As a result, management's attention may be diverted from other business concerns, which could harm our business and results of operations. Although we have already hired additional employees to comply with these requirements, we may need to hire even more employees in the future, which will increase our costs and expenses.

We are currently evaluating our internal controls, including to identify and remediate any deficiencies in those internal controls. We may not be able to complete our evaluation, testing and any required remediation in a timely fashion. During the evaluation and testing process, if we identify one or more material weaknesses in our internal control over financial reporting that we are unable to remediate before the end of the same fiscal year in which the material weakness is identified, we will be unable to assert that our internal controls are effective. If we are unable to assert that our internal control over financial reporting is effective, or if our auditors are unable to attest to management's report on the effectiveness of our internal controls, which will be required after we are

no longer an emerging growth company, we could lose investor confidence in the accuracy and completeness of our financial reports, which would cause the price of our common stock to decline.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure are increasing legal and financial compliance costs and making some activities more time-consuming. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expense and a diversion of management's time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies, regulatory authorities may initiate legal proceedings against us and our business may be harmed.

We also expect that being a public company will make it more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors and qualified executive officers.

We estimate that we will incur approximately \$2.0 to \$3.0 million of incremental annual costs associated with being a publicly traded company, which we expect will be included in general and administrative expenses. However, it is possible that our actual incremental costs of being a publicly traded company will be higher than we currently estimate. In estimating these costs, we took into account expenses related to insurance, legal, accounting and compliance activities.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. All statements other than statements of historical fact contained in this prospectus, including statements regarding our future results of operations and financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important 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.

In some cases, you can identify forward-looking statements by terms such as “may,” “should,” “expects,” “plans,” “anticipates,” “could,” “intends,” “target,” “projects,” “contemplates,” “believes,” “estimates,” “predicts,” “potential” or “continue” or the negative of these terms or other similar expressions. The forward-looking statements in this prospectus are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of risks, uncertainties and assumptions described in the “Risk Factors” section and elsewhere in this prospectus. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Some of the key factors that could cause actual results to differ from our expectations include:

- our ability to anticipate technological shifts;
- our ability to generate positive returns on our research and development;
- changes in the rate of broadband service providers’ deployment of, and investment in, ultra-broadband network capabilities;
- the lack of predictability of revenue due to lengthy sales cycles and the volatility in capital expenditure budgets of broadband service providers;
- our ability to maintain and expand gross profit and net income;
- the sufficiency of our cash resources and needs for additional financing;
- our ability to further penetrate our existing customer base and obtain new customers;
- changes in our pricing policies, whether initiated by us or as a result of competition;
- the amount and timing of operating costs and capital expenditures related to the operation and expansion of our business;
- the actual or rumored timing and success of new product and service introductions by us or our competitors or any other change in the competitive landscape of our industry, including consolidation among our competitors or customers;
- our ability to successfully expand our business domestically and internationally;
- insolvency or credit difficulties confronting our customers, which could adversely affect their ability to purchase or pay for our products and services, or confronting our key suppliers, which could disrupt our supply chain;

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- our inability to fulfill our customers' orders due to supply chain delays, access to key commodities or technologies or events that impact our manufacturers or their suppliers;
- future accounting pronouncements or changes in our accounting policies;
- stock-based compensation expense;
- the cost and possible outcomes of any potential litigation matters;
- our overall effective tax rate, including impacts caused by the relative proportion of foreign to U.S. income, the amount and timing of certain employee stock-based compensation transactions, changes in the valuation of our deferred tax assets and any new legislation or regulatory developments;
- increases or decreases in our expenses caused by fluctuations in foreign currency exchange rates;
- general economic conditions, both domestically and in foreign markets;
- our ability to obtain and maintain intellectual property protection for our products; and
- our use of our cash reserves and any other sources of liquidity.

Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein until after we distribute this prospectus, whether as a result of any new information, future events or otherwise.

INDUSTRY AND OTHER DATA

Information contained in this prospectus concerning our industry and the markets in which we operate, including our general expectations and market position, is based on information from independent industry analysts and third-party sources and management estimates. Management estimates are derived from publicly available information released by independent industry analysts and third-party sources, as well as data from our internal research, and are based on assumptions, which we believe to be reasonable, made by us based on such data, as well as our knowledge of our industry and solutions. This information involves a number of assumptions and limitations, and we caution you not to give undue weight to such estimates. Projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described in “Risk Factors” and elsewhere in this prospectus. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties or us and contained in this prospectus.

USE OF PROCEEDS

We are filing the registration statement of which this prospectus is a part to permit holders of the shares of our common stock included in the section entitled “Principal and Selling Stockholders” to resell such shares. We are not selling any securities under this prospectus and we will not receive any proceeds from the sale of shares by the selling stockholders. Under Section 16(b) of the Securities Exchange Act of 1934, or the Exchange Act, any officer, director or 10% stockholder of a public company who realizes any profit from a non-exempt purchase and sale (or sale and purchase) of equity securities of the company within a period of less than six months is automatically liable to pay to the company the amount of any such realized profit. Funds affiliated with Summit Partners, L. P., collectively, our largest stockholder, which we refer to as Summit Partners, and Jerry Guo, our President and Chief Executive Officer, purchased 250,000 shares and 100,000 shares, respectively, for \$13.00 per share in our initial public offering on December 14, 2017. In light of the requirements of Section 16(b) of the Exchange Act, Summit Partners and Jerry Guo, as selling stockholders in this offering, have agreed to disgorge to us, for each share sold by them in this offering (up to a maximum of 250,000 shares and 100,000 shares, respectively), an amount equal to the difference between the public offering price per share in this offering (less the per share underwriting discounts and commissions payable by them) and the initial public offering price of \$13.00 per share, with the aggregate amount of such disgorgement subject to reduction by the amount of any other direct offering expenses payable by them in accordance with Section 16(b). Based on an assumed offering price of \$30.12 per share, which was the closing price of our common stock on the Nasdaq Global Select Market on April 20, 2018, the aggregate amount of such payments by Summit Partners and Jerry Guo to us would be approximately \$3.9 million and \$1.6 million, respectively, prior to any reduction for direct offering expenses.

We will bear the costs, fees and expenses incurred in effecting the registration of the shares covered by this prospectus, including all registration and filing fees and fees and expenses of our counsel and our accountants. The selling stockholders will pay any underwriting discounts and commissions and any other costs, fees and expenses incurred by them in connection with this offering, other than the fees and expenses of one counsel for the selling stockholders, which will be paid by us.

PRICE RANGE OF COMMON STOCK

Our common stock has been listed on the Nasdaq Global Select Market under the symbol “CASA” since December 15, 2017. Prior to that date, there was no public market for our common stock. The following table sets forth, for the periods indicated, the high and low intraday sales prices of our common stock as reported by the Nasdaq Global Select Market:

	<u>High</u>	<u>Low</u>
Fourth quarter 2017 (beginning December 15, 2017)	\$17.78	\$13.25
First quarter 2018	\$34.21	\$16.59
Second quarter 2018 (through April 20, 2018)	\$33.90	\$27.27

On April 20, 2018, the closing price of our common stock as reported on the Nasdaq Global Select Market was \$30.12 per share. As of April 20, 2018, we had 81 holders of record of our common stock.

DIVIDEND POLICY

Prior to our initial public offering, we declared special dividends in November 2017, May 2017, December 2016, June 2016 and November 2014. The November 2014 special dividend totaled \$27.6 million in cash payments to our stockholders. In connection with the November 2014 special dividend, our board of directors also approved cash payments totaling \$2.4 million to be made to holders of our stock options and stock appreciation rights as equitable adjustments to the holders of such instruments in accordance with the provisions of our equity incentive plans. The June 2016 special dividend totaled \$43.1 million in cash payments to our stockholders. In connection with the June 2016 special dividend, our board of directors also approved cash payments totaling \$6.9 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments to the holders of such instruments in accordance with the provisions of our equity incentive plans. The December 2016 special dividend totaled \$171.4 million in cash payments to our stockholders. In connection with the December 2016 special dividend, our board of directors also approved cash payments totaling \$28.6 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments to the holders of such instruments in accordance with the provisions of our equity incentive plans. The May 2017 special dividend totaled \$87.1 million in cash payments to our stockholders. In connection with the May 2017 special dividend, our board of directors also approved cash payments totaling \$12.9 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments to the holders of such instruments in accordance with the provisions of our equity incentive plans. The November 2017 special dividend totaled \$43.0 million in cash payments to our stockholders. In connection with the November 2017 special dividend, our board of directors also approved cash payments totaling \$7.0 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments to the holders of such instruments in accordance with the provisions of our equity incentive plans.

Although we declared and paid the special dividends described above, we do not anticipate declaring cash dividends in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on a number of factors, including future earnings, capital requirements, financial conditions, future prospects, contractual restrictions and covenants and other factors that our board of directors may deem relevant. Our credit facility contains covenants that limit our ability to pay dividends on our capital stock.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and our capitalization as of December 31, 2017. This information should be read in conjunction with our consolidated financial statements and related notes appearing at the end of this prospectus and the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” section of and other financial information contained in this prospectus.

	As of December 31, 2017 (in thousands, except per share data)
Cash and cash equivalents	\$ 260,820
Long-term debt, including current portion, net of unamortized debt issuance costs	\$ 297,615
Stockholders’ equity:	
Preferred stock, \$0.001 par value per share; 5,000 shares authorized, no shares issued or outstanding	—
Common stock, \$0.001 par value per share; 500,000 shares authorized, 81,043 shares issued and outstanding	81
Additional paid-in capital	128,798
Accumulated other comprehensive income	194
Accumulated deficit	(78,917)
Total stockholders’ equity	50,156
Total capitalization	\$ 347,771

The table above does not include:

- 145,830 shares of common stock issuable upon the exercise of stock options outstanding under our 2003 Stock Incentive Plan as of December 31, 2017, with a weighted-average exercise price of \$0.25 per share;
- 14,807,860 shares of common stock issuable upon the exercise of stock options outstanding under our 2011 Stock Incentive Plan as of December 31, 2017, with a weighted-average exercise price of \$4.24 per share;
- 861,740 shares of common stock issuable upon the vesting of restricted stock units outstanding under our 2011 Stock Incentive Plan as of December 31, 2017;
- 625,000 shares of common stock issuable upon the exercise of stock options outstanding under our 2017 Stock Incentive Plan as of December 31, 2017, with a weighted-average exercise price of \$13.00 per share;
- 34,614 shares of common stock issuable upon the vesting of restricted stock units outstanding under our 2017 Stock Incentive Plan as of December 31, 2017; and
- 9,363,356 additional shares of common stock reserved for future issuance under our 2017 Stock Incentive Plan as of December 31, 2017.

DILUTION

This offering is for sales of common stock by the selling stockholders. Sales of common stock by the selling stockholders will not result in a change to the net tangible book value per share before and after the distribution of shares by such selling stockholders.

If you invest in our common stock in this offering, your ownership interest will be immediately diluted to the extent of the difference between the public offering price per share of our common stock and the net tangible book value per share of our common stock immediately after the closing of this offering. Our historical net tangible book value as of December 31, 2017 was \$50.2 million, or \$0.62 per share of common stock. Our historical net tangible book value per share represents our total tangible assets less our total liabilities, divided by the number of shares of common stock outstanding as of December 31, 2017.

SELECTED CONSOLIDATED FINANCIAL DATA

The following tables present selected consolidated financial and other financial data for our business. The selected consolidated statement of operations data presented below for the years ended December 31, 2017, 2016 and 2015 and the selected consolidated balance sheet data as of December 31, 2017 and 2016 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. The selected consolidated statement of operations data presented below for the year ended December 31, 2014 and the selected consolidated balance sheet data as of December 31, 2015 and 2014 have been derived from our audited consolidated financial statements not included in this prospectus. Our historical results are not necessarily indicative of the results to be expected in any future period. You should read the following selected consolidated financial data in conjunction with the section of this prospectus titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and related notes appearing elsewhere in this prospectus.

	Year Ended December 31,			
	2017	2016	2015	2014
	(in thousands, except per share amounts)			
Consolidated Statement of Operations Data:				
Revenue:				
Product	\$ 311,896	\$ 279,223	\$ 247,588	\$ 194,358
Service	39,679	36,905	24,862	16,920
Total revenue	351,575	316,128	272,450	211,278
Cost of revenue(1):				
Product	88,538	89,340	74,349	59,088
Service	4,973	8,477	5,265	5,917
Total cost of revenue	93,511	97,817	79,614	65,005
Gross profit	258,064	218,311	192,836	146,273
Operating expenses:				
Research and development(1)	60,677	49,210	37,155	25,481
Sales and marketing(1)	39,602	36,114	36,157	21,409
General and administrative(1)	21,563	18,215	16,453	10,346
Total operating expenses	121,842	103,539	89,765	57,236
Income from operations	136,222	114,772	103,071	89,037
Other income (expense), net	(13,404)	921	(1,408)	(2,942)
Income before provision for income taxes	122,818	115,693	101,663	86,095
Provision for income taxes	34,318	27,025	33,742	26,387
Net income	\$ 88,500	\$ 88,668	\$ 67,921	\$ 59,708
Cash dividends declared per common share or common share equivalent	\$ 1.7576	\$ 2.9197	\$ —	\$ 0.3835
Net income (loss) attributable to common stockholders(2):				
Basic	\$ 11,849	\$ (35,119)	\$ 27,302	\$ 23,287
Diluted	\$ 11,849	\$ (35,119)	\$ 30,402	\$ 23,843

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	Year Ended December 31,			
	2017	2016	2015	2014
	(in thousands, except per share amounts)			
Net income (loss) per share attributable to common stockholders(2):				
Basic	\$ 0.34	\$ (1.07)	\$ 0.86	\$ 0.78
Diluted	\$ 0.26	\$ (1.07)	\$ 0.78	\$ 0.73
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders(2):				
Basic	35,359	32,864	31,740	29,983
Diluted	44,972	32,864	38,809	32,683
Other Financial Data:				
Non-GAAP net income(3)	\$ 110,230	\$ 95,032	\$ 72,812	\$ 62,145
Adjusted EBITDA(3)	\$ 153,096	\$ 129,084	\$ 115,541	\$ 94,632

(1) Includes stock-based compensation expense related to stock options, stock appreciation rights and restricted stock units granted to employees and non-employee consultants as follows:

	Year Ended December 31,			
	2017	2016	2015	2014
	(in thousands)			
Cost of revenue	\$ 306	\$ 237	\$ 143	\$ 161
Research and development expense	2,864	2,306	1,843	852
Sales and marketing expense	1,112	1,147	775	598
General and administrative expense	4,854	4,614	4,560	380
Total stock-based compensation expense	\$9,136	\$8,304	\$7,321	\$1,991

- (2) See Note 13 to our audited consolidated financial statements included elsewhere in this prospectus for an explanation of the calculations of basic and diluted net income (loss) per share attributable to common stockholders.
- (3) These financial measures are not calculated in accordance with GAAP. See “Selected Consolidated Financial Data—Non-GAAP Financial Measures” for information regarding our use of these non-GAAP financial measures and a reconciliation of such measures to their nearest comparable financial measures calculated and presented in accordance with GAAP.

	As of December 31,			
	2017	2016	2015	2014
	(in thousands)			
Consolidated Balance Sheet Data:				
Cash, cash equivalents and marketable securities	\$260,820	\$343,946	\$ 92,496	\$ 77,155
Working capital(1)	324,710	286,652	162,981	99,237
Total assets	469,697	583,035	283,097	230,815
Long-term debt, including current portion, net of unamortized debt issuance costs	297,615	299,751	7,795	—
Total liabilities	419,541	557,259	103,160	124,636
Convertible preferred stock	—	97,479	97,479	97,479
Total stockholders' equity (deficit)	50,156	(71,703)	82,458	8,700

(1) We define working capital as current assets less current liabilities.

Product Revenue

For the years ended December 31, 2017, 2016, 2015 and 2014, our product revenue consisted of the following:

	Year Ended December 31,					
	2017			2016		
	Sales of Broadband Products	Capacity Expansions	Total Product Revenue	Sales of Broadband Products	Capacity Expansions	Total Product Revenue
	(dollars in thousands)					
Product revenue	\$ 198,147	\$ 113,749	\$ 311,896	\$ 209,751	\$ 69,472	\$ 279,223
Percentage of product revenue	63.5%	36.5%	100.0%	75.1%	24.9%	100.0%

	Year Ended December 31,					
	2015			2014		
	Sales of Broadband Products	Capacity Expansions	Total Product Revenue	Sales of Broadband Products	Capacity Expansions	Total Product Revenue
	(dollars in thousands)					
Product revenue	\$ 226,703	\$ 20,885	\$ 247,588	\$ 187,218	\$ 7,140	\$ 194,358
Percentage of product revenue	91.6%	8.4%	100.0%	96.3%	3.7%	100.0%

Non-GAAP Financial Measures

To supplement our consolidated financial statements presented in accordance with generally accepted accounting principles, or GAAP, we monitor and consider non-GAAP net income and adjusted EBITDA. These non-GAAP financial measures are not based on any standardized methodology prescribed by GAAP and are not necessarily comparable to similarly titled measures presented by other companies.

Non-GAAP net income. We define non-GAAP net income as net income as reported in our consolidated statements of operations, excluding the impact of stock-based compensation expense and changes in the fair value of warrant liability, both of which are non-cash charges, and the tax effect of those excluded items based on the application of our effective income tax rate for the period, and excluding the impact of the U.S. Tax Cuts and Jobs Act of 2017, which is a one-time non-recurring charge, and the actual tax charge for this excluded item. We have presented non-GAAP net income because it is a key measure used by our management and board of directors to understand and evaluate our operating performance, to establish budgets and to develop operational goals for managing our business. The presentation of non-GAAP net income also allows our management and board of directors to make additional comparisons of our results of operations to other companies in our industry.

Adjusted EBITDA. We define adjusted EBITDA as our net income, excluding the impact of stock-based compensation expense and changes in the fair value of warrant liability; other income (expense), net; depreciation and amortization expense; and our provision for income taxes. We have presented adjusted EBITDA because it is a key measure used by our management and board of directors to understand and evaluate our operating performance, to establish budgets and to develop operational goals for managing our business. In particular, we believe that excluding the impact of these expenses in calculating adjusted EBITDA can provide a useful measure for period-to-period comparisons of our core operating performance.

We use these non-GAAP financial measures to evaluate our operating performance and trends and make planning decisions. We believe that each of these non-GAAP financial measures helps identify underlying trends in our business that could otherwise be masked by the effect of the expenses that we exclude in the calculations of each non-GAAP financial measure. Accordingly, we believe that these financial measures provide useful information to investors and others in understanding and evaluating our operating results, enhancing the overall understanding of our past performance and future prospects.

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Our non-GAAP financial measures are not prepared in accordance with GAAP, and should not be considered in isolation of, or as an alternative to, measures prepared in accordance with GAAP. There are a number of limitations related to the use of these non-GAAP financial measures rather than the most directly comparable financial measures calculated and presented in accordance with GAAP. Some of these limitations are:

- we exclude stock-based compensation expense from each of non-GAAP net income and adjusted EBITDA as it has recently been, and will continue to be for the foreseeable future, a significant recurring non-cash expense for our business and an important part of our compensation strategy;
- we exclude the changes in the fair value of warrant liability from our non-GAAP net income and adjusted EBITDA measures as it had been a recurring non-cash charge in our statement of operations until the warrant was exercised in March 2014;
- we exclude the impact of the U.S. Tax Cuts and Jobs Act of 2017 from non-GAAP net income, although it represents a significant cash expense, because it is a one-time non-recurring charge;
- adjusted EBITDA excludes depreciation and amortization expense and, although this is a non-cash expense, the assets being depreciated and amortized may have to be replaced in the future;
- adjusted EBITDA does not reflect the cash requirements necessary to service interest on our debt or the cash received from our interest-bearing financial assets, both of which impact the cash available to us, and does not reflect foreign currency transaction gains and losses, all of which are reflected in other income (expense), net;
- adjusted EBITDA does not reflect income tax payments that reduce cash available to us;
- other companies, including companies in our industry, may not use non-GAAP net income or adjusted EBITDA, or may calculate such non-GAAP financial measures in a different manner than we do, or may use other non-GAAP financial measures to evaluate their performance, all of which could reduce the usefulness of these non-GAAP financial measures as comparative measures.

In addition, other companies may use other measures to evaluate their performance, all of which could reduce the usefulness of our non-GAAP financial measures as tools for comparison.

The following tables reconcile non-GAAP net income and adjusted EBITDA to net income, the most directly comparable financial measure calculated and presented in accordance with GAAP.

	Year Ended December 31,			
	2017	2016	2015	2014
	(in thousands)			
Reconciliation of Net Income to Non-GAAP Net Income:				
Net income	\$ 88,500	\$88,668	\$67,921	\$59,708
Stock-based compensation	9,136	8,304	7,321	1,991
Change in fair value of warrant liability	—	—	—	1,523
Impact of the U.S. Tax Cuts and Jobs Act(1)	14,098	—	—	—
Tax effect of excluded items, except for the impact of the U.S. Tax Cuts and Jobs Act(1)	(1,504)	(1,940)	(2,430)	(1,077)
Non-GAAP net income	\$110,230	\$95,032	\$72,812	\$62,145

- (1) During the fiscal quarter ended December 31, 2017, we recorded provisional tax amounts for the one-time transition tax on the accumulated earnings of certain foreign subsidiaries and the re-measurement of certain deferred tax assets and liabilities as a result of the enactment of the U.S. Tax Cuts and Jobs Act of 2017, or the TCJA. The deemed repatriation of foreign earnings and the re-measurement of deferred tax assets and liabilities associated with the TCJA resulted in provisional tax expense of \$14.1 million, of which \$10.0 million related to the deemed repatriation of \$37.1 million of previously untaxed accumulated foreign earnings. Our accounting for these tax effects will be completed during the one-year measurement period allowed under Staff Accounting Bulletin 118.

	Year Ended December 31,			
	2017	2016	2015	2014
	(in thousands)			
Reconciliation of Net Income to Adjusted EBITDA:				
Net income	\$ 88,500	\$ 88,668	\$ 67,921	\$59,708
Stock-based compensation	9,136	8,304	7,321	1,991
Depreciation and amortization	7,738	6,008	5,149	3,604
Other income (expense), net	13,404	(921)	1,408	2,942
Provision for income taxes	34,318	27,025	33,742	26,387
Adjusted EBITDA	<u>\$153,096</u>	<u>\$129,084</u>	<u>\$115,541</u>	<u>\$94,632</u>

	Three Months Ended March 31, 2018 (Projected)		Three Months Ended March 31, 2017 (Actual)
	Low	High	
	(in thousands)		
Reconciliation of Net Income to Non-GAAP Net Income (recent developments):			
Net income	\$17,190	\$17,730	\$ 18,154
Stock-based compensation	4,230	4,230	1,900
Tax effect of excluded item	(423)	(423)	(109)
Non-GAAP net income	\$20,997	\$21,537	\$ 19,945

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion of our financial condition and results of operations should be read together with our consolidated financial statements and related notes and other financial information included elsewhere in this prospectus. The following discussion contains forward-looking statements that reflect our plans, estimates and beliefs. Our actual results could differ materially from those discussed in the forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this prospectus, particularly in the section titled "Risk Factors." In this discussion, we use financial measures that are considered non-GAAP financial measures under Securities and Exchange Commission rules. These rules require supplemental explanation and reconciliation, which is included elsewhere in this prospectus. Investors should not consider non-GAAP financial measures in isolation from, or in substitution for, financial information presented in compliance with GAAP.

Overview

We offer solutions for next-generation centralized, distributed and virtualized architectures in cable broadband, fixed-line broadband and wireless networks. Our innovative solutions enable customers to cost-effectively and dynamically increase network speed, add bandwidth capacity and new services for consumers and enterprises, reduce network complexity and reduce operating and capital expenditures. Our solutions include a suite of software-centric infrastructure solutions that allow cable service providers to deliver voice, video and data services over a single platform at multi-gigabit speeds.

We have created a software-centric, multi-service portfolio that enables a broad range of core and access network functions for fixed and wireless networks. These networks share a common set of core and access network functions that enable network services such as subscriber management, session management, transport security and radio frequency, or RF, management. Our Axyom software architecture allows each of these network functions to be provided and controlled by a distinct segment of software, which can be integrated or combined together in a building block-style fashion with the segments of software responsible for each other network function. This allows us to offer network architectures that can be efficiently tailored to meet each customer's specific requirements, both as they exist at the time of initial implementation and as they evolve over time. While we initially focused on providing solutions for cable service providers due to our founders' experience in the cable industry, the commonalities between fixed and wireless network architectures have allowed us to expand our solutions into the wireless market as cable service providers have increasingly sought to add wireless capabilities to their service offerings.

We offer a scalable solution that can meet the evolving bandwidth needs of our customers and their subscribers. Our first installation in a service provider's network frequently involves deploying our broadband products in only a portion of the provider's network and with only a fraction of the capacity of our products enabled at the time of initial installation. Over time, our customers have generally expanded the use of our solutions to other areas of their networks to increase network capacity. Capacity expansions are accomplished either by deploying additional systems or line cards, or by our remote enablement of additional channels through the use of software. Sales of additional line cards and software-based capacity expansions generate higher gross margins than our initial hardware-based deployments.

We believe that the shift to software-centric ultra-broadband networks and fixed and wireless network convergence presents us with a compelling market opportunity. We intend to maintain our technological leadership through the enhancement of existing products and the development of new products in both our current and adjacent markets. By investing in research and development, we believe we will be well positioned to

continue our rapid growth and take advantage of the large market opportunity across fixed and wireless networks. We also intend to continue to expand our sales and marketing initiatives in key geographies.

We have achieved significant growth in revenue and profitability. Our revenue has increased from \$67.0 million in 2013 to \$211.3 million in 2014, \$272.5 million in 2015, \$316.1 million in 2016 and \$351.6 million in 2017. Our income from operations has increased from \$10.0 million in 2013 to \$89.0 million in 2014, \$103.1 million in 2015, \$114.8 million in 2016 and \$136.2 million in 2017. Our solutions are commercially deployed in more than 70 countries by more than 450 customers, including regional service providers as well as some of the world's largest Tier 1 broadband service providers, serving millions of subscribers.

Our Business Model

We derive revenue from sales of our products and services. The majority of our product revenue is derived from sales of our broadband products, particularly our C100G converged cable access platform, or CCAP, solution. We generate service revenue primarily from sales of maintenance and support services, which end customers typically purchase in conjunction with our products, and, to a lesser extent, from sales of professional services and extended warranty services.

Since shipping our first products in 2005, our cumulative end-customer base has grown significantly. Our revenue and installed base of equipment has increased significantly with the introduction of our CCAP solution in 2012 and our Data Over Cable Service Interface Specification, or DOCSIS, 3.1 capabilities in 2015, both of which run on our Axyom software platform.

We offer a scalable solution that can meet the evolving bandwidth needs of our customers and their subscribers.

Our sales model focuses on the following key areas:

- **Adding New Customers.** With several thousand broadband service providers existing globally, we believe that we have opportunities for growth by acquiring new customers in all of the geographic regions in which we compete. Potential new customers include broadband service providers that provide fixed or wireless services or both. We intend to add new customers over time by continuing to invest in our technology and our sales team to capitalize on these new opportunities. Our sales team works closely with prospective customers to educate them on and demonstrate to them the technical and business merits of our products, including the ability to capture new revenue opportunities and realize cost savings through the use of our broadband solutions. We build relationships with prospective customers at multiple levels and within numerous departments in a customer's organization and, through the sales process, we strive to be a strategic business partner for our customers. We believe that the technological strengths and capabilities of our broadband solutions and the introduction and implementation of next-generation standards have been and will continue to be an important factor in our ability to add new customers.
- **Expanding Sales to Our Existing Customer Base.** Our first installation in a service provider's network frequently involves deploying our broadband products in only a portion of the provider's network and with only a fraction of the capacity of our products enabled at the time of initial installation. Over time, our customers have generally expanded the use of our solutions to other areas of their networks to increase network capacity. Capacity expansions are accomplished either by deploying additional systems or line cards, or by our remote enablement of additional channels through the use of software. Sales of additional line cards and software-based capacity expansions generate higher gross margins than our initial hardware-based deployments.

We work with our existing customers to identify expansion and cross-selling opportunities. Existing customers are familiar with and have benefited from the operational and economic benefits of our broadband products, and therefore, sales cycles for existing customers are generally shorter. We believe expansion and cross-selling opportunities with existing customers are significant given their existing and expected infrastructure spend as service providers leverage their investment in our platform to deliver new services to their customers. The majority of our top 20 customers over the period from 2013 to 2017 made subsequent purchases of our products and services in a majority of the fiscal quarters following the quarter in which they made their initial purchases. The first quarter of purchases is typically the beginning of the deployment of our broadband products. Approximately 55% of all customers that have made initial purchases from us over the period from 2013 to 2017 have made additional purchases from us after the initial quarter of purchase. These customers purchased on average 3.6 times, 6.7 times, 9.9 times and 14.3 times the value of their initial quarter purchases during the four, eight, 12 and 16 quarters, respectively, following the quarter of initial purchase. Among all customers that have made initial purchases from us over the period from 2013 to 2017, the 20 largest, as measured by their total purchases from us, purchased on average 4.1 times, 7.9 times, 11.8 times and 16.6 times the value of their initial quarter purchases during the four, eight, 12 and 16 quarters, respectively, following the quarter of initial purchase. These 20 customers accounted for the substantial majority of purchases by all customers that made initial purchases from us over that period, and all of these 20 customers have made subsequent purchases from us. These analyses are based on billings, which represent amounts invoiced to customers for products shipped, or for services performed or to be performed, which will be recorded as either revenue or deferred revenue depending on the nature of the arrangement.

Our solutions are commercially deployed in over 70 countries by more than 450 customers. We expect that a substantial portion of our future sales will be follow-on sales to existing customers. During the years ended December 31, 2017, 2016 and 2015, sales to existing customers represented 97%, 74% and 63% of our revenue, respectively. Our business and results of operations will depend on our ability to sell additional products to our existing customer base.

- **Selling New Products.** Our results of operations have been, and we believe will continue to be, affected by our ability to quickly and effectively design and sell products with improved performance and increased functionality. As networks and standards for broadband solutions evolve, we aim to deliver new products prior to our competition. For example, the introduction of our DOCSIS 3.0 broadband solution, our CCAP solution and our DOCSIS 3.1 capabilities allowed us to obtain new customers, increase our sales to existing customers, increase our revenue and capture market share. We aim to increase our revenue by enabling customers to transition from previously deployed data and video solutions to our integrated CCAP solutions, which can incorporate DOCSIS 3.1 standards as well as our remote-PHY distributed access solution. Over the last several years, we have made substantial investments to extend our Axyom software platform to serve the wireless market, and we expect to generate increased revenue in the future from sales of wireless solutions to new and existing customers. We have also developed solutions for telecommunications service providers. Our ability to sustain our revenue growth will depend, in part, upon our sales of new products.

We market and sell our products and services through our direct global sales force, supported by sales agents, and through resellers. A majority of our revenue is derived from direct sales, which generate higher gross margins than sales made through resellers. Our sales organization includes systems engineers with deep technical expertise that provide pre-sales technical support. These systems engineers also assist with post-sales support. Our resellers receive an order from an end customer prior to placing an order with us, and we confirm the identification of or are aware of the end customer prior to accepting such orders. We use sales agents to assist our direct global sales force in the sales process with certain customers primarily located in the Latin America and Asia-Pacific regions. If a sales agent is engaged in the sales process, we receive the order directly from and sell the products and services directly to the end customer, and we pay a commission to the sales agent, calculated as a percentage of the related customer payment.

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Each of our sales teams is responsible for a geographic territory and/or has responsibility for a number of major direct end-customer accounts. We have a diverse, global customer base and our revenue by geographic region fluctuates from period to period based on the timing of customer projects. The percentages of our revenue derived from customers in each geographic region were as follows:

	Year Ended December 31,		
	2017	2016	2015
Revenue by geographic region:			
North America	57.4%	58.2%	20.0%
Latin America	11.5%	15.0%	32.1%
Europe, Middle East and Africa	17.5%	14.3%	27.8%
Asia-Pacific	13.6%	12.5%	20.1%
Total	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

Key Components of Our Results of Operations

Revenue

We generate product revenue from sales of our software-centric broadband products, including our CCAP solution and our DOCSIS 3.1 capabilities. The majority of our revenue is derived from sales of our CCAP solutions, particularly our C100G CCAP. We also generate product revenue from sales of additional line cards and software-based capacity expansions.

We generate service revenue from sales of initial maintenance and support services contracts, which are typically purchased by end customers in conjunction with our products, and from our customers' subsequent annual renewals of those contracts. We offer maintenance and support services under renewable, fee-based contracts, which include telephone support and unspecified software upgrades and updates provided on a when-and-if-available basis. To a lesser extent, we generate service revenue from sales of professional services, such as installation and configuration, and extended warranty services.

The sale of our software-centric broadband products generally includes a 90-day warranty on the software and a one-year warranty on the hardware component of the products, which includes repair or replacement of the applicable hardware. We record a warranty accrual for the initial software and hardware warranty included with our product sales and do not defer revenue. In addition, in conjunction with customers' renewals of maintenance and support services contracts, we offer an extended warranty for periods typically of one to three years for agreed-upon fees, which we record as service revenue.

Cost of Revenue

Our cost of product revenue consists primarily of the costs of procuring goods, such as chassis and line cards embedded with FPGAs, from our contract manufacturers and other suppliers. In addition, cost of product revenue includes salary and benefit expenses, including stock-based compensation, for manufacturing and supply-chain management personnel, allocated facilities-related costs, estimated warranty costs, third-party logistics costs, and estimated costs associated with excess and obsolete inventory.

Our cost of service revenue includes salary and benefit expenses, including stock-based compensation, for our maintenance and support services and professional services personnel, fees incurred for subcontracted professional services provided to our customers, and allocated facilities-related costs.

Gross Profit

Our product gross profit and gross margin have been, and may in the future be, influenced by several factors, including changes in the volume of our software-centric broadband products sold, product configuration,

sales of capacity expansions, geographic location of our customers, pricing due to competitive pressure, estimated warranty costs, inventory obsolescence, and favorable and unfavorable changes in inventory production volume and component costs. As some products mature, the average selling prices of those products may decline. Our service gross profit and gross margin have been, and may in the future be, influenced by the amount and timing of renewals of maintenance and support services contracts by customers, pricing due to competitive pressure and, to a lesser extent, the amount of professional services ordered by customers and performed by us. We expect that our gross margin will remain relatively stable in the near term, subject to quarter-to-quarter fluctuation, due to changes in the amount of our software-centric broadband products and capacity expansions sold.

Operating Expenses

Our operating expenses consist of research and development, sales and marketing, and general and administrative expenses.

Research and Development Expenses

Research and development expenses consist primarily of salary and benefit expenses, including stock-based compensation, for our employees engaged in research, design and development activities. Research and development expenses also include project-specific engineering services purchased from external vendors, prototype costs, depreciation expense, amortization of purchased intellectual property, allocated facilities-related costs and travel expenses.

We expect that our research and development costs will continue to increase in absolute dollars while remaining relatively stable as a percentage of revenue in the near term as we continue to make significant investments to enhance our software-centric broadband products and develop new software-centric broadband products and technologies, including our new wireless solutions.

Sales and Marketing Expenses

Sales and marketing expenses include salary and benefit expenses, including stock-based compensation, for employees and costs for contractors engaged in sales and marketing activities. Sales and marketing expenses also include commissions, calculated as a percentage of the related customer payment, to sales agents that assist us in the sales process with certain customers primarily located in the Latin America and Asia-Pacific regions. These sales agent commissions fluctuate from period to period based on the amount and timing of sales to the customers subject to sales agent commissions. Sales and marketing expenses also include marketing activities, such as trade shows, marketing programs and promotional materials, as well as allocated facilities-related costs. We are also establishing a new sales force to sell and undertake new marketing programs to promote our new wireless solutions.

We expect that our sales and marketing expenses will increase in absolute dollars while remaining relatively stable as a percentage of revenue in the near term as we continue to make investments in our sales and marketing organizations and expand our marketing programs and efforts to increase the market awareness and sales of our products and services.

General and Administrative Expenses

General and administrative expenses include salary and benefit expenses, including stock-based compensation, for employees engaged in general and administrative activities, as well as professional service fees, allocated facilities-related costs, insurance, travel and bad debt expenses related to accounts receivable.

We expect that our general and administrative expenses will increase in absolute dollars while remaining relatively stable as a percentage of revenue in the near term primarily due to our continued growth and the increased cost associated with being a public company.

Other Income (Expense), Net

Other income (expense), net consists of interest income from our investments in short-term financial instruments, such as certificates of deposit, money market mutual funds and commercial paper, and interest expense associated with our term loan facility, the mortgage on our corporate office and debt maintenance costs related to our revolving credit facility. Other income (expense), net also includes realized and unrealized gains and losses from foreign currency transactions. We hedge certain significant transactions denominated in currencies other than the U.S. dollar, and we expect to continue to do so to minimize our exposure to foreign currency fluctuations.

Provision for Income Taxes

We are subject to income taxes in the United States and the foreign jurisdictions in which we do business. These foreign jurisdictions have statutory tax rates different from those in the United States. Our effective tax rates will vary depending on the relative proportion of foreign to U.S. income, the utilization of foreign tax credits and research and development tax credits, changes in corporate structure, the amount and timing of certain employee stock-based compensation transactions, changes in the valuation of our deferred tax assets and changes in tax laws and interpretations. We plan to regularly assess the likelihood of outcomes that could result from the examination of our tax returns by the U.S. Internal Revenue Service, or IRS, and other tax authorities to determine the adequacy of our income tax reserves and expense. Should actual events or results differ from our then-current expectations, charges or credits to our provision for income taxes may become necessary. Any such adjustments could have a significant effect on our results of operations.

On December 22, 2017, the Tax Cuts and Jobs Act, or the TCJA, was enacted which, among other things, lowered the U.S. corporate income tax rate to 21% from 35% and established a modified territorial system requiring a mandatory deemed repatriation tax on undistributed earnings of foreign subsidiaries. Beginning in 2018, the TCJA also requires a minimum tax on certain future earnings generated by foreign subsidiaries while providing for future tax-free repatriation of such earnings through a 100% dividends-received deduction. While the reduction in the U.S. corporate tax rate under the TCJA is not effective until 2018, under GAAP, changes in tax rates are accounted for in the period enacted. Therefore, in accordance with Accounting Standards Codification, or ASC, Topic 740, *Income Taxes*, and Staff Accounting Bulletin 118, we recognized a provisional income tax charge in the fourth quarter of 2017 of \$14.1 million related to the TCJA based on our initial analysis using available information and estimates. The provisional charge is comprised of \$10.0 million related to the one-time deemed repatriation of accumulated earnings of foreign subsidiaries and related withholding taxes and \$4.1 million related primarily to the remeasurement of net deferred tax assets as a result of the reduction in the U.S. corporate income tax rate effected by the TCJA. As a result, applicable U.S. corporate and foreign income taxes have been provided on substantially all of our accumulated earnings of foreign subsidiaries previously considered indefinitely reinvested. Given the significant complexity of the TCJA, anticipated guidance from the U.S. Treasury Department about implementing the TCJA and the potential for additional guidance from the Securities and Exchange Commission, or the SEC, or the Financial Accounting Standards Board, or the FASB, related to the TCJA or additional information becoming available, our provisional income tax charge may be adjusted during 2018 and is expected to be finalized no later than the fourth quarter of 2018. Other provisions of the TCJA that impact future tax years are still being assessed.

In the third quarter of 2016, we began the process of restructuring our international operations, which over time is expected to reduce our effective tax rate; however, due to the timing of this restructuring program, the impact on our effective tax rate in 2016 was not fully realized. In addition, our 2016 effective tax rate and provision for income taxes reflected a non-recurring tax benefit for equitable adjustment payments to holders of our stock-based awards in connection with dividends declared by our board of directors. Our 2017 effective tax rate reflects the benefit of our international restructuring, and charges related to the TCJA, as well as a non-recurring tax benefit for equitable adjustment payments to holders of our stock based awards in connection with dividends declared by our board of directors. We expect that the favorable impact of the restructuring of our

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international operations on our effective tax rates will continue in future periods, subject to period to period variability related to the geographic distribution of earnings in foreign jurisdictions with statutory tax rates different from those in the United States.

Results of Operations

The following tables set forth our consolidated results of operations in dollar amounts and as percentage of total revenue for the periods shown:

	Year Ended December 31,		
	2017	2016	2015
	(in thousands)		
Revenue:			
Product	\$311,896	\$279,223	\$247,588
Service	39,679	36,905	24,862
Total revenue	351,575	316,128	272,450
Cost of revenue(1):			
Product	88,538	89,340	74,349
Service	4,973	8,477	5,265
Total cost of revenue	93,511	97,817	79,614
Gross profit	258,064	218,311	192,836
Operating expenses:			
Research and development(1)	60,677	49,210	37,155
Sales and marketing(1)	39,602	36,114	36,157
General and administrative(1)	21,563	18,215	16,453
Total operating expenses	121,842	103,539	89,765
Income from operations	\$136,222	\$114,772	\$103,071
Other income (expense), net	(13,404)	921	(1,408)
Income before provision for income taxes	122,818	115,693	101,663
Provision for income taxes	34,318	27,025	33,742
Net income	\$ 88,500	\$ 88,668	\$ 67,921

- (1) Includes stock-based compensation expense related to stock options, stock appreciation rights and restricted stock units granted to employees and non-employee consultants as follows:

	Year Ended December 31,		
	2017	2016	2015
	(in thousands)		
Cost of revenue	\$ 306	\$ 237	\$ 143
Research and development expense	2,864	2,306	1,843
Sales and marketing expense	1,112	1,147	775
General and administrative expense	4,854	4,614	4,560
Total stock-based compensation expense	\$9,136	\$8,304	\$7,321

	Year Ended December 31,		
	2017	2016	2015
	(as a percentage of total revenue)		
Revenue:			
Product	89%	88%	91%
Service	11	12	9
Total revenue	100	100	100
Cost of revenue:			
Product	25	28	27
Service	1	3	2
Total cost of revenue	27	31	29
Gross profit	73	69	71
Operating expenses:			
Research and development	17	16	14
Sales and marketing	11	11	13
General and administrative	6	6	6
Total operating expenses	35	33	33
Income from operations	39	36	38
Other income (expense), net	(4)	—	(1)
Income before provision for income taxes	35	37	37
Provision for income taxes	10	9	12
Net income	25%	28%	25%

Percentages in the table above are based on actual values. As a result, some totals may not sum due to rounding.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

	Year Ended December 31,				Change	
	2017		2016		Amount	%
	Amount	% of Total	Amount	% of Total		
	(dollars in thousands)					
Revenue:						
Product	\$311,896	88.7%	\$279,223	88.3%	\$32,673	11.7%
Service	39,679	11.3%	36,905	11.7%	2,774	7.5%
Total revenue	<u>\$351,575</u>	<u>100.0%</u>	<u>\$316,128</u>	<u>100.0%</u>	<u>\$35,447</u>	11.2%
Revenue by geographic region:						
North America	\$201,856	57.4%	\$183,941	58.2%	\$17,915	9.7%
Latin America	40,347	11.5%	47,314	15.0%	(6,967)	(14.7)%
Europe, Middle East and Africa	61,458	17.5%	45,205	14.3%	16,253	36.0%
Asia-Pacific	47,914	13.6%	39,668	12.5%	8,246	20.8%
Total revenue	<u>\$351,575</u>	<u>100.0%</u>	<u>\$316,128</u>	<u>100.0%</u>	<u>\$35,447</u>	11.2%

The increase in product revenue was primarily due to an increase in sales of our products to existing customers in North America, Asia-Pacific and Europe, Middle East and Africa as a result of an increase in the deployment of our software-centric broadband products in their networks and increased sales of software-enabled capacity expansions to provide their subscribers with greater bandwidth capacity. These increases were partially

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offset by a decrease in sales of our software-centric broadband products in Latin America, which we believe was primarily due to the timing of customer expenditures on network upgrades.

The increase in service revenue was primarily due to a \$3.8 million increase in maintenance and support services revenue due to an increase in our installed base of customers through the addition of new customers and from customers renewing their maintenance and support service contracts, partially offset by a \$1.1 million decrease in professional services revenue due to a decrease in customer projects requiring our assistance.

Cost of Revenue and Gross Profit

	Year Ended December 31,		Change	
	2017	2016	Amount	%
(dollars in thousands)				
Cost of revenue:				
Product	\$88,538	\$89,340	\$ (802)	(0.9)%
Service	4,973	8,477	(3,504)	(41.3)%
Total cost of revenue	<u>\$93,511</u>	<u>\$97,817</u>	<u>\$ (4,306)</u>	(4.4)%

The decrease in cost of product revenue was primarily due to a decrease in the proportion of our revenue derived from our hardware-based broadband products.

The decrease in cost of service revenue was primarily due to a \$2.1 million decrease in subcontracted professional services and a \$1.6 million decrease in personnel-related costs as a result of the transfer of certain personnel from our service and support department to our research and development department.

	Year Ended December 31,		Change	
	2017	2016	Amount	Gross Margin (bps)
(dollars in thousands)				
Gross profit:				
Product	\$223,358	\$189,883	\$33,475	360
Service	34,706	28,428	6,278	1,050
Total gross profit	<u>\$258,064</u>	<u>\$218,311</u>	<u>\$39,753</u>	430

The increase in product gross margin was primarily due to an increase in the proportion of our product revenue derived from higher margin software-based capacity expansions.

The increase in service gross margin was due to an increase in maintenance and support services revenue and a decrease in lower-margin professional services revenue.

Research and Development

	Year Ended December 31,		Change	
	2017	2016	Amount	%
(dollars in thousands)				
Research and development	\$60,677	\$49,210	\$11,467	23.3%
Percentage of revenue	17.3%	15.6%		

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The increase in research and development expense was due to a \$8.5 million increase in personnel-related costs (including the effect of a \$0.6 million increase in stock-based compensation expense) as a result of the increase in the headcount of our research and development personnel from 328 to 399 to support the development of our new wireless and software-centric broadband products and to enhance our existing software-centric broadband products, a \$1.4 million increase in depreciation expense for research and development related assets, a \$1.1 million increase in prototype development costs for new broadband products and a \$0.5 million increase in facilities and infrastructure expenses.

Sales and Marketing

	Year Ended December 31,		Change	
	2017	2016	Amount	%
	(dollars in thousands)			
Sales and marketing	\$39,602	\$36,114	\$3,488	9.7%
Percentage of revenue	11.3%	11.4%		

The increase in sales and marketing expense was due to a \$3.4 million increase in sales agent commissions and a \$1.0 million increase in personnel-related costs due to an increase in headcount, which were partially offset by a \$0.7 million decrease in marketing costs related to a reduction in trade show and event expenses and a \$0.2 million decrease in facilities and infrastructure expenses.

General and Administrative

	Year Ended December 31,		Change	
	2017	2016	Amount	%
	(dollars in thousands)			
General and administrative	\$21,563	\$18,215	\$3,348	18.4%
Percentage of revenue	6.1%	5.8%		

The increase in general and administrative expense was primarily due to a \$3.3 million increase in personnel-related costs due to an increase in headcount to support the continued growth in our business.

Other Income (Expense), Net

	Year Ended December 31,		Change	
	2017	2016	Amount	%
	(dollars in thousands)			
Other income (expense), net	\$(13,404)	\$921	\$(14,325)	(1555.4)%
Percentage of revenue	(3.8)%	0.3%		

The change from a net other income of \$0.9 million to a net other expense of \$13.4 million was primarily due to a \$16.6 million increase in interest expense attributable to our term loan facility entered into in December 2016, partially offset by a \$1.2 million increase in interest income due to an increase in interest rates and an increase in our portfolio of cash equivalents and a \$1.2 million increase in foreign currency gains due to appreciation of the Euro and the impact thereof on our foreign-denominated cash and receivables.

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Provision for Income Taxes

	Year Ended December 31,		Change	
	2017	2016	Amount	%
	(dollars in thousands)			
Provision for income taxes	\$34,318	\$27,025	\$ 7,293	27.0%
Effective tax rate	27.9%	23.4%		

The 4.5% increase in our effective tax rate includes the impact of the TCJA that resulted in an 11.5% increase in our effective tax rate, which was partially offset by an increase in the benefit of the foreign rate differential of 5.0% due to the restructuring of our international operations and an increase in research and development tax credits.

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Revenue

	Year Ended December 31,				Change	
	2016		2015		Amount	%
	Amount	% of Total	Amount	% of Total		
	(dollars in thousands)					
Revenue:						
Product	\$279,223	88.3%	\$247,588	90.9%	\$ 31,635	12.8%
Service	36,905	11.7%	24,862	9.1%	12,043	48.4%
Total revenue	<u>\$316,128</u>	<u>100.0%</u>	<u>\$272,450</u>	<u>100.0%</u>	<u>\$ 43,678</u>	<u>16.0%</u>
Revenue by geographic region:						
North America	\$183,941	58.2%	\$ 54,518	20.0%	\$129,423	237.4%
Latin America	47,314	15.0%	87,382	32.1%	(40,068)	(45.9)%
Europe, Middle East and Africa	45,205	14.3%	75,767	27.8%	(30,562)	(40.3)%
Asia-Pacific	39,668	12.5%	54,783	20.1%	(15,115)	(27.6)%
Total revenue	<u>\$316,128</u>	<u>100.0%</u>	<u>\$272,450</u>	<u>100.0%</u>	<u>\$ 43,678</u>	<u>16.0%</u>

The increase in product revenue was due to an increase in sales of our software-centric broadband products in North America primarily due to an increase of \$74.2 million in sales to new customers, which predominantly deployed our CCAP solution that includes DOCSIS 3.1 capabilities, and an increase of \$45.7 million in sales of our CCAP solutions to existing customers to increase the proportion of their networks using our products to provide their subscribers with greater bandwidth capacity through capacity expansions. These increases were partially offset by an aggregate decrease of \$88.3 million in product sales in all other regions resulting primarily from decreases in purchases by customers in those regions of capacity expansions from us, which we believe was primarily due to the timing of customer expenditures on network upgrades.

The increase in service revenue was primarily due to a \$9.3 million increase in maintenance and support services revenue due to an increase in our installed base of customers through the addition of new customers and from customers renewing their maintenance and support service contracts as well as a \$2.8 million increase in professional services revenue related to customer installations in North America to deploy our DOCSIS 3.1 capabilities.

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Cost of Revenue and Gross Profit

	Year Ended December 31,		Change	
	2016	2015	Amount	%
(dollars in thousands)				
Cost of revenue:				
Product	\$89,340	\$74,349	\$14,991	20.2%
Service	8,477	5,265	3,212	61.0%
Total cost of revenue	<u>\$97,817</u>	<u>\$79,614</u>	<u>\$18,203</u>	22.9%

The increase in cost of product revenue was primarily due to an increase in the quantity of our software-centric broadband products sold and an increase in personnel-related costs resulting from hiring additional employees.

The increase in cost of service revenue was primarily due to a \$2.5 million increase in subcontracted professional services related to customer deployments of our DOCSIS 3.1 capabilities and a \$0.7 million increase in personnel-related costs resulting from hiring additional employees.

	Year Ended December 31,				Change	
	2016		2015			
	Amount	Gross Margin	Amount	Gross Margin	Amount	Gross Margin (bps)
Gross profit:						
Product	\$189,883	68.0%	\$173,239	70.0%	\$16,644	(200)
Service	28,428	77.0%	19,597	78.8%	8,831	(180)
Total gross profit	\$218,311	69.1%	\$192,836	70.8%	\$25,475	(170)

The decrease in product gross margin was primarily due to higher cost of goods related to initial sales of our software-centric broadband products as a result of the significant amount of hardware in these sales.

Service gross margin declined due to an increase in professional services revenue as a percentage of total service revenue during the year ended December 31, 2016.

Research and Development

	Year Ended December 31,		Change	
	2016	2015	Amount	%
(dollars in thousands)				
Research and development	\$49,210	\$37,155	\$12,055	32.4%
Percentage of revenue	15.6%	13.6%		

The increase in research and development expense was due to a \$9.6 million increase in personnel-related costs (including a \$0.5 million increase in stock-based compensation expense) as a result of the increase in the headcount of our research and development personnel from 256 to 328 to support the development of our new wireless and software-centric broadband products and to enhance our existing software-centric broadband products, a \$1.2 million increase in facilities and infrastructure expenses and a \$1.2 million increase in prototype development costs for new broadband products.

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Sales and Marketing

	Year Ended December 31,		Change	
	2016	2015	Amount	%
	(dollars in thousands)			
Sales and marketing	\$36,114	\$36,157	\$ (43)	(0.1)%
Percentage of revenue	11.4%	13.3%		

The slight decrease in sales and marketing expense was due to a \$7.8 million decrease in sales agent commissions related to a decrease in sales in Latin America, which was partially offset by a \$6.8 million increase in personnel-related costs (including a \$0.4 million increase in stock-based compensation expense) as a result of the increase in the headcount of our sales and marketing personnel from 94 to 114 in order to increase the sales force associated with our software-centric broadband products and to develop a new sales force assigned to our new wireless solutions and a \$0.9 million increase in marketing costs related to trade shows and events to promote our solutions.

General and Administrative

	Year Ended December 31,		Change	
	2016	2015	Amount	%
	(dollars in thousands)			
General and administrative	\$18,215	\$16,453	\$1,762	10.7%
Percentage of revenue	5.8%	6.0%		

The increase in general and administrative expense was primarily due to a \$1.5 million increase in personnel-related costs (including a \$0.1 million increase in stock-based compensation expense) to support the continued growth in our business and a \$0.3 million increase in facilities and infrastructure expenses.

Other Income (Expense), Net

	Year Ended December 31,		Change	
	2016	2015	Amount	%
	(dollars in thousands)			
Other income (expense), net	\$921	\$(1,408)	\$2,329	165.4%
Percentage of revenue	0.3%	0.5%		

The change from a net other expense of \$1.4 million to a net other income of \$0.9 million was primarily due to a \$2.7 million decrease in foreign currency losses resulting from a lower carrying value of foreign-denominated cash and receivables during the year ended December 31, 2016 as compared to the year ended December 31, 2015 and a \$0.3 million increase in interest income due to an increase in our portfolio of cash equivalents and marketable securities, both partially offset by a \$0.7 million increase in interest expense primarily attributable to \$300.0 million of borrowings under the term loan facility we entered into in December 2016.

Provision for Income Taxes

	Year Ended December 31,		Change	
	2016	2015	Amount	%
	(dollars in thousands)			
Provision for income taxes	\$27,025	\$33,742	\$(6,717)	(19.9)%
Effective tax rate	23.4%	33.2%		

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The 9.8% decrease in our effective tax rate primarily resulted from the tax benefits from certain employee stock-based compensation transactions, including equitable adjustment payments to holders of our stock-based awards, during the year ended December 31, 2016 related to our adoption, effective as of January 1, 2016, of a new share-based payment accounting standard. In particular, the tax benefit of equitable adjustment payments in 2016 contributed to a 7.0% non-recurring reduction in our effective tax rate. The decrease in our effective tax rate was also due in part to an increase in the benefit of the foreign tax rate differential, reflecting the partial effect of a process we began in the third quarter of 2016 to restructure our international operations.

Consolidated Quarterly Results of Operations

The following table sets forth our unaudited quarterly consolidated statement of operations data, in both dollar amounts and as a percentage of total revenue, for each of the eight fiscal quarters in the period ended December 31, 2017. In management's opinion, the quarterly statement of operations data has been prepared on the same basis as the audited consolidated financial statements included in this prospectus and reflect all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of this data. This information should be read together with our consolidated financial statements and related notes appearing elsewhere in this prospectus. Our operating results may fluctuate due to a variety of factors. The results of historical periods are not necessarily indicative of the results of operations for a full year or any future period.

	Three Months Ended							
	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017	Mar. 31, 2017	Dec. 31, 2016	Sept. 30, 2016	June 30, 2016	Mar. 31, 2016
	(in thousands)							
Revenue:								
Product	\$106,741	\$84,196	\$55,750	\$65,209	\$87,460	\$58,553	\$56,777	\$76,433
Service	11,221	10,063	10,875	7,520	11,766	9,995	8,148	6,996
Total revenue	<u>117,962</u>	<u>94,259</u>	<u>66,625</u>	<u>72,729</u>	<u>99,226</u>	<u>68,548</u>	<u>64,925</u>	<u>83,429</u>
Cost of revenue:								
Product	25,673	23,824	19,909	19,132	20,547	19,263	22,427	27,103
Services	1,336	1,442	938	1,257	2,494	2,578	1,997	1,408
Total cost of revenue	<u>27,009</u>	<u>25,266</u>	<u>20,847</u>	<u>20,389</u>	<u>23,041</u>	<u>21,841</u>	<u>24,424</u>	<u>28,511</u>
Gross profit	<u>90,953</u>	<u>68,993</u>	<u>45,778</u>	<u>52,340</u>	<u>76,185</u>	<u>46,707</u>	<u>40,501</u>	<u>54,918</u>
Operating expenses:								
Research and development	16,765	15,217	14,227	14,468	11,997	12,451	12,573	12,189
Sales and marketing	12,619	8,747	8,156	10,080	8,825	9,520	9,125	8,644
General and administrative	7,176	4,866	4,526	4,995	4,683	4,520	4,665	4,347
Total operating expenses	<u>36,560</u>	<u>28,830</u>	<u>26,909</u>	<u>29,543</u>	<u>25,505</u>	<u>26,491</u>	<u>26,363</u>	<u>25,180</u>
Income from operations	54,393	40,163	18,869	22,797	50,680	20,216	14,138	29,738
Other income (expense), net	(3,546)	(3,552)	(2,766)	(3,540)	(32)	356	278	319
Income before provision for (benefit from) income taxes	50,847	36,611	16,103	19,257	50,648	20,572	14,416	30,057
Provision for (benefit from) income taxes	21,984	12,288	(1,057)	1,103	10,797	5,471	2,412	8,345
Net income	<u>\$ 28,863</u>	<u>\$24,323</u>	<u>\$17,160</u>	<u>\$18,154</u>	<u>\$39,851</u>	<u>\$15,101</u>	<u>\$12,004</u>	<u>\$21,712</u>

	Three Months Ended							
	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017	Mar. 31, 2017	Dec. 31, 2016	Sept. 30, 2016	June 30, 2016	Mar. 31, 2016
Revenue:								
Product	90%	89%	84%	90%	88%	85%	87%	92%
Service	10	11	16	10	12	15	13	8
Total revenue	100	100	100	100	100	100	100	100
Cost of revenue:								
Product	22	25	30	26	21	28	35	32
Service	1	2	1	2	3	4	3	2
Total cost of revenue	23	27	31	28	23	32	38	34
Gross profit	77	73	69	72	77	68	62	66
Operating expenses:								
Research and development	14	16	21	20	12	18	19	15
Sales and marketing	11	9	12	14	9	14	14	10
General and administrative	6	5	7	7	5	7	7	5
Total operating expenses	31	31	40	41	26	39	41	30
Income from operations	46	43	28	31	51	29	22	36
Other income (expense), net	(3)	(4)	(4)	(5)	—	1	—	—
Income before provision for (benefit from) income taxes	43	39	24	26	51	30	22	36
Provision for (benefit from) income taxes	19	13	(2)	2	11	8	4	10
Net income	24%	26%	26%	25%	40%	22%	18%	26%

Percentages in the table above are based on actual values. As a result, some totals may not sum due to rounding.

Quarterly Revenue and Cost of Revenue

Our revenue has been influenced over the periods presented by demand for and sales of our software-centric broadband products, including our CCAP solution and DOCSIS 3.1 capabilities, an increase in our sales of software-based capacity expansions, and an increase in our maintenance and support services revenue due to an increase in the supported installed base of equipment. An overall increase in demand for our products over the periods presented, combined with the introduction of new products, has contributed to the overall increase in our revenue.

We believe that seasonality generally causes product revenue to be greater for the first and fourth quarters of our year as compared to the second and third quarters. We believe that this seasonality results primarily from the procurement, budgeting and deployment cycles of many of our customers.

The increase in product revenue for the three months ended December 31, 2017 and the three months ended September 30, 2017 was primarily attributable to sales of our CCAP solution with DOCSIS 3.1 capabilities to an existing customer in North America.

Quarterly Gross Profit

Our gross profit and gross margin are primarily driven by the mix of products sold, the amount of capacity expansions sold, and the amount of maintenance and support services revenue recognized for the period. The

decreases in gross profit and gross margin for the three months ended June 30, 2016 and March 31, 2016 were primarily due to lower gross profit from the initial sales to new customers of our broadband products as a result of the amount of hardware in these sales. The increases in gross profit and gross margin for the three months ended December 31, 2017 and the three months ended December 31, 2016 were primarily due to an increase in sales of software-based capacity expansions to customers in North America.

Quarterly Operating Expenses

Our operating expenses have generally increased over the periods presented primarily related to the increase in personnel and the related salary and benefit costs to support the growth of our business and the development of new products. Our total headcount was 680, 604, 481 and 352 as of December 31, 2017, 2016 and 2015 and December 31, 2014, respectively. The increase in research and development costs was primarily attributable to increased personnel added throughout each of the quarters presented to support the development of our new wireless and software-centric broadband products and to enhance our existing software-centric broadband products. Sales and marketing expenses and general and administrative expenses have increased over the periods presented primarily due to increases in personnel to support the growth of our business.

Quarterly Other Income (Expense), Net

On December 20, 2016, we entered into a credit agreement that included a term loan facility under which we borrowed \$300.0 million. Borrowings under the term loan facility bear interest at a floating rate, which can be either a Eurodollar rate plus an applicable margin or, at our option, a base rate plus an applicable margin. As of December 31, 2017 and December 31, 2016, the interest rate for the term loan facility was 5.69% and 5.00% per annum, respectively, which was based on a one-month Eurodollar rate at the applicable floor of 1.69% and the three-month Eurodollar rate of 1.00% per annum, respectively, plus the applicable margin of 4.00% per annum for Eurodollar rate loans. Other income (expense), net for the three months ended December 31, 2017, September 30, 2017, June 30, 2017, March 31, 2017 and December 31, 2016 included interest expense of \$4.4 million, \$4.3 million, \$4.1 million, \$4.0 million and \$0.5 million respectively, related to the term loan facility.

Provision for (benefit from) income taxes

In the three months ended December 31, 2017, we recognized a provisional income tax charge of \$14.1 million related to the TCJA based on our initial analysis using available information and estimates. The provisional charge is comprised of \$10.0 million related to the one-time deemed repatriation of accumulated earnings of foreign subsidiaries and related withholding taxes and \$4.1 million related primarily to the remeasurement of net deferred tax assets as a result of the reduction in the U.S. corporate income tax rate effected by the TCJA. During the three months ended September 30, 2017, we revised our estimated effective tax rate to reflect our revised forecast of the geographic allocation of our taxable income, and during the three months ended June 30, 2017 and March 31, 2017, we recorded discrete tax benefits from certain employee stock-based compensation transactions, including equitable adjustment payments to holders of our stock-based awards.

Liquidity and Capital Resources

Since our inception, we have primarily funded our operations through issuances of shares of our convertible preferred stock and cash flows from operations. In addition, on December 20, 2016, we entered into a credit agreement that included a term loan facility under which we borrowed \$300.0 million. The following tables set forth our cash, cash equivalents and marketable securities and working capital as of December 31, 2017, 2016 and 2015 as well as our net cash flows for the years ended December 31, 2017, 2016 and 2015:

	As of December 31,		
	2017	2016	2015
	(in thousands)		
Consolidated Balance Sheet Data:			
Cash, cash equivalents and marketable securities	\$260,820	\$343,946	\$ 92,496
Working capital	324,710	286,652	162,981

	Year Ended December 31,		
	2017	2016	2015
	(in thousands)		
Consolidated Cash Flow Data:			
Net cash provided by operating activities	\$ 95,008	\$110,780	\$ 24,602
Net cash provided by (used in) investing activities	7,575	(21,811)	(15,503)
Net cash (used in) provided by financing activities	(172,661)	149,368	7,304

As of December 31, 2017, we had cash and cash equivalents of \$260.8 million and net accounts receivable of \$127.3 million. We maintain a \$25.0 million revolving credit facility under which \$24.0 million was available and \$1.0 million was used as collateral for a stand-by letter of credit as of December 31, 2017.

Of our total cash and cash equivalents of \$260.8 million as of December 31, 2017, \$31.3 million was held by our foreign subsidiaries. The TCJA established a modified territorial system requiring a mandatory deemed repatriation tax on undistributed earnings of foreign subsidiaries. In December 2017, we recorded a provisional charge related to a one-time deemed repatriation of accumulated earnings of foreign subsidiaries and related withholding taxes. As a result, applicable U.S. corporate and foreign income taxes have been provided on substantially all of our accumulated earnings of foreign subsidiaries previously considered indefinitely reinvested. Beginning in 2018, the TCJA also requires a minimum tax on certain future earnings generated by foreign subsidiaries while providing future tax-free repatriation of such earnings through a 100% dividends-received deduction. We are still evaluating whether to change our indefinite reinvestment assertion in light of the TCJA and consider that conclusion to be incomplete under guidance issued by the SEC. If we subsequently change our assertion during the measurement period, such changes will be accounted for through an adjustment to the provisional income tax charge during 2018, which is expected to be finalized no later than the fourth quarter of 2018.

We believe our existing cash and cash equivalents, anticipated cash flows from future operations and liquidity available from our revolving credit facility will be sufficient to meet our working capital and capital expenditure needs and debt service obligations for at least the next 12 months. Our future capital requirements may vary materially from those currently planned and will depend on many factors, including our rate of revenue growth, the timing and extent of spending on research and development efforts and other business initiatives, purchases of capital equipment to support our growth, the expansion of sales and marketing activities, expansion of our business through acquisitions or our investments in complementary products, technologies or businesses, the use of working capital to purchase additional inventory, the timing of new product introductions, market acceptance of our products and overall economic conditions. To the extent that current and anticipated future sources of liquidity are insufficient to fund our future business activities and requirements, we may be required to seek additional equity or debt financing. In the event additional financing is required from outside sources, we may not be able to raise it on terms acceptable to us or at all.

From our inception through December 31, 2017, our board of directors has declared a special dividend on five separate occasions and has approved cash payments to the holders of our stock options, stock appreciation rights, or SARs, and restricted stock units, or RSUs, as equitable adjustments in connection with these special dividends. The dividend payments totaled \$206.4 million, \$137.4 million and \$0.3 million in the years ended December 31, 2017, 2016 and 2015, respectively. The equitable adjustment payments totaled \$40.2 million, \$4.9 million and \$0.4 million in the years ended December 31, 2017, 2016 and 2015, respectively. As of December 31, 2017, there were \$9.8 million of equitable adjustment payments that had been approved by our board of directors that had not yet been paid to the holders of our stock options, SARs and RSUs. These equitable adjustment payments will be paid to the holders of the applicable equity awards as they vest through 2021. We do not anticipate declaring cash dividends in the foreseeable future. Any future determination to declare dividends will be subject to the discretion of our board of directors and applicable law, and will depend on various factors, including our results of operations, financial condition, prospects and any other factors deemed relevant by our board of directors.

Cash Flows

Operating Activities

Our primary source of cash from operating activities has been from cash collections from our customers. We expect cash inflows from operating activities to be affected by increases in sales and timing of collections and by purchases and shipments of inventory. Our primary uses of cash from operating activities have been for personnel costs and investment in sales and marketing and research and development. We expect cash outflows from operating activities to increase as a result of further investment in research and development and sales and marketing and increases in personnel costs as we continue to enhance our products and introduce new products in an effort to continue to expand our business.

During the year ended December 31, 2017, cash provided by operating activities was \$95.0 million, primarily resulting from our net income of \$88.5 million and net non-cash charges of \$32.4 million, both partially offset by net cash used by changes in our operating assets and liabilities of \$25.9 million. The net cash used by changes in our operating assets and liabilities during the year ended December 31, 2017 was primarily due to a \$25.7 million increase in accounts receivable due to an increase in sales and timing of the related collections; a \$25.6 million decrease in deferred revenue primarily due to recognition of \$14.4 million of revenue upon the product acceptance by a customer in Asia-Pacific and recognition of \$8.5 million of revenue upon the expiration of a trade-in right for a customer in North America; a \$6.5 million decrease in accounts payable primarily attributable to timing of our payments for purchases of inventory; and a \$3.2 million decrease in accrued income taxes due to the timing of payments. These uses of cash were partially offset by a \$21.9 million decrease in inventory due to shipments of our software-centric broadband products to customers; a \$10.2 million increase in accrued expenses and other current liabilities, which included an increase of \$8.4 million for accrued customer incentives; and a \$3.5 million decrease in prepaid expenses and other current assets.

During the year ended December 31, 2016, cash provided by operating activities was \$110.8 million, primarily resulting from our net income of \$88.7 million, net non-cash charges of \$9.1 million and net cash provided by changes in our operating assets and liabilities of \$13.0 million. The net cash provided by changes in our operating assets and liabilities during the year ended December 31, 2016 was primarily due to a \$17.3 million increase in deferred revenue due to the deferral of the revenue recognition for certain sales transactions due to customer acceptance provisions or future delivery obligations and an increase in sales of maintenance and support service contracts as a result of an increase in our installed base; a \$15.8 million increase in accrued expenses and other current liabilities, which included an increase of \$15.4 million for accrued customer incentives; a \$14.5 million increase in accounts payable primarily attributable to timing of our payments for purchases of inventory; and a \$6.9 million increase in accrued income taxes as a result of an increase in taxable income. These sources of cash were partially offset by a \$22.8 million increase in inventory due to the anticipated growth in our business and a \$16.3 million increase in accounts receivable due to an increase in sales and timing of the related collections.

During the year ended December 31, 2015, cash provided by operating activities was \$24.6 million, primarily resulting from our net income of \$67.9 million and net non-cash charges of \$12.7 million, both partially offset by net cash used by changes in our operating assets and liabilities of \$56.0 million. The net cash used by changes in our operating assets and liabilities during the year ended December 31, 2015 was primarily due to a \$28.6 million decrease in deferred revenue primarily due to recognition of \$23.1 million of revenue upon the product acceptance by a new customer in Europe that deployed our CCAP solution, a \$10.8 million decrease in accrued income taxes due to the timing of tax payments, a \$17.4 million increase in inventory for anticipated growth in our business and a \$9.7 million increase in accounts receivable due to an increase in sales and timing of the related collections. These uses of cash were partially offset by a \$2.7 million increase in accounts payable primarily attributable to the timing of our payments for the purchases of inventory and an \$8.0 million increase in accrued expenses and other current liabilities, which included an increase of \$3.4 million for personnel-related accrued liabilities, such as accrued salaries and bonuses, due to the growth in headcount.

Investing Activities

Our investing activities have consisted primarily of expenditures for lab and computer equipment and software to support the development of new products and increase our manufacturing capacity to meet customer demand for our products. In addition, our investing activities include expansion of and improvements to our facilities. As our business expands, we expect that we will continue to invest in these areas. Our investing activities in 2015 also included the purchase of our corporate offices.

Net cash provided by investing activities during the year ended December 31, 2017 was \$7.6 million and consisted of \$14.6 million of proceeds from maturities of marketable securities, partially offset by \$7.0 million for purchases of property and equipment.

Net cash used in investing activities during the year ended December 31, 2016 was \$21.8 million and consisted of \$14.4 million for purchases of marketable securities and \$7.4 million for purchases of property and equipment.

Net cash used in investing activities during the year ended December 31, 2015 was \$15.5 million for purchases of property and equipment, consisting primarily of the purchase of and improvements to our corporate offices totaling \$10.4 million during that period.

Financing Activities

Net cash used in financing activities during the year ended December 31, 2017 was \$172.7 million and consisted primarily of dividend and equitable adjustment payments of \$246.6 million, payment of taxes on behalf of our employees related to net share settlement of equity awards of \$4.0 million, principal repayments of our term loan facility and commercial mortgage of \$3.3 million and payments of initial public offering costs of \$2.4 million, partially offset by proceeds received from our initial public offering, net of underwriting discounts and commissions, of \$83.4 million and proceeds from the exercise of stock options of \$0.3 million.

Net cash provided by financing activities during the year ended December 31, 2016 was \$149.4 million and consisted primarily of net proceeds from borrowings under our term loan facility of \$292.2 million and proceeds from the exercise of stock options of \$0.6 million, both partially offset by dividend and equitable adjustment payments of \$142.3 million and payments of initial public offering costs of \$0.5 million.

Net cash provided by financing activities during the year ended December 31, 2015 was \$7.3 million and consisted primarily of proceeds of \$7.9 million from the commercial mortgage on our corporate offices, partially offset by \$0.7 million of dividend and equitable adjustment payments.

Commercial Mortgage Loan

In July 2015, we entered into an \$8.0 million commercial mortgage loan agreement. The annual interest rate on the loan is 3.5%, and the loan is repayable in 60 monthly installments of principal and interest based on a 20-year amortization schedule. The loan is secured by the land and building, which are our corporate offices, purchased in March 2015, and contains annual affirmative, negative and financial covenants, including maintenance of a minimum debt service ratio. We were in compliance with all the covenants of the mortgage loan as of December 31, 2017 and 2016. As of December 31, 2017 and 2016, the outstanding principal amount under the mortgage loan was \$7.3 million and \$7.6 million, respectively.

Term Loan and Revolving Credit Facilities

On December 20, 2016, we entered into a credit agreement with JPMorgan Chase Bank, N.A., as administrative agent, various lenders and JPMorgan Chase Bank, N.A. and Barclays Bank PLC, as joint lead arrangers and joint bookrunners, providing for:

- a term loan facility of \$300.0 million and
- a revolving credit facility of up to \$25.0 million in revolving credit loans and letters of credit.

As of December 31, 2017 and 2016, we had borrowings of \$297.0 million and \$300.0 million, respectively, outstanding under the term loan facility and we did not have any outstanding borrowings under the revolving credit facility; however, we had used \$1.0 million under the revolving credit facility for a stand-by letter of credit that serves as collateral for a stand-by letter of credit issued by Bank of America to one of our customers pursuant to a contractual performance guarantee. In addition, we may, subject to certain conditions, including the consent of the administrative agent and the institutions providing such increases, increase the facilities by an unlimited amount so long as we are in compliance with specified leverage ratios, or otherwise by up to \$70.0 million.

Borrowings under the facilities bear interest at a floating rate, which can be either a Eurodollar rate plus an applicable margin or, at our option, a base rate (defined as the highest of (x) the JPMorgan Chase, N.A. prime rate, (y) the federal funds effective rate, plus one-half percent (0.50%) per annum and (z) a one-month Eurodollar rate plus 1.00% per annum) plus an applicable margin. The applicable margin for borrowings under the term loan facility is 4.00% per annum for Eurodollar rate loans (subject to a 1.00% per annum interest rate floor) and 3.00% per annum for base rate loans. As a result of the completion of our initial public offering in December 2017, the applicable margin for borrowings under the revolving credit facility is 1.75% per annum for Eurodollar rate loans and 0.75% per annum for base rate loans, subject to reduction based on our maintaining of specified net leverage ratios. The interest rates payable under the facilities are subject to an increase of 2.00% per annum during the continuance of any payment default.

For Eurodollar rate loans, we may select interest periods of one, two, three or six months or, with the consent of all relevant affected lenders, twelve months. Interest will be payable at the end of the selected interest period, but no less frequently than every three months within the selected interest period. Interest on any base rate loan is not set for any specified period and is payable quarterly. We have the right to convert Eurodollar rate loans into base rate loans and the right to convert base rate loans into Eurodollar rate loans at our option, subject, in the case of Eurodollar rate loans, to prepayment penalties if the conversion is effected prior to the end of the applicable interest period. As of December 31, 2017, the interest rate on our borrowings under the term loan facility was 5.69% per annum, which was based on a three-month Eurodollar rate of 1.69% per annum plus the applicable margin of 4.00% per annum for Eurodollar rate loans. As of December 31, 2016, the interest rate on the term loans was 5.00% per annum, which was based on a one-month Eurodollar rate at the applicable floor of 1.00% per annum plus the applicable margin of 4.00% per annum for Eurodollar rate loans.

The revolving credit facility also requires payment of quarterly commitment fees at a rate of 0.25% per annum on the difference between committed amounts and amounts actually borrowed under the facility and customary letter of credit fees.

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The term loan facility matures on December 20, 2023 and the revolving credit facility matures on December 20, 2021. The term loan facility is subject to amortization in equal quarterly installments, which commenced on March 31, 2017, of principal in an annual aggregate amount equal to 1.0% of the original principal amount of the term loans of \$300.0 million, with the remaining outstanding balance payable at the date of maturity.

Voluntary prepayments of principal amounts outstanding under the term loan facility are permitted at any time; however, if a prepayment of principal is made with respect to a Eurodollar loan on a date other than the last day of the applicable interest period, we are required to compensate the lenders for any funding losses and expenses incurred as a result of the prepayment. Prior to the revolving credit facility maturity date, funds borrowed under the revolving credit facility may be borrowed, repaid and reborrowed, without premium or penalty.

In addition, we are required to make mandatory prepayments under the facilities with respect to (i) 100% of the net cash proceeds from certain asset dispositions (including casualty and condemnation events) by us or certain of our subsidiaries, subject to certain exceptions and reinvestment provisions, (ii) 100% of the net cash proceeds from the issuance or incurrence of any additional debt by us or certain of our subsidiaries, subject to certain exceptions, and (iii) 50% of our excess cash flow, as defined in the credit agreement, subject to reduction upon our achievement of specified performance targets.

The facilities are secured by, among other things, a first priority security interest, subject to permitted liens, in substantially all of our assets and all of the assets of certain of our subsidiaries and a pledge of certain of the stock of certain of our subsidiaries, in each case subject to specified exceptions. The facilities contain customary affirmative and negative covenants, including certain restrictions on our ability to pay dividends, and, with respect to the revolving credit facility, a financial covenant requiring us to maintain a specified total net leverage ratio in the event that on the last day of any fiscal quarter we have utilized more than 30% of our borrowing capacity under the facility. We were in compliance with all of the applicable covenants of the facilities as of December 31, 2017 and 2016. As of December 31, 2017 and 2016, we had not utilized more than 30% of our borrowing capacity under the revolving credit facility and compliance with the financial covenant was not applicable.

In connection with entering into the facilities in December 2016, we terminated our revolving credit facility with Bank of America. We did not have any outstanding borrowings under the Bank of America revolving credit facility at the time of termination.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations and commitments as of December 31, 2017.

	Payments Due by Period				
	Total	Less than 1 Year	1 to 3 Years	4 to 5 Years	More than 5 Years
			(in thousands)		
Debt obligations—Term loans ⁽¹⁾	\$396,923	\$20,079	\$39,685	\$38,946	\$298,213
Debt obligations—Commercial mortgage ⁽²⁾	7,892	556	7,336	—	—
Operating leases ⁽³⁾	2,461	857	1,197	407	—
Total	<u>\$407,276</u>	<u>\$21,492</u>	<u>\$48,218</u>	<u>\$39,353</u>	<u>\$298,213</u>

- (1) Amounts in the table reflect the contractually required principal and interest payable pursuant to outstanding borrowings under our term loan facility. For purposes of this table, the interest due under the term loan facility was calculated using an assumed interest rate of 5.69% per annum, which was the interest rate in effect as of December 31, 2017.

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- (2) Amounts in the table reflect the contractually required principal and interest payable pursuant to outstanding borrowings under our commercial mortgage.
- (3) Amounts in the table reflect payments due for our lease of manufacturing, warehouse and office space in the United States, China, Spain and Ireland under non-cancelable operating leases that expire in 2021, 2019, 2022 and 2026, respectively. The Ireland lease provides us the right to terminate in 2021.

We enter into purchase agreements with our contract manufacturers and suppliers, generally with terms of a year or more. We have no minimum purchase requirements under these agreements.

The contractual obligations table above excludes \$7.7 million of long term taxes payable recorded as part of a provisional charge in the fourth quarter of 2017 for the mandatory deemed repatriation tax on undistributed earnings of foreign subsidiaries under the TCJA. The deemed repatriation was estimated based on our initial analysis in accordance with ASC Topic 740, *Income Taxes*, and Staff Accounting Bulletin 118 and is expected to be paid over the next eight years. Given the significant complexity of the TCJA, anticipated guidance from the U.S. Treasury Department about implementing the TCJA and the potential for additional guidance from the SEC or the FASB related to the TCJA or additional information becoming available, our provisional charge may be adjusted during 2018 and is expected to be finalized no later than the fourth quarter of 2018.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America, or GAAP. In preparing our consolidated financial statements, we make estimates, assumptions and judgments that can have a significant effect on our reported revenue, results of operations and net income or loss, as well as on the value of certain assets and liabilities on our balance sheet during and as of the reporting periods. These estimates, assumptions and judgments are necessary because future events and their effects on our results and the value of our assets cannot be determined with certainty, and are made based on our historical experience and on other assumptions that we believe to be reasonable under the circumstances. We evaluate our estimates and assumptions on an ongoing basis. These estimates may change as new events occur or additional information is obtained, and we may periodically be faced with uncertainties, the outcomes of which are not within our control and may not be known for a prolonged period of time. As the use of estimates is inherent in the financial reporting process, actual results could differ from those estimates.

While our significant accounting policies are described in more detail in Note 2 to our consolidated financial statements appearing at the end of this prospectus, we believe that the following accounting policies are those most critical to the judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition

We generate revenue from sales of our broadband products, along with associated maintenance and support services, and, to a lesser extent, from sales of professional services and extended warranty services. We also generate revenue from sales of additional line cards and software-based capacity expansions. Maintenance and support services include telephone support and unspecified software upgrades and updates provided on a when-and-if-available basis.

In our consolidated statements of operations and comprehensive income, revenue from sales of broadband products and capacity expansions is classified as product revenue, and revenue from maintenance and support, professional services and extended warranty services is classified as service revenue.

We recognize revenue from sales when the following revenue recognition criteria are met:

- *Persuasive evidence of an arrangement exists.* Binding contracts and/or customer purchase orders are generally evidence of an arrangement. For professional services, evidence of an arrangement may also

include information documenting the scope of work to be performed, and customer acceptance terms, if any.

- *Delivery has occurred.* For broadband products, shipping documents and customer acceptance, if applicable, verify that delivery has occurred. For software-enabled capacity expansions, delivery occurs when the additional bandwidth capacity is made available to the customer. For professional services, delivery occurs as the services are completed.
- *The sales price is fixed or determinable.* The sales price is considered fixed or determinable when the fees have been contractually agreed with the customer and are not deemed to be subject to refund, adjustment or future discounts, and when the payment terms of the transaction do not extend beyond our customary payment terms, which are one year or less.
- *Collectibility is reasonably assured.* We assess the ability to collect from our customers based on a number of factors that generally include information supplied by credit agencies, references and/or analysis of customer accounts and payment history. If collection from a customer is not considered reasonably assured, all revenue related to the customer arrangement is deferred until payment is received and all other revenue recognition criteria have been met.

When customer acceptance of the product is required and is other than perfunctory, revenue for the entire customer arrangement is deferred until the acceptance has been received.

Our products have both software and non-software (i.e., hardware) components that function together to deliver the products' essential functionality. In addition, the hardware sold generally cannot be used apart from the embedded software. As a result, all of our product and service offerings are excluded from the scope of software revenue recognition requirements and instead fall within the scope of ASC Topic 605, *Revenue Recognition*.

Many of our sales involve multiple-deliverable arrangements that include products and maintenance and support services and, on a limited basis, may also include professional services and extended warranty services. We have determined that our products, maintenance and support services, professional services and extended warranty services have standalone value to the customer because each of these deliverables is sold separately to our customers or, in the case of professional services, is sold separately by other vendors. As a result, we treat each of these deliverables as a separate unit of accounting for purposes of allocating the arrangement fee and recognizing the revenue of each unit.

For our multiple-deliverable arrangements, we allocate the arrangement fee to each deliverable based on the relative selling prices of each of the deliverables in the arrangement using the selling price hierarchy. In such circumstances, we determine the selling price of each deliverable based on vendor-specific objective evidence, or VSOE, of selling price, if it exists; otherwise, third-party evidence, or TPE, of selling price. If neither VSOE nor TPE exists, we use our best estimate of the selling price, or BSP, for the deliverable. We limit the amount of the arrangement fee allocated to deliverables to the amount that is not contingent on the future delivery of products or services or future performance obligations and the amount that is not subject to customer-specific return or refund privileges.

To date, we have not been able to establish VSOE of selling price of any of our products, maintenance and support services, professional services or extended warranty services because we have not established a history of consistently pricing each product or service within a narrow range. In addition, we are not able to determine TPE of selling price for our products or services because our various product and service offerings contain a significant level of differentiation and, therefore, comparable pricing of competitors' products and services with similar functionality cannot be obtained. As we are unable to establish selling price using VSOE or TPE, we use BSP to allocate the arrangement fee to products, maintenance and support services, professional services and extended warranty services in multiple-deliverable arrangements. The objective of BSP is to determine the

price at which we would transact a sale if a product or service was sold on a standalone basis. We determine BESP of selling price for our products and services by considering multiple factors, including, but not limited to, our historical pricing practices by customer type and geographic-specific market factors.

Revenue from product sales is recognized upon delivery to the customer, or upon the later receipt of customer acceptance of the product when such acceptance is required.

Revenue from maintenance and support services is recognized ratably over the contract period, which is typically one year, but can be as long as three or five years. When customer acceptance of a product is required, the recognition of any associated maintenance and support services revenue commences only upon customer acceptance of the associated product. Revenue from extended warranty services is recognized ratably over the contract period, which is typically one to three years.

Revenue from professional services is recognized as the services are performed. Professional services generally include installation or configuration services that are not deemed to be essential to the functionality of the products. When customer acceptance is required, the recognition of any associated professional services revenue is deferred until the associated product and/or professional service is accepted by the customer.

Resellers

We market and sell our products through our direct global sales force, supported by sales agents, and through resellers. Our resellers receive an order from an end customer prior to placing an order with us, and we confirm the identification of or are aware of the end customer prior to accepting such order. We invoice the reseller an amount that reflects a reseller discount and record revenue based on the amount of the discounted arrangement fee. Our resellers do not stock inventory received from us.

When we transact with a reseller, our contractual arrangement is with the reseller and not with the end customer. Whether we transact business with and receive the order from a reseller or directly from an end customer, our revenue recognition policy and resulting pattern of revenue recognition for the order are the same.

We also use sales agents that assist us in the sales process with certain customers primarily located in the Latin America and Asia-Pacific regions. Sales agents are not resellers. If a sales agent is engaged in the sales process, we receive the order directly from and sell the products and services directly to the end customer, and we pay a commission to the sales agent, calculated as a percentage of the related customer payment. Sales agent commissions are recorded as expenses when incurred and are classified as sales and marketing expenses in our consolidated statements of operations and comprehensive income.

Deferred Revenue

Amounts billed in excess of revenue recognized are recorded as deferred revenue. Deferred revenue includes customer deposits, amounts billed for maintenance and support services contracts in advance of services being performed, amounts for trade-in right liabilities and amounts related to arrangements that have been deferred as a result of not meeting the required revenue recognition criteria as of the end of the reporting period. Deferred revenue expected to be recognized as revenue more than one year subsequent to the balance sheet date is reported within long-term liabilities in our consolidated balance sheets.

When the payment terms of a customer order extend beyond our customary payment terms, which are one year or less, we consider the arrangement to be an extended payment term arrangement and conclude that the sales price is not fixed or determinable for revenue recognition purposes. In these circumstances, we defer all revenue of the arrangement and only recognize revenue to the extent of the payment amounts that become due, provided that all other revenue recognition criteria have been met.

We defer recognition of incremental direct costs, such as cost of goods and services, until recognition of the related revenue. Such costs are classified as current assets if the related deferred revenue is classified as current, and such costs are classified as non-current assets if the related deferred revenue is classified as non-current.

Other Revenue Recognition Policies

In limited instances, we have offered future rebates to customers based on a fixed or variable percentage of actual sales volumes over specified periods. The future rebates earned based on the customer's purchasing from us in one period may be used as credits to be applied by them against accounts receivable due to us in later periods. We account for these future rebates as a reduction of the revenue recorded for the customer's current purchasing activity giving rise to the future rebates. The liability for these future rebates is recorded as accrued customer incentives until the credits have been applied by the customer against accounts receivable due to us or the credits expire.

When future trade-in rights are granted to customers at the time of sale, we defer a portion of the revenue recognized for the sale and account for it as a guarantee at fair value until the trade-in right is exercised or the right expires, in accordance with ASC Topic 460, *Guarantees*. Determining the fair value of the trade-in right requires us to estimate the probability of the trade-in right being exercised and the future value of the product upon trade-in. We assess and update these estimates at each reporting period, and our updates to these estimates may result in either an increase or decrease in the amount of revenue deferred.

Billings to customers for shipping costs and reimbursement of out-of-pocket expenses, including travel, lodging and meals, are recorded as revenue, and the associated costs incurred by us for those items are recorded as cost of revenue.

We exclude any taxes assessed by a governmental authority that are directly imposed on a revenue-producing transaction (e.g., sales, use and value added taxes) from our revenue and costs.

Inventories

Inventories are valued at the lower of cost or market value. Cost is computed using the first-in first-out convention. Inventories are composed of hardware and related component parts of finished goods. We establish provisions for excess and obsolete inventories after evaluating historical sales, future demand, market conditions, expected product life cycles, and current inventory levels to reduce such inventories to their estimated net realizable value. Such provisions are made in the normal course of business and charged to cost of revenue in our consolidated statements of operations and comprehensive income.

Deferred inventory costs are included within inventory in our consolidated balance sheets. Deferred inventory costs represent the cost of products that have been delivered to the customer for which revenue associated with the arrangement has been deferred as a result of not meeting all of the required revenue recognition criteria, such as receipt of customer acceptance. Until the revenue recognition criteria are met, we retain the right to a return of the underlying inventory. Deferred inventory costs are recognized as cost of revenue in our consolidated statements of operations and comprehensive income when the related revenue is recognized.

Product Warranties

Substantially all of our products are covered by a warranty for software and hardware for periods ranging from 90 days to one year. In addition, in conjunction with customers' renewals of maintenance and support contracts, we offer an extended warranty for periods typically of one to three years for agreed-upon fees. In the event of a failure of a hardware product or software covered by these warranties, we must repair or replace the software or hardware or, if those remedies are insufficient, provide a refund at our discretion. Our warranty reserve, which is included in accrued expenses and other current liabilities in our consolidated balance sheets,

reflects estimated material, labor and other costs related to potential or actual software and hardware warranty claims for which we expect to incur an obligation. Our estimates of anticipated rates of warranty claims and the costs associated therewith are primarily based on historical information and future forecasts. We periodically assess the adequacy of the warranty reserve and adjust the amount as necessary. If the historical data used to calculate the adequacy of the warranty reserve are not indicative of future requirements, additional or reduced warranty reserves may be required.

Derivative Instruments

We have certain international customers that are billed in foreign currencies. To mitigate the volatility related to fluctuations in the foreign exchange rates for accounts receivable denominated in foreign currencies, we enter into foreign currency forward contracts. We do not use derivative financial instruments for speculative purposes. As of December 31, 2017, we had foreign currency forward contracts outstanding with notional amounts totaling 5.9 million euros maturing in the fiscal year ending December 31, 2018. As of December 31, 2016, we had foreign currency forward contracts outstanding with notional amounts totaling 11.2 million euros maturing in 2017. There were no outstanding derivative instruments as of December 31, 2015.

Our foreign currency forward contracts economically hedge certain risk but are not designated as hedges for financial reporting purposes, and accordingly, all changes in the fair value of these derivative instruments are recorded as unrealized foreign currency transaction gains or losses in our consolidated statements of operations and comprehensive income as a component of other income (expense). We record all derivative instruments in the consolidated balance sheet at their fair values. As of December 31, 2016, we recorded an asset of \$0.1 million and as of December 31, 2017 and 2016, we recorded a liability of \$0.2 million and \$0.1 million, respectively, related to outstanding foreign currency forward contracts, which were included in prepaid expenses and other current assets and in accrued expenses and other current liabilities, respectively, in the consolidated balance sheet. No asset was recorded as of December 31, 2017.

Income Taxes

We account for income taxes using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the financial statement and tax basis of assets and liabilities, as measured by enacted tax rates anticipated to be in effect when these differences reverse. This method also requires the recognition of future tax benefits to the extent that realization of such benefits is more likely than not. Deferred tax expense or benefit is the result of changes in the deferred tax assets and liabilities. We assess the likelihood that our deferred tax assets will be recovered from future taxable income and, to the extent we believe, based upon the weight of available evidence, that it is more likely than not that all or a portion of the deferred tax assets will not be realized, we establish a valuation allowance through a charge to income tax expense. We evaluate the potential for recovery of deferred tax assets by estimating the future taxable profits expected and considering prudent and feasible tax planning strategies.

We record a liability for potential payments of taxes to various tax authorities related to uncertain tax positions and other tax matters. The recorded liability is based on a determination of whether and how much of a tax benefit in our tax filings or positions is more likely than not to be realized. The amount of the benefit that may be recognized in the financial statements is the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. To the extent that the assessment of such tax positions changes, the change in estimate is recorded in the period in which the determination is made. We establish a liability, which is included in accrued income taxes in our consolidated balance sheets, for tax-related uncertainties based on estimates of whether, and the extent to which, additional taxes will be due. These liabilities are established when we believe that certain positions might be challenged despite our belief that the tax return positions are fully supportable. We adjust the recorded liability in light of changing facts and circumstances. Our provision for income taxes includes the impact of the recorded liability and changes thereto.

We recognize interest and penalties related to uncertain tax positions within other income (expense) in our consolidated statements of operations and comprehensive income. Accrued interest and penalties are included in accrued income taxes in our consolidated balance sheets.

On December 22, 2017, the TCJA was enacted which, among other things, lowered the U.S. corporate income tax rate to 21% from 35% and established a modified territorial system requiring a mandatory deemed repatriation tax on undistributed earnings of foreign subsidiaries. Beginning in 2018, the TCJA also requires a minimum tax on certain future earnings generated by foreign subsidiaries while providing for future tax-free repatriation of such earnings through a 100% dividends-received deduction. While the reduction in the U.S. corporate tax rate under the TCJA is not effective until 2018, under GAAP, changes in tax rates are accounted for in the period enacted. As a result of the TCJA, applicable U.S. and foreign taxes have been provided on substantially all of our accumulated earnings of foreign subsidiaries previously considered indefinitely reinvested. Given the significant complexity of the TCJA, anticipated guidance from the U.S. Treasury Department about implementing the TCJA and the potential for additional guidance from the SEC or the FASB related to the TCJA or additional information becoming available, the provisional income tax charge may be adjusted during 2018 and is expected to be finalized no later than the fourth quarter of 2018. Other provisions of the TCJA that impact future tax years are still being assessed.

Stock-Based Compensation

We measure stock options and other stock-based awards granted to employees and directors based on the fair value on the date of the grant and recognize compensation expense of those awards, net of estimated forfeitures, over the requisite service period, which is generally the vesting period of the respective award. Generally, we issue stock options with only service-based vesting conditions and record the expense for these awards using the straight-line method.

For stock-based awards granted to non-employee consultants, compensation expense is recognized over the period during which services are rendered by such non-employee consultants until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is remeasured using the then-current fair value of our common stock and updated assumption inputs in the Black-Scholes option-pricing model.

We have also granted SARs to certain employees, which require us to pay in cash upon exercise an amount equal to the product of the excess of the per share fair market value of our common stock on the date of exercise over the exercise price, multiplied by the number of shares of common stock with respect to which the SAR is exercised. Because these awards may require us to settle the awards in cash, they are accounted for as a liability in our consolidated balance sheets. The liability related to these awards, as well as related compensation expense, is recognized over the period during which services are rendered until completed. Changes in the fair value of the SAR liability are recorded in our consolidated statements of operations and comprehensive income. After vesting is completed, we will continue to remeasure the fair market value of the liability until the award is either exercised or cancelled, with changes in the fair value of the liability recorded in our consolidated statements of operations and comprehensive income.

We estimate the fair value of each stock option and SAR grant using the Black-Scholes option-pricing model, which uses as inputs the fair value of our common stock and assumptions we make for the volatility of our common stock, the expected term of the award, the risk-free interest rate for a period that approximates the expected term of our stock options and our expected dividend yield.

Determination of Fair Value of Common Stock on Grant Dates prior to our Initial Public Offering

Given the absence of an active market for our common stock prior to our initial public offering, the estimated fair value of our common stock was determined by our board of directors at the time of each award

grant based upon several factors, including its consideration of input from management, our most recently available third-party valuations of common stock and our board of directors' assessment of additional objective and subjective factors that it believed were relevant and which may have changed from the date of the most recent valuation through the date of the grant. These third-party valuations were performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants' Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation* using either the hybrid method or the option-pricing method, or OPM, which used a combination of income and market approaches to estimate our enterprise value. Cash is added and interest-bearing debt is subtracted from the estimated enterprise value in order to estimate the underlying equity value. The hybrid method is a probability-weighted expected return method, or PWERM, where the equity value in one or more of the scenarios is allocated using an OPM. The OPM treats common stock and preferred stock as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. Under this method, the common stock has value only if the funds available for distribution to stockholders exceed the value of the preferred stock liquidation preferences at the time of a liquidity event, such as a strategic sale or merger. The PWERM is a scenario-based methodology that estimates the fair value of common stock based upon an analysis of future values for the company, assuming various outcomes. The common stock value is based on the probability-weighted present value of expected future investment returns considering each of the possible outcomes available as well as the rights of each class of stock. The future value of the common stock under each outcome is discounted back to the valuation date at an appropriate risk-adjusted discount rate and probability weighted to arrive at an indication of value for the common stock.

Stock-Based Award Grants in Connection with and Following Our Initial Public Offering

Our board of directors approved, effective upon the commencement of trading of our common stock on the Nasdaq Global Select Market, grants of options to purchase an aggregate of 625,000 shares of common stock, with an exercise price per share equal to the estimated fair market value of our common stock on such date of grant, which our board of directors determined to be equal to the initial public offering price of our common stock, to certain of our employees and restricted stock units for an aggregate of 34,614 shares of common stock to one of our non-employee directors.

Following our initial public offering, the exercise price per share of stock-based award grants has been and will be set at the closing price of our common stock on the Nasdaq Global Select Market on the applicable date of grant, which our board of directors believes represents the fair value of our common stock.

Emerging Growth Company Status

The JOBS Act provides that an "emerging growth company" can take advantage of the extended transition period afforded by the JOBS Act for the implementation of new or revised accounting standards. However, we have elected not to "opt out" of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we will adopt the new or revised standard at the time private companies adopt the new or revised standard, provided that we continue to be an emerging growth company. The JOBS Act provides that our decision to take advantage of the extended transition period for complying with new or revised accounting standards is irrevocable.

Off-Balance Sheet Arrangements

As of December 31, 2017, 2016 and 2015, we did not have any off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of Regulation S-K, such as the use of unconsolidated subsidiaries, structured finance, special purpose entities or variable interest entities.

Recent Accounting Pronouncements

Refer to the “Summary of Significant Accounting Policies” footnote within our consolidated financial statements included elsewhere in this prospectus for our analysis of recent accounting pronouncements that are applicable to our business.

Quantitative and Qualitative Disclosures about Market Risks

Market risk is the risk of loss to future earnings, values or future cash flows that may result from changes in the price of a financial instrument. The value of a financial instrument may change as a result of changes in interest rates, exchange rates, commodity prices, equity prices and other market changes. We are exposed to market risk related to changes in foreign currency exchange rates and interest rates. We do not use derivative financial instruments for speculative or trading purposes. However, we have entered into, and in the future expect to continue to enter into, exchange rate hedging arrangements to manage certain of the risks described below.

Foreign Currency Exchange Risk

We have accounts receivables denominated in foreign currencies, and our operations outside of the United States incur their operating expenses in foreign currencies. To date, the majority of our product sales and inventory purchases have been denominated in U.S. dollars. For our subsidiary in Ireland, the U.S. dollar is the functional currency. For each of our other foreign subsidiaries, the functional currency is the local currency. During the years ended December 31, 2017, 2016 and 2015, we incurred foreign currency transaction gains (losses) of \$0.9 million, \$(0.3) million and \$(3.0) million, respectively, primarily related to unrealized and realized foreign currency losses for accounts receivables denominated in foreign currencies. These foreign currency transaction losses were recorded as a component of other income (expense), net in our consolidated statements of operations and comprehensive income. We believe that a 5% change in the exchange rate between the U.S. dollar and euro would not materially impact our operating results or financial position. We entered into foreign currency exchange contracts during the year ended December 31, 2017 that mature in the first and second quarter of 2018, and we expect to continue to hedge certain significant transactions denominated in currencies other than the U.S. dollar in the future.

Interest Rate Sensitivity

Our cash and cash equivalents as of December 31, 2017 consisted of cash maintained in FDIC-insured operating accounts as well as investments in money market mutual funds, commercial paper and certificates of deposit. We also have policies requiring us to invest in high-quality issuers, limit our exposure to any individual issuer, and ensure adequate liquidity. Our primary exposure to market risk for our cash and cash equivalents is interest income sensitivity, which is primarily affected by changes in the general level of U.S. interest rates. However, we do not believe a sudden change in the interest rates for our cash and cash equivalents would have a material impact on our financial condition, results of operations or cash flows.

We have a credit agreement that provides us with a term loan facility of \$300.0 million and a revolving credit facility of up to \$25.0 million in revolving credit loans and letters of credit. Borrowings under the facilities bear interest at a floating rate, which can be either a Eurodollar rate plus an applicable margin or, at our option, a base rate (defined as the highest of (x) the JPMorgan Chase, N.A. prime rate, (y) the federal funds effective rate, plus one-half percent (0.50%) per annum and (z) a one-month Eurodollar rate plus 1.00% per annum) plus an applicable margin. The applicable margin for borrowings under the term loan facility is 4.00% per annum for Eurodollar rate loans (subject to a 1.00% per annum interest rate floor) and 3.00% per annum for base rate loans. As a result of the completion of our initial public offering in December 2017, the applicable margin for borrowings under the revolving credit facility is 1.75% per annum for Eurodollar rate loans and 0.75% per annum for base rate loans, subject to reduction based on our maintaining of specified net leverage ratios.

As of December 31, 2017, we had borrowings of \$297.0 million outstanding under the term loan facility, bearing interest at a rate of 5.69% per annum, which was based on a three-month Eurodollar rate of 1.69% per

annum plus the applicable margin of 4.00% per annum for Eurodollar rate loans. Changes in interest rates could cause interest charges on our term loan facility to fluctuate. Based on the amount of borrowings outstanding as of December 31, 2017, an increase of 10%, or approximately 17 basis points, in the three-month Eurodollar rate as of December 31, 2017 would cause pre-tax decreases to our earnings and cash flows of approximately \$0.5 million per year, assuming that such rate were to remain in effect for a year. A decrease of 10%, or approximately 17 basis points, in the three-month Eurodollar rate as of December 31, 2017 would cause pre-tax increases to our earnings and cash flows of approximately \$0.5 million, assuming that such rate were to remain in effect for a year.

As of December 31, 2017, we were not exposed to interest rate risk under the revolving credit facility as a result of having no outstanding borrowings under the facility.

Inflation Risk

We do not believe that inflation has had a material effect on our business. However, if global demand for the base materials utilized in our suppliers' components were to significantly increase for the components we purchase from our suppliers to manufacture our products, our costs could become subject to significant inflationary pressures, and we may not be able to fully offset such higher costs through price increases. Our inability or failure to do so could harm our business, operating results and financial condition.

BUSINESS

Our Vision

Our products help our customers provide and manage broadband connectivity. We believe consumers and enterprises should be able to enjoy ultra-fast speeds and enhanced digital content experiences through their phones, tablets, computers, TVs and other connected devices at home or on the go. We believe that connectivity should be ubiquitous and seamless; it should not matter whether the user is accessing the Internet through wireless or fixed connections, and it should not matter whether that service is being provided by a cable operator, fixed telecom carrier or wireless services provider. Our innovative, software-centric products are designed to help achieve this vision.

Overview

We offer solutions for next-generation centralized, distributed and virtualized architectures for cable broadband, fixed-line broadband and wireless networks. Our innovative solutions enable customers to cost-effectively and dynamically increase network speed, add bandwidth capacity and new services for consumers and enterprises, reduce network complexity and reduce operating and capital expenditures. Our solutions include a suite of software-centric infrastructure solutions that allow cable service providers to deliver voice, video and data services over a single platform at multi-gigabit speeds.

We focus our development efforts on innovation and being the first to market with new products at each generational shift in network technology. For example, we pioneered the use of a software-centric approach to leverage the programmability of field programmable gate arrays, or FPGAs, and general purpose processors for use in the cable industry. In addition, we believe we were the first to provide each of the following to our customers: a solution enabling cable service providers to deliver Internet Protocol, or IP, voice, digital video and data over a single port; a solution enabling cable service providers to deliver multi-gigabit speeds to their subscribers; and a remote node solution to enable distributed broadband cable access at gigabit speeds.

We have created a software-centric, multi-service portfolio that enables a broad range of core and access network functions for fixed and wireless networks. These networks share a common set of core and access network functions that enable network services such as subscriber management, session management, transport security and radio frequency, or RF, management. Our Axyom software architecture allows each of these network functions to be provided and controlled by a distinct segment of software, which can be integrated or combined together in a building block-style fashion with the segments of software responsible for each other network function. This allows us to offer network architectures that can be efficiently tailored to meet each customer's specific requirements, both as they exist at the time of initial implementation and as they evolve over time. While we initially focused on providing solutions for cable service providers due to our founders' experience in the cable industry, the commonalities between fixed and wireless network architectures have allowed us to expand our solutions into the wireless market as cable service providers have increasingly sought to add wireless capabilities to their service offerings.

We offer a scalable solution that can meet the evolving bandwidth needs of our customers and their subscribers. Our first installation in a service provider's network frequently involves deploying our broadband products in only a portion of the provider's network and with only a fraction of the capacity of our products enabled at the time of initial installation. Over time, our customers have generally expanded the use of our solutions to other areas of their networks to increase network capacity. Capacity expansions are accomplished either by deploying additional systems or line cards, or by our remote enablement of additional channels through the use of software. Sales of additional line cards and software-based capacity expansions generate higher gross margins than our initial hardware-based deployments.

Our solutions are commercially deployed in over 70 countries by more than 450 customers, including regional service providers as well as some of the world's largest Tier 1 broadband service providers, serving millions of subscribers. Our principal customers include Charter/Time Warner Cable, Rogers, Sprint and Mediacom in North America; Televisa/IZZI Mexico, Megacable Mexico and Claro Telmex Colombia in Latin America; Liberty Global, Vodafone and DNA Oyj in Europe; and Jupiter Communications, Beijing Gehua CATV Networks and China Mobile in Asia-Pacific.

We have achieved significant growth in revenue and profitability. Our revenue for the years ended December 31, 2017, 2016, 2015 and 2014 was \$351.6 million, \$316.1 million, \$272.5 million and \$211.3 million, respectively, representing a compound annual growth rate of 18%. Our net income for the years ended December 31, 2017, 2016, 2015 and 2014 was \$88.5 million, \$88.7 million, \$67.9 million and \$59.7 million, respectively. Our non-GAAP net income for the years ended December 31, 2017, 2016, 2015 and 2014 was \$110.2 million, \$95.0 million, \$72.8 million and \$62.1 million, respectively¹. As of December 31, 2017, 2016 and 2015, our total assets were \$469.7 million, \$583.0 million and \$283.1 million, respectively.

Industry Background and Broadband Service Provider Challenges

As broadband service providers look to address the rapidly evolving demands of consumers and enterprises, we believe they must address several key challenges.

Rapidly Increasing Bandwidth Demand

Bandwidth demand has grown substantially and is expected to continue to increase. Key drivers of this increased demand include:

- more users with more connected devices and applications;
- more time spent online by users;
- the increased use of bandwidth-intensive streaming media services, such as Amazon Prime Video, Netflix and YouTube; cloud applications, such as iCloud and Dropbox; and augmented and virtual reality applications;
- Internet of Things, or IoT, solutions, as already seen in connected homes, business and industries; connected devices such as Amazon Alexa or Google Assistant; machine-to-machine connectivity; car connectivity and smart cities;
- the backhaul demand by wireless service providers; and
- the rise of data consumption by enterprises with strict latency requirements on mission-critical and public safety-related applications.

According to a June 2017 Cisco Systems Visual Networking Index report, global IP traffic per month is forecasted to grow from 96 exabytes in 2016 (1 exabyte = 1,000,000,000 GB) to 278 exabytes in 2021, representing a 24% compound annual growth rate in global IP traffic; global IP traffic per capita is expected to increase from 13GB in 2016 to 35GB in 2021; and the number of connected devices is forecast to be three times the global population by 2021.

¹ Non-GAAP net income is a non-GAAP financial measure. Please see "Selected Consolidated Financial Data—Non-GAAP Financial Measures" for information regarding the limitations of using Non-GAAP net income and for a reconciliation of Non-GAAP net income to net income, the most directly comparable financial measure calculated and presented in accordance with GAAP.

Competition Fueled by Increasing Breadth of Service Offerings

Consumers and enterprises enjoy increased choice among broadband service providers, including cable service providers such as Charter and Comcast, diversified telecommunications companies such as AT&T and Verizon, and mobile-only network operators such as Sprint and T-Mobile. As a result, broadband service providers are facing increasing pressure to develop differentiated service offerings with higher levels of performance at lower cost to consumers and enterprises. They are also under competitive pressure to offer a wider range of services, from Internet access, television, telephone and wireless services to additional services such as voice over Wi-Fi, video calling and, in general, smart Internet and security-related services. Moreover, the increasing popularity of over-the-top services puts additional pressure on the traditional video business of broadband service providers. In this new environment, fixed service providers have deployed fiber and Wi-Fi networks and have been exploring ways to provide mobile service offerings.

Increasing Network Complexity

Historically, broadband service providers have deployed separate systems within their fixed broadband networks for video and data services and have operated separate networks for fixed, Wi-Fi and mobile services. This traditional model requires service providers to maintain separate network infrastructure and personnel for each service. As network capacity and coverage have increased, and the diversity of service offerings has grown, the lack of interoperability of these separate networks has resulted in increasing network complexity and inefficient parallel network infrastructure.

Need to Control Operating and Capital Expenditures

The operation of network infrastructure is space, power and personnel intensive. In addition, the lack of interoperability between networks means that broadband service providers cannot optimize bandwidth usage by allocating traffic from networks experiencing high demand to those experiencing low demand, which can result in unused capacity and an unsatisfactory user experience.

Hardware-centric networks can also be expensive to update or replace. With frequent technology shifts and introductions of new service offerings, competition in the broadband industry is constantly changing. To remain competitive, service providers are regularly required to incur significant capital expenditures to upgrade existing equipment.

Opportunity to Transform Broadband Networks

Given the challenges they face, broadband service providers are undertaking three key technology initiatives to help build next-generation networks.

Densification

Increasing demand for bandwidth and user expectations for ubiquitous and seamless connectivity require, among other things, the addition of more end points for users to access broadband networks, also known as network densification. Consequently, broadband service providers are shifting from centralized to more distributed architectures. Densification requires extending network connectivity and distributing access aggregation solutions closer to end users. This results in the deployment of additional hardware, such as access aggregation nodes, small cells and related gateways.

Network Convergence

Many traditional service providers have historically either operated just one network type or operated fixed and wireless networks as separate businesses. However, more and more service providers that may have started out providing just fixed or wireless services are recognizing the benefits, especially those associated with quality of experience, of being able to provide both services to their subscribers. For example, cable service providers in

the United States have formed a joint consortium, Cable WiFi, that provides Wi-Fi access to broadband cable subscribers at over 500,000 access points. Continued acquisition activity, such as Altice's acquisitions of Cablevision and SuddenLink and Vodafone's acquisition of Kabel Deutschland, has accelerated fixed and wireless convergence. This consolidation trend has caused a heightened focus on the economics of maintaining two networks. Broadband service providers are seeking to integrate their separate delivery modes with all-IP architectures, shared transport and a common suite of software-centric core and access network functions.

Virtualization

Service providers are rethinking traditional network architectures and moving toward more software-driven architectures. The use of software permits a fundamental change in the way broadband service providers deliver critical network functions. Software-enabled architectures that are decoupled from underlying hardware allow for increased efficiencies, upgradability, configuration flexibility, service agility and scalability not feasible with hardware-centric approaches.

Our Solutions

We offer solutions for fixed and wireless networks. Our software-centric, multi-service broadband platform, Axyom, enables ultra-broadband delivery and convergence.

We engineered our platform from the ground-up to be high performance, flexible and adaptable, and to allow our customers to seamlessly address the growing demand for bandwidth and connectivity and competitive need for service agility. Axyom also enables our customers to efficiently manage their networks and provide their subscribers with additional services.

Our software-centric broadband platform provides the following key benefits to broadband service providers:

Addition of Critical Bandwidth Capacity

Our solutions enable broadband service providers to offer multi-gigabit speeds to meet the growing demand for bandwidth. Our platform permits software-centric expansion of network capacity to enable rapid bandwidth and service provisioning, helping broadband service providers to respond flexibly to increased customer demands.

Flexibility to Add New and Expand Existing Services

Our platform provides us with the flexibility to adapt to changing industry standards and customer needs. We designed our Axyom software platform using what we refer to as Network Function Virtualization 2.0, or NFV 2.0, principles, which allow us to provide and control each needed network function through a distinct segment of software, which can be integrated or combined together in a building block-style fashion with the segments of software responsible for each other network function. This allows us to offer network architectures that can be efficiently tailored to meet each customer's specific requirements, both as they exist at the time of initial implementation and as they evolve over time. When possible, we also seek to implement new features and enhanced customization through the use of FPGAs, which can be reprogrammed in the field as service needs evolve. This software-centric approach enables our customers, in turn, to commercialize new features faster than they could with hardware-centric solutions. For example, our solutions enable broadband service providers to efficiently add new services and features, such as wholesale connectivity services for wireless service providers, enterprise-class connectivity services and interactive communication services, such as voice over Wi-Fi and video calling.

Ability to Upgrade Networks Remotely

Our programmable architecture allows us to deploy technology updates to our customers remotely without the expense, disruption or network downtime caused by hardware replacements or field visits by personnel, while minimizing network downtime. Similarly, we can remotely turn on additional features or capacity in order to scale our solutions to meet the needs of our customers as they look to broaden the use and capabilities of our products. Similarly, we are often able to troubleshoot and assist our customers with technical issues through seamless software updates.

Reduced Network Complexity, Operating Costs and Capital Expenditures

Our converged software platform allows broadband service providers to significantly reduce the complexity and costs of their networks by reducing parallel and otherwise redundant network architecture. The large capacity increases that our solutions enable, and the ability of our solutions to deliver voice, video and data over a single platform, mean fewer pieces of equipment in the network, and lower energy usage, operating costs and capital expenditures. For example, our solutions permit our customers to transition from Data Over Cable Service Interface Specification, or DOCSIS, 3.0 to DOCSIS 3.1 with less network downtime and fewer hardware replacements that result in lower costs than those of our competitors.

Ability to Densify Networks

Our products help broadband service providers deploy more capacity at the network edge, closer to where end users and devices are accessing the network, thereby increasing available bandwidth and reducing latency to improve quality of service. For example, our solutions allow cable service providers to take advantage of new technologies and standards such as distributed access architectures, including passive optical networking, or PON, architectures, allowing cable service providers to move fiber closer to the network edge.

Common Platform Capabilities to Address the Needs of Both Fixed and Wireless Networks

Our software-centric, multi-service platform enables a broad range of network services for fixed and wireless networks, allowing for the delivery of diverse consumer and enterprise applications. Both fixed and wireless networks share a common set of core and access network functions that enable network services, such as subscriber management, session management, transport security, access aggregation and RF management. Our Axyom software architecture allows each of these network functions to be provided and controlled by a distinct segment of software, which can be integrated or combined together in a building block-style fashion with the segments of software responsible for each other network function. This allows us to offer network architectures that can be efficiently tailored to meet each customer's specific requirements, both as they exist at the time of initial implementation and as they evolve over time.

Our Competitive Strengths

The following competitive strengths have helped us become a market leader:

Highly Flexible, Software-Centric Architecture

We have designed our product portfolio from the ground-up to be software-centric and modular in nature. Our proprietary software is at the heart of our products. Our software-centric architecture allows us to virtualize core network and access functions allowing these functions to be decoupled from underlying hardware, which is not feasible with hardware-centric approaches. As a result, our software-centric architecture allows for increased

efficiencies, upgradability, configuration flexibility, service agility and scalability while increasing the potential service life of the underlying hardware. Our software allows us to leverage the programmability of FPGAs and general purpose processors in our solutions.

Proven Engineering and Product Development Track Record

We have a proven history of anticipating network evolutions and developing solutions that enable next-generation networks. Our forward-looking design and investment approach, coupled with our proven product development track record, has enabled us to deliver fully featured next-generation solutions in advance of competitors. For example, we believe we were:

- first to market (2005) with a software-centric cable solution leveraging the programmability of FPGAs and general purpose processors;
- first to market (2008) with a commercially deployed, fully qualified DOCSIS 3.0 cable modem termination system, or CMTS;
- first to market (2012) with a commercially deployed converged cable access platform, or CCAP, delivering IP voice, digital video and data over a single port;
- first to market (2015) with commercially deployed DOCSIS 3.1-compliant solutions supporting speeds of up to 10 gigabits per second; and
- first to market (2016) with a commercially deployable remote-PHY solution.

Strong Management and Engineering Team with a Culture of Innovation

We pride ourselves on our culture of innovation, which is driven by our management team of experienced executives and engineers with deep industry expertise. As of December 31, 2017, approximately 86% of our employees were engineers or had other technical backgrounds. With our talented and passionate engineering-led organization, we aim to be an industry visionary and are committed to delivering products based on next-generation technology before our competitors do. By providing customers with direct access to our engineers for product feedback and assistance, we believe our engineering expertise contributes to an enhanced customer experience.

Customer Focus

We have a passion to serve our customers and the agility and flexibility to offer solutions to meet their evolving requirements. Our sales, sales engineering, development and support teams work directly with customers to design, develop and implement new solutions and to resolve customer problems, even if another provider is the root cause of the problem. Our product development roadmap is based on our vision for the future but heavily influenced by near-term and mid-term customer requirements. This market insight helps us meet customer demands and achieve faster time to market with new features.

Diversified and Established Customer Base

Our solutions are commercially deployed in more than 70 countries by more than 450 customers, including regional service providers as well as some of the largest Tier 1 broadband service providers, serving millions of subscribers. According to S&P Global Intelligence, our market share by channels shipped in the CCAP and CMTS market grew from 6% in 2012 to 21% in 2014 to 27% in 2016. Our wireless solutions have been purchased by several customers, including Tier 1 mobile operators such as Sprint and China Mobile, and we are in negotiations with several broadband service providers for the purchase of our wireless solutions. In addition, our wireless solutions are currently in over 30 trials with 25 prospective customers.

Market Opportunity

We believe that the shift to software-centric ultra-broadband networks and fixed and wireless convergence presents us with a compelling market opportunity. Because fixed and wireless networks share a common set of core and access network functions, our platform is capable of addressing the needs of both fixed and wireless networks.

Our current CCAP solution addresses the service delivery needs of cable service providers. As fixed and wireless networks continue to converge, we believe there is an opportunity for us to take advantage of this fundamental shift. Although we currently generate the majority of our revenue from the fixed broadband CCAP market, we expect to generate increased revenue in the future from sales of both wireless and PON solutions to new and existing customers. Our current wireless products consist of small cells, Wi-Fi and related gateways as well as evolved packet mobile core products. Our small cells and related products enable wireless access, routing and traffic management functions to support the delivery of a number of services to end users. Our evolved packet mobile core products enable subscriber and session management, security and data exchange between the core wireless network and wireless subscribers. Our PON solutions enable cable service providers to push fiber closer to the network edge while leveraging their existing network assets and existing industry-standard protocols.

According to S&P Global Market Intelligence, the CCAP market (including both centralized and distributed solutions) is projected to grow from \$1.5 billion in 2017¹ to \$1.8 billion in 2021, representing a 5% compound annual growth rate. This market currently accounts for the majority of our revenue.

In addition, we believe the global market for our small cell, evolved packet mobile core and PON solutions will grow from 2017 to 2021, based on the following:

- According to Gartner, the small cells market is projected to grow from \$4.4 billion in 2017 to \$6.8 billion in 2021, representing a 12% compound annual growth rate.²
- According to ABI Research, the evolved packet mobile core market is expected to grow from \$2.4 billion in 2017 to \$8.7 billion in 2021, representing a 38% compound annual growth rate.
- According to S&P Global Market Intelligence, the high-growth segments of the broadband service provider PON market that we address are projected to grow from \$0.8 billion in 2017 to \$3.0 billion in 2021, representing a 39% compound annual growth rate.

Our small cell-related solutions have been purchased by several customers, including Tier 1 mobile operators. Our small cell-related solutions, components of our evolved packet mobile packet core application and our PON solutions are currently in trials with numerous prospective customers.

Our Growth Strategy

The key elements of our growth strategy are:

Continue to Innovate and Extend Technology Leadership Through R&D Investment

We believe that we offer market-leading broadband infrastructure products today. We intend to continue to enhance our existing products and develop new products in both our current and adjacent markets. For example,

¹ S&P Global Market Intelligence had previously estimated in 2017 this market was approximately \$2.0 billion. In 2018, S&P Global Market Intelligence provided a new annual estimate of the CCAP market as disclosed in this section based on more current information available to them.

² Source: Gartner, Forecast: Communications Service Provider Operational Technology, Worldwide, 2016-2022, 1Q18 Update Published: 28 March 2018. The Gartner Report represents research opinion or viewpoints published, as part of a syndicated subscription service, by Gartner, Inc. (“Gartner”), and are not representations of fact. The Gartner Report speaks as of its original publication date (and not as of the date of this prospectus) and the opinions expressed in the Gartner Report are subject to change without notice.

we have invested in and launched distributed access architecture solutions to allow our cable customers to densify their networks, providing higher bandwidth, which enhances user experience.

Further Penetrate Existing Customers

Our customers often deploy our products in a specific region or for a specific application, which may only account for a portion of their overall network infrastructure needs. We plan to expand our footprint within the networks of existing customers as they realize the technological and financial benefits of our solutions. Our software-centric approach, which is embedded in our products already deployed in our customers' networks, allows those customers to expand network capacity to address increasing bandwidth demand and serve additional users through software.

Expand Our Customer Base

We intend to continue to invest in our sales and marketing organization to increase awareness of our products and services and expand our customer base. We believe our focus on hiring, training and retaining a knowledgeable and technical sales team helps us build better relationships with customers. We added approximately 40 customers in 2017.

Expand the Breadth of Solutions Sold to Customers

We intend to sell additional products and solutions to our growing installed base of broadband service providers. We have invested in developing a virtualized platform that allows us to rapidly provide new applications and services to our customers.

Leverage Our Core Technology for the Cable Industry into Adjacent Wireless Markets

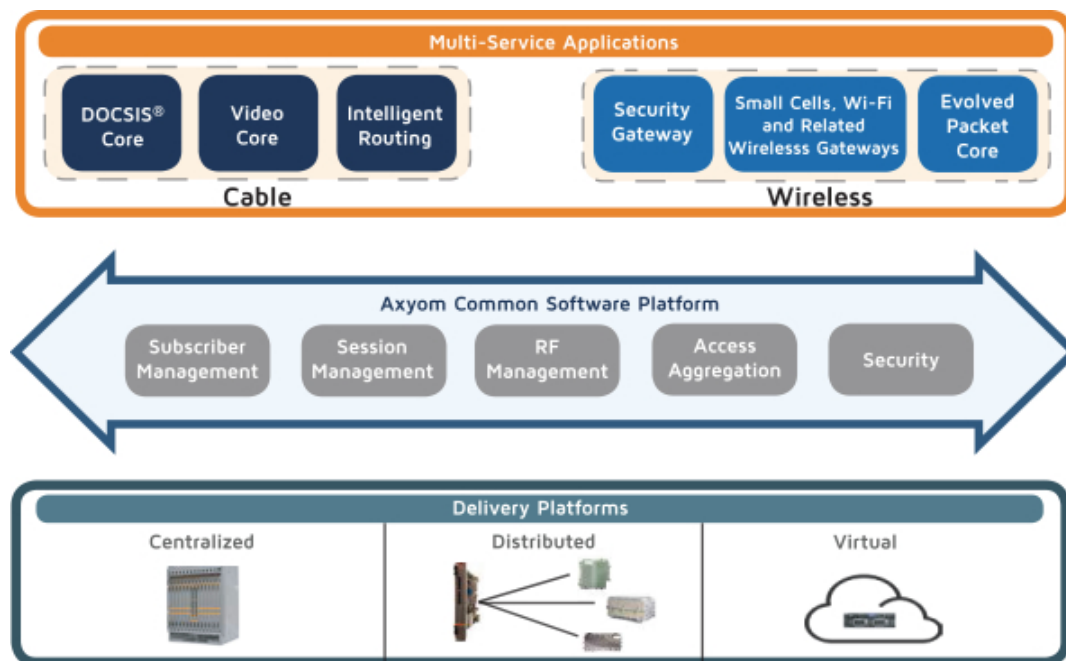
While we initially focused on providing solutions for cable service providers due to our founders' experience in the cable industry, the commonalities between fixed and wireless network architectures have allowed us to expand our solutions into the wireless market as cable service providers have increasingly sought to add wireless capabilities to their service offerings. Our wireless solutions have been purchased by several customers, including Tier 1 mobile operators such as Sprint and China Mobile, and we are in negotiations with several broadband service providers for the purchase of our wireless solutions. In addition, our wireless solutions are currently in over 30 trials with 25 prospective customers.

Invest in Our Platform through Selective Acquisitions

We may selectively pursue acquisitions that enhance our existing platform capabilities and are consistent with our overall growth strategy.

Products and Technology

We offer physical and virtual network solutions that enable our customers to provide fixed and wireless broadband services to consumers and enterprises.



Axyom Software Platform

Our Axyom software platform is central to our multi-service, ultra-broadband delivery architecture, integrating multiple core and access network functions. Axyom is 5G-ready and is designed to provide high performance, programmability, scalability and flexibility. We designed Axyom using NFV 2.0 principles, which allow us to provide and control each needed network function through a distinct segment of software, which can be integrated or combined together in a building block-style fashion with the segments of software responsible for each other network function. This allows us to offer network architectures that can be efficiently tailored to meet each customer's specific requirements, both as they exist at the time of initial implementation and as they evolve over time. Axyom has predominantly been integrated into our physical products to date and is increasingly being deployed in virtual environments.

Our Axyom software platform performs several critical network services:

- **Subscriber Management.** Enables dynamic management of subscriber authentication, provisioning, policy enforcement and allocation of network resources based on specific end-user service requirements to enhance quality of service
- **Session Management.** Intelligently manages application layer data streams to enable service creation and delivery and enhance quality of service
- **RF Management.** Efficiently manages RF signal generation (modulation/demodulation) while reducing noise to increase available RF spectrum and maximize data throughput over the network link in both fixed and wireless applications

- *Access Aggregation.* Manages and combines high volume data streams, regardless of connection type, including fixed broadband, Wi-Fi, LTE and 5G
- *Security.* Enables end-to-end secure connectivity between users, devices and networks without sacrificing performance

Axyom can be deployed on a centralized basis on one of our hardware chassis, over distributed network hardware or as a virtualized solution, allowing operators to place network functions where they choose, whether close to the network edge or at a centralized location or data center.

Delivery Platforms

Depending on customer preference, network requirements and current network configuration, our solutions can be deployed in a centralized, distributed or virtual environment. While centralized deployments allow our customers to deploy all critical CCAP functions in a single location, distributed and virtual deployments enable our customers to densify the access network by distributing access deeper into the network, away from existing data centers.

Centralized Deployment. Our C100G CCAP combines CMTS functionality that enables IP data transport from data centers to end-users over cable networks, including voice over IP and edge-quadrature amplitude modulation, or Edge-QAM, functionality to enable video delivery over cable networks in one integrated chassis. We believe our C100G CCAP solution was the industry's first fully integrated CCAP and DOCSIS 3.1 solution. Our C100G CCAP is capable of supporting downstream speeds of 10 gigabits per second. Our C100G CCAP also features high downstream and upstream channel capacity, and low space and energy consumption requirements. Using our C100G CCAP, our customers whose networks are configured for DOCSIS 3.0 can adopt DOCSIS 3.1 through either a software upgrade or a simple line card addition, while continuing to service their end customers who use DOCSIS 3.0 modems. We are also able to increase capacity for our C100G CCAP through channel expansions, which are remotely installed software-enabled increases in the bandwidth capacity, regardless of whether it is configured for DOCSIS 3.0 or 3.1. We believe that our software-centric approach will enable us to seamlessly provide our customers with future upgrades as standards evolve. In addition to our C100G CCAP, we also offer our C40G CCAP, that provides per rack unit performance comparable to that of our C100G CCAP, but in a smaller form factor.

Distributed Deployment. We offer three solutions for distributed deployment:

- *Remote-PHY Solution.* Our R-PHY solution for cable networks consists of remotely deployable hardware that primarily performs RF modulation and connects to a CCAP at the network core to provide subscriber management, session management, access aggregation and security functions. The remotely deployed R-PHY nodes aggregate end-user traffic for delivery back to the central data center. The software at the central data center can run on our C100G CCAP chassis or in a virtual environment. Our R-PHY solution allows broadband service providers that have implemented fiber-deep architectures to deploy ultra-fast fiber connections closer to the end user. By retaining software-driven network control and intelligence functions at the network core and placing physical layer functions remotely in a fiber node, broadband services providers can densify their networks to increase operational efficiencies and network capacity.
- *Remote-MAC/PHY Solution (R-MAC/PHY).* Our R-MAC/PHY solution for cable networks offers the capabilities of our R-PHY solution while also moving media access control functions from the network core to remotely deployed R-MAC/PHY nodes, allowing cable service providers to increase network throughput to serve more customers at higher speed.
- *Apex Small Cell Solution.* Our Apex small cell solution consists of remotely deployable access points that provide cellular connectivity services at the network edge in conjunction with transport security functions to address coverage and capacity challenges. It allows a number of connectivity options

including LTE and 3G. The Apex small cell solution allows broadband service providers to more cost-effectively densify cellular networks.

In connection with all of our centralized and distributed deployment solutions, we offer a portfolio of PON solutions, enabling service providers to move fiber closer to the network edge and deliver a broader range of ultra-broadband services more efficiently and at higher speed. In particular, our portfolio of PON solutions includes end-to-end network elements, including optical line terminals and optical network units, and a DOCSIS Provisioning over Ethernet system for seamless integration of our PON solutions with existing DOCSIS network protocols.

Virtual Deployment. Using our NFV 2.0 software architecture, all of the multi-service applications supported across fixed and wireless by our Axyom software platform can be delivered on a virtualized basis utilizing commodity servers. We are in trials with numerous prospective customers to deliver multi-service applications virtually.

Multi-Service Applications

Our Axyom software platform initially focused on supporting applications enabling fixed broadband delivery. We have focused our recent development efforts on expanding Axyom's capabilities to support wireless applications. We refer to multi-service to describe a set of applications that are able to support requirements for both fixed and wireless networks.

Cable Network Applications

We believe our C100G CCAP was the first solution offering full CCAP functionality, allowing the delivery of voice, video and data on a single platform. Our CCAP enables three key applications over a single cable network:

- *DOCSIS Core.* Provides high-speed delivery of IP data for broadband connectivity services, including voice over IP.
- *Video Core.* Delivers high speed video processing, including for HD and 4K.
- *Intelligent Routing.* Intelligently manages network traffic to optimize service quality.

Wireless Network Applications

Our Axyom software platform also enables a number of applications addressing the evolving needs of fixed-mobile convergence as well as mobile network operators:

- *Security Gateway.* Enables secure encrypted access for subscribers roaming between trusted and untrusted networks, while providing high levels of density and performance.
- *Small Cells, Wi-Fi and Related Wireless Gateways.* Enables routing and security functions as well as traffic management to provide secure connectivity for wireless endpoints and enable broadband services such as LTE over Wi-Fi, including Wi-Fi calling.
- *Evolved Packet Mobile Core.* Enables subscriber management, session management and authentication, security and data exchange between the core network and subscribers.

Capacity Expansion Products

Our CCAP's flexible design allows our customers to rapidly increase service capabilities and tailor our solution to meet their evolving service needs.

Our software platform permits additional capacity and features to be provisioned remotely, as compared to hardware-centric solutions, which require wholesale hardware replacements. As new standards and services evolve and broadband networks become increasingly virtualized, we expect we will be able to deliver additional capabilities as software-only updates.

Our line card expansion options allow our customers to rapidly add new service interfaces and physical connection capacity without the need for chassis replacements. In addition, our expansion cards can cost-effectively enable support for our distributed access solutions utilizing the same C100G CCAP chassis.

Our Customers

Our solutions are commercially deployed by more than 450 customers, including some of the world's largest Tier 1 broadband service providers:

- in North America: Charter/Time Warner Cable, Rogers, Sprint and Mediacom;
- in Latin America: Televisa/IZZI Mexico, Megacable Mexico and Claro Telmex Colombia;
- in Europe: Liberty Global, Vodafone and DNA Oyj; and
- in Asia-Pacific: Jupiter Communications, Beijing Gehua CATV Networks and China Mobile.

Customer Case Studies

The following case studies illustrate why and how our customers deploy our solutions and the impact of our solutions on their businesses.

Time Warner Cable

Challenge: In 2014, Time Warner Cable, or TWC, launched its "TWC Maxx" initiative in the New York City metropolitan area. The goal of the initiative was to provide increasingly competitive service offerings, deliver a superior customer experience with ultra-fast Internet speeds and prepare for continued growth in demand. TWC needed a solution that increased bandwidth and consolidated IP voice, digital video and data services while minimizing space and energy requirements.

Solution and results: TWC implemented our C100G CCAP solution across the New York City metropolitan area, representing the first commercial deployment of full integrated CCAP services including voice, video and data over a single port. Our C100G CCAP solution is able to provide these services through a single network using only one chassis design, enabling a reduction in power consumption and facilities space requirements. Prior to the deployment of our solution, these services were provided through two separate networks. Deployment of our C100G CCAP solution permitted TWC to reduce power consumption by 67% on a per-QAM basis and by nearly 30% overall, or approximately 11 GWh per year, which we estimate is enough power for over 1,800 residential homes, reduce facility space and remove over 140 miles of coaxial copper cable, yielding substantial energy and operational savings. In addition, our C100G CCAP solution enabled TWC to offer faster speeds because it allowed more bandwidth to be provided by hardware occupying a smaller footprint than the legacy equipment that was removed. As a result of deploying our C100G CCAP solution, TWC was able to triple the maximum downstream speed and quadruple the maximum upstream speed offered to its customers. The implementation also enabled TWC to increase bandwidth to customers by over 90% while reducing required rack space by 30%.

Tier 1 Cable Service Provider in North America

Challenge: In the fourth quarter of 2015, a Tier 1 cable service provider in North America launched an initiative to make 1 gigabit per second service available across its entire cable footprint.

Solution and results: The customer recognized that a CCAP solution was necessary to offer 1 gigabit per second service. The customer required a DOCSIS 3.1-compliant solution and initially considered purchasing solutions from multiple vendors; however, after evaluating our technology compared to that of our competitors, the customer selected us to complete 100% of the project, citing our rapid deployment timelines. The customer deployed our C100G CCAP solution to service its entire footprint, replacing its existing third-party CMTSs in their entirety. As a result of the initiative, the customer is achieving its objective and rolling out 1 gigabit per second service across its entire footprint, and now provides 1 gigabit per second service in the largest metropolitan market it serves.

The following case study is an example of a recent initial deployment of our Axyom software platform to a mobile service provider. We intend to further expand our presence in this market in the future.

Global Top 3 Wireless Service Provider by Subscribers

Challenge: In the first half of 2017, a global top 3 wireless service provider by subscribers was looking for a way to provide 4G connectivity services for enterprise and residential customers.

Solution and results: The customer deployed our Axyom software platform with wireless capabilities, citing its ability to meet all of the customer's lab and field test performance criteria and provide a highly scalable solution for densifying macro cellular networks in a cost-effective, compact footprint. The customer also cited our Axyom software platform's ability to provide a flexible architecture for secure concentration of small cell traffic.

Sales and Marketing

We sell our products and services through our direct sales force and in partnership with our resellers and sales agents. Our sales force is supported by our sales engineering team, which has deep technical expertise and the capability for product presentations, product evaluations, trials and customer care. Each sales team is responsible for specific direct end-customer accounts and/or a geographic territory across the following regions: North America, Latin America, Asia-Pacific and Europe, Middle East and Africa. We intend to expand our sales force and our reseller and sales agent network.

Our products typically have a long sales cycle, requiring detailed discussions with prospective customers about their network requirements and technology roadmaps. To help us succeed in a market characterized by long sales cycles, we have developed strong customer relationships, which in turn provide us with insight into how our products will be deployed in our customers' networks. We involve product engineers in the sales process, enabling them to build relationships with customers that are valuable both during implementation and in post-sales customer support. These relationships also provide us with opportunities to leverage our familiarity with our customers' needs to make additional sales following the initial sale.

We also use resellers to market, sell and support our products and services, and we use sales agents to assist our direct global sales force with certain customers primarily located in the Latin America and Asia-Pacific regions.

Our marketing activities consist primarily of technology conferences, web marketing, trade shows, seminars and events, public relations, analyst relations, demand generation and direct marketing to build our brand, increase customer awareness, communicate our product advantages and generate qualified leads for our field sales force and resellers and sales agents.

Competition

The broadband service provider market is highly competitive and subject to rapidly changing technology trends and shifting customer needs.

We primarily compete with larger and more established companies in the broadband service provider market, such as Arris, Cisco, Ericsson and Nokia.

The principal factors upon which we compete are:

- product capabilities;
- performance;
- scalability, flexibility and adaptability to new standards;
- ability to innovate;
- time to market;
- customer support; and
- total cost of ownership relative to performance and features.

We believe that we compete favorably with respect to these factors. Nevertheless, many of our competitors have substantial competitive advantages, including greater name recognition, longer operating histories, and substantially greater financial, technical, research and development or other resources than we do.

Research and Development

Our research and development efforts are focused on developing new broadband products for the cable and wireless markets and enhancing our current products to meet the current and future needs of our customers. We aim to be first to market with deployable products and are willing to invest early in research and development and take technological risks to meet this goal. We also seek to enhance our technological innovation through our partnerships with industry standard-setting organizations and groups, such as CableLabs, 3GPP and Wi-Fi Alliance. These efforts position us to be able to advance industry standards while evolving our solutions to meet such new standards.

As of December 31, 2017, our research and development organization consisted of 399 employees worldwide, including both software and hardware engineers. Our research and development expense totaled \$60.7 million, \$49.2 million and \$37.2 million for the years ended December 31, 2017, 2016 and 2015, respectively. We plan to continue to devote substantial resources to our research and development activities.

Manufacturing

We contract with multiple U.S.-based manufacturing firms, including Benchmark and Sanmina, to manufacture the hardware for our products using the designs, components and standards that we specify. After taking delivery from our contract manufacturers, we conduct final assembly and quality assurance testing at our facilities in Lawrence, Massachusetts and Limerick, Ireland. We believe our combination of local manufacturing and in-house assembly and quality assurance allows us to maintain consistency and quality in the products we ship to customers. We also believe that this manufacturing model enables us to respond quickly to technological changes and supports our engineering goal of being first to market with deployable products. We believe our inventory management enables us to offer shorter times between order and delivery to our customers as compared to our competitors.

We enter into purchase agreements with our contract manufacturers, generally with terms of one year or more. There are no minimum purchase requirements under these agreements and we purchase manufactured goods on a purchase order basis. As a result of our use of multiple contract manufacturers, we believe that we are not substantially dependent on the availability of any single contract manufacturer. Our contract manufacturers purchase the materials and components for our products through a variety of major electronics distributors. The materials and components of our solutions are generally available in adequate quantities from multiple potential suppliers.

Backlog

We do not have any long-term purchase commitments from customers. Customers generally order products on an as-needed basis with short lead and delivery times on a per-purchase-order basis. We maintain substantial finished goods inventory to ensure that products can generally be shipped shortly after receipt of an order.

A portion of our customer shipments in any fiscal period relate to orders received in prior fiscal periods. As of December 31, 2017 and 2016, we had backlog of \$40.0 million and \$24.5 million, respectively. The increase in backlog over that period was due principally to the timing of shipments of our software-centric broadband products, delivery of software-based capacity expansions and the timing of maintenance and support contract renewals. Of the amount of backlog as of December 31, 2017, we expect that approximately \$36.8 million will be shipped within the following twelve months. However, because our customers utilize purchase orders containing non-binding purchase commitments and customers may cancel, change or reschedule orders without penalty at any time prior to shipment, we have no assurance that we will be able to convert our backlog into shipped orders.

Intellectual Property

Our success depends to a significant degree upon our ability to protect our core technology and intellectual property. To accomplish this, we rely on a combination of trade secrets, patents, copyrights and trademarks, as well as contractual protections. To date, we have focused our efforts to protect our intellectual property primarily on trade secrets because the cable industry generally relies on non-patentable CableLabs standards and specifications that are jointly developed by market participants.

We limit access to and use of our proprietary software, technology and other confidential information through the use of internal and external controls, including nondisclosure agreements with employees, consultants, customers and vendors and other measures for maintaining trade secret protection. We generally license our software to customers pursuant to agreements that impose restrictions on the customers' ability to use the software, including prohibitions on reverse engineering and limitations on the use of copies. We also seek to avoid disclosure of our intellectual property by requiring employees and consultants with access to our proprietary information to execute nondisclosure and assignment of intellectual property agreements and by restricting access to our source code.

We also incorporate a number of third-party software programs into our solutions pursuant to license agreements. Our software is not substantially dependent on any third-party software, although in some cases it utilizes open source code.

Employees

As of December 31, 2017, we employed 680 full-time employees, of which 359 were located in the United States and 321 were located outside the United States. Our workforce as of December 31, 2017, consisted of 399 employees in engineering and research and development, 122 employees in sales and marketing, 65 employees in general and administrative, 59 employees in manufacturing and 35 employees in services and support. None of our employees are represented by unions. We consider our relationship with our employees to be good and have not experienced significant interruptions of operations due to labor disagreements.

Facilities

Our corporate headquarters is located in Andover, Massachusetts and consists of approximately 122,000 square feet of space. We own the property constituting our corporate headquarters, subject to an \$8.0 million mortgage loan. The annual interest rate on the loan is 3.5%, and the loan is repayable in 60 monthly installments of principal and interest based on a 20-year amortization schedule. The remaining amount of unpaid principal

under the loan is due on the maturity date of July 1, 2020. The loan terms include annual affirmative, negative and financial covenants, including a requirement that we maintain a minimum debt service ratio. We were in compliance with all annual covenants of the mortgage loan as of December 31, 2017. As of December 31, 2017, outstanding borrowings under the mortgage loan were \$7.3 million.

We lease additional facilities in Lawrence, Massachusetts and Limerick, Ireland that we use for manufacturing, testing, logistics, and customer support. We also lease a facility in Guangzhou, China that we use for manufacturing, testing, logistics, research and development and technical support and a facility in Valencia, Spain that we use primarily for research and development.

We believe that our current facilities are adequate to meet our current needs. We anticipate expanding our facilities as we add employees and enter new geographic markets. We believe that suitable additional or alternative space will be available on acceptable terms as needed to accommodate future growth.

Legal Proceedings

From time to time, we are a party to various litigation matters and subject to claims that arise in the ordinary course of business including, for example, patent infringement lawsuits by non-practicing entities. In addition, third parties may from time to time assert claims against us in the form of letters and other communications. There is no pending or threatened legal proceeding to which we are a party that, in our opinion, is likely to have a material adverse effect on our financial condition or results of operations. However, litigation is inherently unpredictable. Regardless of the outcome, litigation can adversely affect us because of defense and settlement costs, diversion of management resources and other factors.

MANAGEMENT**Executive Officers and Directors**

The following table provides information regarding our executive officers and directors as of April 15, 2018:

<u>Name</u>	<u>Age</u>	<u>Position</u>
Jerry Guo	54	President, Chief Executive Officer and Chairman
Gary Hall	56	Chief Financial Officer
Weidong Chen	50	Chief Technology Officer and Director
Lucy Xie	52	Senior Vice President of Operations and Director
Abraham Pucheril	51	Senior Vice President of Product Strategy and Management
Bruce R. Evans ⁽¹⁾⁽²⁾	59	Director
Daniel S. Mead ⁽¹⁾⁽²⁾	64	Director
Bill Styslenger ⁽²⁾	72	Director
Joseph S. Tibbetts, Jr. ⁽¹⁾	65	Director

(1) Member of audit committee

(2) Member of compensation committee

Executive Officers

Jerry Guo, the founder of our company, has served as our president and chief executive officer and as the chairman of our board of directors since our founding in 2003. Prior to founding our company, Mr. Guo served as the Vice President of Broadband at River Delta Networks, which was acquired by Motorola in 2001. Prior to that, Mr. Guo was a research scientist at Bell Laboratories' research division. Mr. Guo holds a Ph.D. degree in electrical engineering from the University of Wisconsin-Madison and an M.S. degree in optical instruments from the Department of Precision Instruments at Tsinghua University. We believe that Mr. Guo is qualified to serve on our board of directors due to his leadership experience in the broadband and network industries, his extensive knowledge of our company and his service as our president and chief executive officer.

Gary Hall has served as our chief financial officer since June 2011. Prior to joining Casa, from April 2007 to March 2010, Mr. Hall was the chief financial officer of eCopy, a provider of document management solutions. From August 2004 to June 2006, he served as the chief financial officer of MatrixOne, a product life-cycle management company, where he had previously served as controller from April 1999 to August 2004. Previously, Mr. Hall served in various accounting and auditing roles at Deloitte & Touche, a multinational professional services firm. Mr. Hall holds a M.S. degree in finance from Bentley College and a B.A. degree in accounting from Southern New Hampshire University.

Weidong Chen has served as our chief technology officer since 2004 and as a member of our board of directors since 2010. Prior to joining Casa, Mr. Chen served as a software manager at Motorola, a multinational telecommunications company from October 2001 to November 2003. Mr. Chen holds a Ph.D. degree in physics from the University of Pennsylvania. We believe that Mr. Chen's deep experience in the telecommunications industry, his extensive knowledge of our company and his position as our chief technology officer enable Mr. Chen to make a valuable contribution to our board of directors.

Lucy Xie has served as our senior vice president of operations since 2011 and as a member of our board of directors since 2003. From 2003 to 2011, Ms. Xie served as our chief financial officer and vice president of operations. Prior to joining Casa, Ms. Xie held various accounting, finance and management positions at Raytheon, a U.S. defense contractor and industrial corporation, and Lucent Technologies, a telecommunications equipment company. Ms. Xie has also served as the vice chairman and a board member of the Asia-America Chamber of Commerce. Ms. Xie holds an M.B.A. degree in accounting from Fairleigh Dickinson University. We believe that Ms. Xie is qualified to serve on our board of directors due to her experience as an executive in the telecommunications industry, her extensive knowledge of our company and her service as our senior vice president of operations.

Abraham Pucheril has served as our senior vice president of product strategy and management since January 2018 and as our senior vice president of worldwide sales from August 2012 to January 2018. Prior to joining Casa, Mr. Pucheril was the vice president of sales at Fujitsu Network Communications, Inc., a communications network equipment provider and a wholly owned subsidiary of Fujitsu Limited, from April 2005 to July 2012. Prior to joining Fujitsu, Mr. Pucheril served as area vice president of sales for Alcatel North America, a telecommunications conglomerate, from April 2003 to April 2005, and regional vice president of sales of Atoga Systems, a provider of advanced video and data transmission systems that was acquired by Arris Systems, Inc., from January 2002 to April 2003. He started his professional career with Bell Canada. Mr. Pucheril holds a B.E. degree in electronics and communications engineering from Mangalore University, an M.E. degree in electrical and electronics engineering from Anna University and an M.A.Sc. degree in electrical engineering from the University of Waterloo.

Board of Directors

Bruce R. Evans has been a director of our company since 2010. Since 1986, Mr. Evans has served in various positions with Summit Partners, a growth equity and venture capital investment firm, including most recently as Chairman of the Board and Senior Advisor to the firm. He is also currently a director of Analog Devices, a public company which designs and manufactures high-performance semiconductor products and several private companies. Mr. Evans previously served as a director of more than a dozen public companies, including, from May 2002 to November 2014, FleetCor Technologies, a provider of fuel cards and workforce payment products and services. In addition, he is Chairman of the Vanderbilt University Board of Trust. Mr. Evans holds a B.E. degree in mechanical engineering and economics from Vanderbilt University and an M.B.A. degree from Harvard Business School. We believe that Mr. Evans is qualified to serve on our board of directors due to his wide-ranging experience in growth equity and venture capital investing in the technology sector and his experience on other private and public company boards.

Daniel S. Mead has been a director of our company since March 2018. He has served on the board of directors of Syniverse Holdings, Inc., a publicly traded business services company in the mobile communications industry, since December 2016. For over thirty-five years, Mr. Mead served in various leadership roles at Verizon Communications and its predecessor companies, including serving from October 2010 to July 2015 as the chief executive officer and president of Verizon Wireless and from October 2009 to October 2010 as the chief operating officer and executive vice president of Verizon Wireless. Mr. Mead served as the chairman of the Cellular Telecommunications & Internet Association, or CTIA, from July 2013 until December 2014 and served as a member of the boards of directors of the CTIA from September 2010 until March 2015 and of Vodafone Omnitel from September 2009 until October 2010. Mr. Mead also served on the Board of Trustees at Pennsylvania State University from July 2014 to July 2017, including as chairman of its Finance and Capital Planning Committee. Mr. Mead has a B.S. degree in quantitative business analysis and finance from Pennsylvania State University and an M.B.A. degree from Pennsylvania State University. We believe that Mr. Mead is qualified to serve on our board of directors as a result of his significant leadership experience in the telecommunications industry.

Bill Styslinger has been a director of our company since 2012. Mr. Styslinger served as chairman, president and chief executive officer of SeaChange International, a provider of multiscreen video software and services, from its inception in July 1993 until his retirement in December 2011. Mr. Styslinger was also previously a member of the board of directors of Omtool, a provider of enterprise client/server facsimile software solutions. Mr. Styslinger holds a B.S. degree in Engineering Science from the State University of New York at Buffalo. We believe that Mr. Styslinger is qualified to serve on our board of directors due to his leadership expertise, including service as chief executive officer of a public company with international operations, as well as his knowledge of the telecommunications industry.

Joseph S. Tibbetts, Jr. has been a director of our company since November 2017. From March 2017 to March 2018, Mr. Tibbetts served as the interim chief financial officer of Acquia Inc., a provider of cloud-based, digital experience management solutions. Prior to that, Mr. Tibbetts served as the senior vice president and chief financial officer of the Publicis. Sapient unit of Publicis Group SA, from February 2015, when Publicis acquired Sapient Corporation, to September 2015. Prior to that, Mr. Tibbetts served as senior vice president and global chief financial officer for Sapient Corporation from October 2006 to February 2015. Mr. Tibbetts was formerly a partner with Price Waterhouse LLP. Mr. Tibbetts currently serves on the board of directors of Vivint, Inc., a provider of home automation equipment and services, Vivint Solar, Inc., a publicly traded provider of home solar energy solutions, and Carbon Black, Inc., a private provider of next-generation endpoint security solutions, which has publicly filed a registration statement on Form S-1 for an initial public offering. Mr. Tibbetts holds a B.S. degree in business administration from the University of New Hampshire. We believe that Mr. Tibbetts is qualified to serve on our board of directors due to his experience as an executive officer or director of other technology companies and his financial and accounting expertise.

Jerry Guo and Lucy Xie are married to one another. There are no other family relationships among any of our directors or executive officers.

Composition of the Board of Directors

Our board of directors currently consists of seven members. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal.

In accordance with the terms of our restated certificate of incorporation and amended and restated bylaws, our board of directors is divided into three classes, each of whose members serve for staggered three year terms. The members of the classes are divided as follows:

- the class I directors are Messrs. Chen, Guo and Mead, and their term will expire at the annual meeting of stockholders to be held in 2018;
- the class II directors are Messrs. Evans and Tibbetts, and their term will expire at the annual meeting of stockholders to be held in 2019; and
- the class III directors are Mr. Styslinger and Ms. Xie, and their term will expire at the annual meeting of stockholders to be held in 2020.

Our restated certificate of incorporation provides that the authorized number of directors may be changed only by resolution of our board of directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. This classification of our board of directors may have the effect of delaying or preventing changes in our control or management.

Our restated certificate of incorporation and amended and restated bylaws provide that our directors may be removed only for cause by the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in an annual election of directors. Upon the expiration of the term of a class of directors, directors in that class will be eligible to be elected for a new three-year term at the annual meeting of stockholders in the year in which their term expires. An election of our directors by our stockholders will be determined by a plurality of the votes cast by the stockholders entitled to vote on the election.

Director Independence

Rule 5605 of the Nasdaq listing rules requires a majority of a listed company's board of directors to be comprised of independent directors within one year of listing. In addition, the Nasdaq listing rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominations committees be independent, or, if a listed company has no nominations committee, that director nominees be selected or recommended for the board's selection by independent directors constituting a majority of the board's independent directors, and that audit committee members also satisfy independence criteria set forth in Rule 10A-3 under the Exchange Act and compensation committee members must also satisfy the independence criteria set forth in Rule 10C-1 under the Exchange Act. Under Rule 5605(a)(2), a director will only qualify as an "independent director" if, in the opinion of our board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee, accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries or otherwise be an affiliated person of the listed company or any of its subsidiaries.

The phase-in periods with respect to director independence under the Nasdaq listing rules allow us to have only one independent member on each of the audit committee and compensation committee upon the listing date of our common stock, a majority of independent members on each committee within 90 days of the listing date (or the effective date of the registration statement for our initial public offering, in the case of the audit committee) and fully independent committees and a majority of independent directors on our board of directors within one year of the listing date (or the effective date of the registration statement, in the case of the audit committee). Our listing date was December 15, 2017.

In November 2017, our board of directors undertook a review of the composition of our board of directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our board of directors determined that each of Messrs. Evans and Tibbetts is an "independent director" as defined under Rule 5605(a)(2) of the Nasdaq listing rules. Upon his election in March 2018, our board of directors also determined that Mr. Mead is an "independent director" as defined under Rule 5605(a)(2) of the Nasdaq listing rules. In making such determinations, our board of directors considered the relationships that each such non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant, including the beneficial ownership of our capital stock by each non-employee director and any institutional stockholder with which he is affiliated.

We expect to satisfy the independence requirements for each of the audit and compensation committees of our board of directors prior to the end of the transition period provided under Nasdaq listing rules and SEC rules and regulations for companies that have recently completed initial public offerings.

We do not intend to form a nominating and corporate governance committee at this time, and the independent members of our board of directors will be responsible for director nominations.

Board Leadership Structure

Our corporate governance guidelines provide that the roles of chairman of the board and chief executive officer may be separated or combined. Our board of directors has considered its leadership structure and determined that at this time Mr. Guo should serve both as our chief executive officer and as chairman of the board. Since 2003, Mr. Guo has served as our president and chief executive officer and has been an integral part of the leadership of our company and our board of directors, and his strategic vision has guided our growth and performance. Our board of directors believes that having Mr. Guo also serve as our chairman facilitates the board's decision-making process and enables Mr. Guo to act as the key link between the board of directors and other members of management.

Board Committees

Our board of directors has established an audit committee and compensation committee. Each of these committees operates under a charter that has been approved by our board of directors. Copies of the committee charters are posted on the "Documents & Charters" page under the heading "Governance" on the Investor Relations section of our website, which is located at *investors.casa-systems.com*. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider information contained on our website to be part of this prospectus or in deciding whether to purchase shares of our common stock.

Audit Committee

The members of our audit committee are Messrs. Evans, Mead and Tibbetts. Mr. Tibbetts is the chair of our audit committee. Our board of directors has determined that Mr. Mead and Mr. Tibbetts are independent within the meaning of Rule 10A-3 under the Exchange Act. Our board of directors has determined that Mr. Tibbetts is an "audit committee financial expert" as defined by applicable SEC rules.

Our audit committee's responsibilities include:

- appointing, approving the compensation of, and assessing the independence of our registered public accounting firm;
- overseeing the work of our registered public accounting firm, including through the receipt and consideration of reports from such firm;
- reviewing and discussing with management and the registered public accounting firm our annual and quarterly financial statements and related disclosures;
- monitoring our internal control over financial reporting, disclosure controls and procedures and code of business conduct and ethics;
- discussing our risk management policies;
- establishing policies regarding hiring employees from the registered public accounting firm and procedures for the receipt and retention of accounting related complaints and concerns;
- meeting independently with our registered public accounting firm and management;
- reviewing and approving or ratifying any related person transactions; and
- preparing the audit committee report required by SEC rules.

All audit services and all non-audit services, other than de minimis non-audit services, to be provided to us by our independent registered public accounting firm are required to be approved in advance by our audit committee.

We expect to satisfy the independence requirements for the audit committee prior to the end of the transition period provided under current Nasdaq listing rules and SEC rules and regulations for companies that have recently completed their initial public offering.

Compensation Committee

The members of our compensation committee are Messrs. Evans, Mead and Styslinger, and Mr. Evans is the chair of our compensation committee. Our board of directors has determined that Mr. Evans and Mr. Mead are independent within the meaning of Rule 10C-1 under the Exchange Act.

The compensation committee's responsibilities include:

- annually reviewing and approving or advising with respect to corporate goals and objectives relevant to CEO compensation;
- determining or advising with respect to our CEO's compensation;
- reviewing and approving, or making recommendations to our board of directors with respect to, the compensation of our other executive officers;
- overseeing an evaluation of our senior executives;
- overseeing and administering our equity incentive plans;
- reviewing and making recommendations to our board of directors with respect to director compensation;
- reviewing and discussing annually with management our "Compensation Discussion and Analysis" disclosure to the extent such disclosure is required by SEC rules; and
- preparing annual compensation committee reports to the extent required by SEC rules.

We expect to satisfy the independence requirements for the compensation committee prior to the end of the transition period provided under current Nasdaq listing rules and SEC rules and regulations for companies completing their initial public offering.

Compensation Committee Interlocks and Insider Participation

None of our executive officers serves as a member of the board of directors or compensation committee, or other committee serving an equivalent function, of any entity that has one or more executive officers who serve as members of our board of directors or our compensation committee. None of the members of our compensation committee is an officer or employee of our company, nor have they ever been an officer or employee of our company.

Code of Business Conduct and Ethics

We have adopted a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. A copy of the code is posted under the heading "Governance" on the Investor Relations section of our website, which is located at investors.casa-systems.com. In addition, we intend to continue to post on our website all disclosures that are required by law or the Nasdaq listing rules concerning any amendments to, or waivers from, any provision of the code.

EXECUTIVE COMPENSATION

Summary Compensation Table

The following table sets forth the total compensation paid to our chief executive officer and each of our two other most highly compensated executive officers for the years ended December 31, 2017 and 2016. We refer to these individuals as our “named executive officers.”

<u>Name and Principal Position</u>	<u>Year</u>	<u>Salary (\$)</u>	<u>Bonus (\$)</u>	<u>Stock Awards (\$)(1)</u>	<u>Option Awards (\$)(1)</u>	<u>All Other Compensation (\$)(2)</u>	<u>Total (\$)</u>
Jerry Guo	2017	729,926 ⁽³⁾	2,872,323 ⁽⁴⁾	1,118,370	2,093,945	8,100	6,822,664
<i>President, Chief Executive Officer and Chairman</i>	2016	664,566 ⁽⁵⁾	1,613,825 ⁽⁶⁾	1,065,115	1,989,328	7,950	5,340,784
Lucy Xie	2017	391,319 ⁽⁷⁾	778,305 ⁽⁴⁾	659,459	529,162	8,100	2,366,345
<i>Senior Vice President of Operations and Director</i>	2016	402,721 ⁽⁸⁾	538,337 ⁽⁶⁾	628,081	502,724	7,950	2,079,813
Weidong Chen	2017	387,695 ⁽⁹⁾	452,203 ⁽⁴⁾	376,808	302,382	8,100	1,527,188
<i>Chief Technology Officer and Director</i>	2016	378,206 ⁽¹⁰⁾	538,337 ⁽⁶⁾	358,885	287,266	7,950	1,570,644

(1) The amounts reported represent the aggregate grant-date fair value of the stock and option grants awarded to the named executive officer during the year in question, calculated in accordance with FASB ASC Topic 718. Such grant-date fair values do not take into account any estimated forfeitures related to service-vesting conditions. The assumptions used in calculating the grant-date fair value of the sale of the stock or equity awards reported in this column are set forth in the notes to our consolidated financial statements included elsewhere in this prospectus. The amounts reported in this column reflect the accounting cost for these stock options and do not correspond to the actual economic value that may be received by the named executive officers upon exercise of the stock options.

(2) Constitutes matching contributions to 401(k) plans.

(3) Includes \$52,119 of cash paid in lieu of vacation earned in 2017 and paid in 2018.

(4) Consists of a discretionary bonus for 2017 performance that was paid in 2018.

(5) Includes \$16,554 of cash paid in lieu of vacation earned in 2016 and paid in 2017.

(6) Consists of a discretionary bonus for 2016 performance that was determined and paid in early 2017.

(7) Includes \$14,483 of cash paid in lieu of vacation earned in 2017 and paid in 2018.

(8) Includes \$42,449 of cash paid in lieu of vacation earned in 2016 and paid in 2017.

(9) Includes \$10,859 of cash paid in lieu of vacation earned in 2017 and paid in 2018.

(10) Includes \$17,934 of cash paid in lieu of vacation earned in 2016 and paid in 2017.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth information regarding outstanding stock awards held as of December 31, 2017 by our named executive officers.

Name	Grant Date	Option Awards				RSUs	
		Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)	Option Exercise Price (\$)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested (\$)(1)
Jerry Guo	1/23/2015(2)	787,495	292,500	4.18	1/23/2025		
	1/23/2015(3)					192,860	3,425,194
	1/23/2015(4)					115,715	2,055,098
	3/26/2016(5)	283,740	308,420	8.39	3/25/2026		
	3/26/2016(6)					95,170	1,690,219
	1/31/2017(7)	—	426,535	12.24	1/30/2027		
	1/31/2017(8)					91,400	1,623,264
Lucy Xie	1/23/2015(2)	165,840	61,600	4.18	1/23/2025		
	1/23/2015(3)					56,865	1,009,922
	1/23/2015(4)					56,860	1,009,834
	3/26/2016(5)	71,700	77,945	8.39	3/25/2026		
	3/26/2016(6)					56,120	996,691
	1/31/2017(7)	—	107,790	12.24	1/30/2027		
	1/31/2017(8)					53,895	957,175
Weidong Chen	5/25/2012	600,000	—	1.69	5/24/2022		
	1/23/2015(2)	94,760	35,205	4.18	1/23/2025		
	1/23/2015(3)					32,495	577,111
	1/23/2015(4)					32,495	577,111
	3/26/2016(5)	40,965	44,545	8.39	3/25/2026		
	3/26/2016(6)					32,070	569,563
	1/31/2017(7)	—	61,595	12.24	1/30/2027		
	1/31/2017(8)					30,795	546,919

- (1) The value of equity awards is based on the closing price of our stock on the Nasdaq Global Select Market on December 29, 2017.
- (2) One-fourth (1/4) of the shares of our common stock subject to this stock option award vested on January 1, 2016, and the balance is scheduled to vest in 36 equal monthly installments thereafter, subject to continued service with us through each applicable vesting date.
- (3) One-half (1/2) of these RSUs vested on January 1, 2016, one-third (1/3) vested on January 1, 2017 and one-sixth (1/6) vested on January 1, 2018.
- (4) One-fourth (1/4) of these RSUs vested on each of January 1, 2016, 2017 and 2018, and one-fourth (1/4) are scheduled to vest on January 1, 2019, subject to continued service with us through each applicable vesting date.
- (5) One-fourth (1/4) of the shares of our common stock subject to this stock option award vested on January 1, 2017, and the balance is scheduled to vest in 36 equal monthly installments thereafter, subject to continued service with us through each applicable vesting date.
- (6) One-fourth (1/4) of these RSUs vested on each of January 1, 2017 and 2018, and one-fourth (1/4) are scheduled to vest each year thereafter, subject to continued service with us through each applicable vesting date.
- (7) One-fourth (1/4) of the shares of our common stock subject to this stock option award vested on January 1, 2018, and the balance is scheduled to vest in 36 equal monthly installments thereafter, subject to continued service with us through each applicable vesting date.
- (8) One-fourth (1/4) of these RSUs vested on January 1, 2018, and one-fourth (1/4) are scheduled to vest each year thereafter, subject to continued service with us through each applicable vesting date.

Potential Payments upon Termination or Change in Control

Under each of our 2011 Stock Incentive Plan and our 2017 Stock Incentive Plan, our board of directors may provide that outstanding awards shall become exercisable, realizable, or deliverable, or restrictions applicable to an award shall lapse, in whole or in part, in connection with (a) any merger or consolidation of the company with or into another entity as a result of which all of the common stock of the company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the common stock of the company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the company. Further, under our 2003 Stock Incentive Plan, our 2011 Stock Incentive Plan, and our 2017 Stock Incentive Plan, our board of directors has complete discretion to cause any award to become immediately exercisable in whole or in part, free of some or all restrictions or conditions, or otherwise realizable in whole or in part, as the case may be.

Employment Agreements

Employment Agreement with Mr. Guo

We are a party to an employment agreement with Mr. Guo dated November 17, 2017. Under the employment agreement, Mr. Guo is an at-will employee, and his employment with us can be terminated by him or us at any time and for any reason. The employment agreement provides that Mr. Guo is entitled to a base salary of \$677,806 during his employment with us and that he is eligible, at our sole discretion, to earn a target annual bonus equal to 150% of his base salary. Mr. Guo's current base salary is \$711,697 and his current target annual bonus amount is 250% of his base salary. The employment agreement also provides that Mr. Guo is eligible to participate in our annual long-term incentive program, with a target annual equity award equal to 550% of his then-current base salary, and with the form, terms and conditions of such long-term incentive awards to be determined in our sole discretion.

Under the employment agreement, Mr. Guo is entitled, subject to his execution and nonrevocation of a release of claims in our favor, in the event of the termination of his employment by us without cause or by him for good reason, each as defined in his employment agreement with us, to (i) receive an amount equal to the sum of his then-current annual base salary plus his target annual bonus for the year of his termination of employment, with such amount payable in equal installments over a period of 12 months, (ii) continue to receive an amount equal to COBRA premiums for health benefit coverage on the same terms as were applicable to him prior to his termination for a period of 12 months following the date that his employment with us is terminated, or earlier, if he becomes eligible to enroll in a health benefit plan with a new employer and (iii) accelerated vesting of all outstanding and unvested stock options and other equity awards, with any stock options being exercisable following his termination of employment for the period of time set forth in the applicable option agreement.

In addition, the employment agreement provides that in the event Mr. Guo's employment with us terminates by reason of his death or disability, Mr. Guo is entitled to accelerated vesting of all outstanding and unvested stock options and other equity awards, with any stock options being exercisable following his termination of employment for the period of time set forth in the applicable option agreement.

Employment Agreement with Ms. Xie

We are a party to an employment agreement with Ms. Xie dated November 17, 2017. Under the employment agreement, Ms. Xie is an at-will employee, and her employment with us can be terminated by her or us at any time and for any reason. The employment agreement provides that Ms. Xie is entitled to a base salary of \$376,836 during her employment with us and that she is eligible, at our sole discretion, to earn a target annual bonus equal to 100% of her base salary. Ms. Xie's current base salary is \$395,678 and her current target annual

bonus amount is 125% of her base salary. The employment agreement also provides that Ms. Xie is eligible to participate in our annual long-term incentive program, with a target annual equity award equal to 350% of her then-current base salary, and with the form, terms and conditions of such long-term incentive awards to be determined in our sole discretion.

Under the employment agreement, Ms. Xie is entitled, subject to her execution and nonrevocation of a release of claims in our favor, in the event of the termination of her employment by us without cause or by her for good reason, each as defined in her employment agreement with us, to (i) receive an amount equal to the sum of her then-current annual base salary plus her target annual bonus for the year of her termination of employment, with such amount payable in equal installments over a period of 12 months, (ii) continue to receive an amount equal to COBRA premiums for health benefit coverage on the same terms as were applicable to her prior to her termination for a period of 12 months following the date that her employment with us is terminated, or earlier, if she becomes eligible to enroll in a health benefit plan with a new employer and (iii) accelerated vesting of all outstanding and unvested stock options and other equity awards, with any stock options being exercisable following her termination of employment for the period of time set forth in the applicable option agreement.

In addition, the employment agreement provides that in the event Ms. Xie's employment with us terminates by reason of her death or disability, Ms. Xie is entitled to accelerated vesting of all outstanding and unvested stock options and other equity awards, with any stock options being exercisable following her termination of employment for the period of time set forth in the applicable option agreement.

Employment Agreement with Mr. Chen

We are a party to an employment agreement with Mr. Chen dated November 17, 2017. Under the employment agreement, Mr. Chen is an at-will employee, and his employment with us can be terminated by him or us at any time and for any reason. The employment agreement provides that Mr. Chen is entitled to a base salary of \$376,836 during his employment with us and that he is eligible, at our sole discretion, to earn a target annual bonus equal to 100% of his base salary. Mr. Chen's current base salary is \$395,678 and his current target annual bonus amount is 125% of his base salary. The employment agreement also provides that Mr. Chen is eligible to participate in our annual long-term incentive program, with a target annual equity award equal to 200% of his then-current base salary, and with the form, terms and conditions of such long-term incentive awards to be determined in our sole discretion.

Under the employment agreement, Mr. Chen is entitled, subject to his execution and nonrevocation of a release of claims in our favor, in the event of the termination of his employment by us without cause or by him for good reason, each as defined in his employment agreement with us, to (i) receive an amount equal to the sum of his then-current annual base salary plus his target annual bonus for the year of his termination of employment, with such amount payable in equal installments over a period of 12 months, (ii) continue to receive an amount equal to COBRA premiums for health benefit coverage on the same terms as were applicable to him prior to his termination for a period of 12 months following the date that his employment with us is terminated, or earlier, if he becomes eligible to enroll in a health benefit plan with a new employer and (iii) accelerated vesting of all outstanding and unvested stock options and other equity awards, with any stock options being exercisable following his termination of employment for the period of time set forth in the applicable option agreement.

In addition, the employment agreement provides that in the event Mr. Chen's employment with us terminates by reason of his death or disability, Mr. Chen is entitled to accelerated vesting of all outstanding and unvested stock options and other equity awards, with any stock options being exercisable following his termination of employment for the period of time set forth in the applicable option agreement.

Retirement Benefits

We maintain a retirement plan for the benefit of our employees, including our named executive officers. The plan is intended to qualify as a tax-qualified 401(k) plan so that contributions to the 401(k) plan, and income earned on such contributions, are not taxable to participants until withdrawn or distributed from the 401(k) plan (except in the case of contributions under the 401(k) plan designated as Roth contributions). Under the 401(k) plan, each employee is fully vested in his or her deferred salary contributions. Employee contributions are held and invested by the plan's trustee as directed by participants. We match 50% of employee contributions to our 401(k) plan up to a maximum amount of 6% of eligible wages.

Employee Benefits and Perquisites

Our named executive officers are eligible to participate in our health and welfare plans to the same extent as all full-time employees.

Director Compensation

During the year ended December 31, 2017, we paid to Bill Styslinger an annual cash retainer of \$200,000, payable quarterly in arrears, for his services as a director and an annual cash retainer of \$5,000, payable annually in arrears, for his services as a member of the compensation committee of our board of directors. This arrangement terminated upon the closing of our initial public offering on December 19, 2017. In addition, in connection with Mr. Tibbetts' appointment to our board of directors, we granted to Mr. Tibbetts, upon the commencement of trading of our common stock on the Nasdaq Global Select Market on December 15, 2017, restricted stock units for 23,076 and 11,538 shares, respectively, with the restricted stock unit for 23,076 shares vesting on a quarterly basis over a period of three years after the date of his appointment to our board of directors and the restricted stock unit for 11,538 shares vesting on the first anniversary of the date of his appointment to our board of directors, in each case subject to Mr. Tibbetts' continued service as a director, with full acceleration of vesting upon a change in control of our company. Prior to our initial public offering, none of our other directors received compensation for service on our board of directors or committees of our board of directors during the year ended December 31, 2017.

We also have a policy of reimbursing our directors for their reasonable out-of-pocket expenses incurred in attending board of directors and committee meetings.

In November 2017, our board of directors approved a non-employee director compensation program that became effective upon the closing of our initial public offering on December 19, 2017. In April 2018, our board of directors amended the program to provide that non-employee directors beneficially owning more than 10% of our outstanding common stock would not be entitled to compensation under the program. Under the program, new non-employee directors that qualify under the program receive an initial award in the form of restricted stock units for the number of shares of our common stock equal to \$300,000 divided by the closing price of our common stock on the Nasdaq Global Select Market on the date of such director's initial election to our board of directors. Any such restricted stock units will vest in equal increments at the end of each successive three-month period, over a period of three years after the date of grant. In addition, non-employee directors that qualify under the program receive the cash compensation set forth below, and an additional payment of \$150,000 annually on the date of the first meeting of our board of directors held on or after the date of each annual meeting of stockholders, to be paid, at the discretion of our board of directors, in the form of cash or restricted stock units for the number of shares of our common stock equal to \$150,000 divided by the closing price of our common stock on the Nasdaq Global Select Market on the date of grant. Any such restricted stock units will vest one year after the date of grant. However, because Mr. Tibbetts became a director prior to the closing of our initial public offering and, in connection with his becoming a director, received an award of restricted stock units, effective upon the commencement of trading of our common stock on the Nasdaq Global Select Market, that was equivalent to such \$150,000 annual payment for 2018, Mr. Tibbetts will not be eligible to receive the annual

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\$150,000 payment described above in 2018. Restricted stock units granted under our non-employee director compensation policy are settleable upon vesting in the form of cash or shares of our common stock at the discretion of our board of directors. The vesting of any restricted stock units to our non-employee directors under our non-employee director compensation policy is subject to such non-employee director's continued service as a director and will accelerate in full upon a change in control of our company.

Under our non-employee director compensation program, each non-employee director that qualifies under the program is eligible to receive compensation for his or her service on our board of directors or committees thereof consisting of annual cash retainers paid quarterly in arrears, as follows:

Position	Retainer
Board member	\$50,000
Audit committee chair	\$20,000
Compensation committee chair	\$10,000
Audit committee member	\$10,000
Compensation committee member	\$ 5,000

The following table sets forth information regarding compensation earned by our non-employee directors during the year ended December 31, 2017.

Name	Fees earned or paid in cash (\$)	Stock awards (\$)(1)	Total (\$)
Bruce R. Evans	\$ 10,849(2)	—	\$ 10,849
Daniel S. Mead(3)	—	—	—
Bill Styslinger	\$ 205,000	—	\$205,000
Joseph S. Tibbetts, Jr.	\$ 8,560(4)	\$ 449,982	\$458,542

- (1) Amount reflects the aggregate grant date fair market value, calculated in accordance with FASB ASC Topic 718, of RSU awards granted to Mr. Tibbetts on December 15, 2017 for 23,076 and 11,538 shares of our common stock, representing an initial equity granted of restricted stock units, and an additional annual payment that our board of directors determined to pay in the form of restricted stock units, in each case intended to be consistent with our non-employee director compensation program that became effective upon the closing of our initial public offering. As of December 31, 2017, Mr. Styslinger held outstanding and unexercised options to purchase 300,000 shares of common stock and Mr. Tibbetts held 34,614 unvested RSUs.
- (2) The amount of Mr. Evans's annual cash retainer and additional annual payment was pro-rated upon the effectiveness of our registration statement on Form S-1 on December 14, 2017. As a result of the April 2018 amendment to the non-employee director compensation program described above, Mr. Evans ceased receiving fees in connection with his board service effective January 1, 2018.
- (3) Mr. Mead joined our board of directors on March 8, 2018.
- (4) The amount of Mr. Tibbetts's annual cash retainer was pro-rated to reflect the fact that he joined our board of directors and audit committee on November 15, 2017.

Stock Option and Other Compensation Plans

Prior to our initial public offering, we granted awards under our 2003 Stock Incentive Plan, as amended to date, and our 2011 Stock Incentive Plan, as amended to date. In connection with our initial public offering, we started granting awards under our 2017 Stock Incentive Plan and ceased granting awards under all prior plans.

2017 Stock Incentive Plan

The 2017 Stock Incentive Plan provides for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, RSUs and other stock-based awards. The number of shares of our common stock that are reserved for issuance under the 2017 Stock Incentive Plan is equal to the sum of: (1) 7,160,685 plus; (2) the number of shares (up to 18,746,045 shares) equal to the sum of the number of shares of our common stock then available for issuance under the 2003 Stock Incentive Plan and the 2011 Stock Incentive Plan as of immediately prior to the effectiveness of the registration statement for our initial public

offering and the number of shares of our common stock subject to outstanding awards under the 2003 Stock Incentive Plan and the 2011 Stock Incentive Plan that expire, terminate or are otherwise surrendered, cancelled, forfeited or repurchased by us at their original issuance price pursuant to a contractual repurchase right; plus (3) an annual increase, to be added on the first day of each fiscal year, beginning with the fiscal year ending December 31, 2019 and continuing until, and including, the fiscal year ending December 31, 2027, equal to the lowest of 20,000,000 shares of our common stock, 4% of the number of shares of our common stock outstanding on the first day of such fiscal year and an amount determined by our board of directors.

Our employees, officers, directors, consultants and advisors are eligible to receive awards under the 2017 Stock Incentive Plan. Incentive stock options, however, may only be granted to our employees. Pursuant to the terms of the 2017 Stock Incentive Plan, our board of directors (or a committee delegated by our board of directors) administers the plan and, subject to any limitations in the plan, will select the recipients of awards and determine:

- the number of shares of our common stock covered by options and the dates upon which the options become exercisable;
- the type of options to be granted;
- the duration of options, which may not be in excess of ten years;
- the exercise price of options, which must be at least equal to the fair market value of our common stock on the date of grant; and
- the number of shares of our common stock subject to and the terms of any stock appreciation rights, restricted stock awards, RSUs or other stock-based awards and the terms and conditions of such awards, including conditions for repurchase, issue price and repurchase price (though the measurement price of stock appreciation rights must be at least equal to the fair market value of our common stock on the date of grant and the duration of such awards may not be in excess of ten years).

If our board of directors delegates authority to an executive officer to grant awards under the 2017 Stock Incentive Plan, the executive officer will have the power to make awards to all of our employees, except executive officers. Our board of directors will fix the terms of the awards to be granted by such executive officer, including the exercise price of such awards (which may include a formula by which the exercise price will be determined), and the maximum number of shares subject to awards that such executive officer may make.

Effect of Certain Changes in Capitalization. Upon the occurrence of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of our common stock other than an ordinary cash dividend, our board of directors shall equitably adjust:

- the number and class of securities available under the 2017 Stock Incentive Plan;
- the share counting rules under the 2017 Stock Incentive Plan;
- the number and class of securities and exercise price per share of each outstanding option;
- the share and per-share provisions and the measurement price of each outstanding stock appreciation right;
- the number of shares subject to, and the repurchase price per share subject to, each outstanding restricted stock award; and
- the share and per-share related provisions and the purchase price, if any, of each other stock-based award.

Effect of Certain Corporate Transactions. Upon a merger or other reorganization event (as defined in our 2017 Stock Incentive Plan), our board of directors may, on such terms as our board of directors determines

(except to the extent specifically provided otherwise in an applicable award agreement or other agreement between the participant and us), take any one or more of the following actions pursuant to the 2017 Stock Incentive Plan as to some or all outstanding awards, other than restricted stock awards:

- provide that all outstanding awards shall be assumed, or substantially equivalent awards shall be substituted, by the acquiring or successor corporation (or an affiliate thereof);
- upon written notice to a participant, provide that all of the participant's unvested and/or vested but unexercised awards will terminate immediately prior to the consummation of such reorganization event unless exercised by the participant (to the extent then exercisable);
- provide that outstanding awards shall become exercisable, realizable or deliverable, or restrictions applicable to an award shall lapse, in whole or in part, prior to or upon such reorganization event;
- in the event of a reorganization event pursuant to which holders of shares of our common stock will receive a cash payment for each share surrendered in the reorganization event, make or provide for a cash payment to the participants with respect to each award held by a participant equal to (1) the number of shares of our common stock subject to the vested portion of the award (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such reorganization event) multiplied by (2) the excess, if any, of the cash payment for each share surrendered in the reorganization event over the exercise, measurement or purchase price of such award and any applicable tax withholdings, in exchange for the termination of such award; and/or
- provide that, in connection with a liquidation or dissolution, awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise, measurement or purchase price thereof and any applicable tax withholdings).

Our board of directors does not need to take the same action with respect to all awards, all awards held by a participant or all awards of the same type.

In the case of certain RSUs, no assumption or substitution is permitted, and the RSUs will instead be settled in accordance with the terms of the applicable RSU agreement.

Upon the occurrence of a reorganization event other than a liquidation or dissolution, the repurchase and other rights with respect to outstanding restricted stock awards will continue for the benefit of the successor company and will, unless the board of directors may otherwise determine, apply to the cash, securities or other property into which shares of our common stock are converted or exchanged pursuant to the reorganization event. Upon the occurrence of a reorganization event involving a liquidation or dissolution, all restrictions and conditions on each outstanding restricted stock award will automatically be deemed terminated or satisfied, unless otherwise provided in the agreement evidencing the restricted stock award or any other agreement between the participant and us.

At any time, our board of directors may, in its sole discretion, provide that any award under the 2017 Stock Incentive Plan will become immediately exercisable in full or in part, free of some or all restrictions or conditions, or otherwise realizable in whole or in part as the case may be.

No award may be granted under the 2017 Stock Incentive Plan after December 13, 2027. Our board of directors may amend, suspend or terminate the 2017 Stock Incentive Plan at any time, except that stockholder approval may be required to comply with applicable law or stock market requirements.

As of March 31, 2018, options to purchase 1,067,376 shares of common stock were outstanding under the 2017 Stock Incentive Plan, at a weighted-average exercise price of \$17.89 per share, and no options to purchase shares of our common stock had been exercised. In addition, as of such date, 135,723 RSUs were outstanding under the 2017 Stock Incentive Plan.

2011 Stock Incentive Plan

The 2011 Stock Incentive Plan provided for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock units and shares, restricted or otherwise, of our common stock. Our employees, officers, directors, consultants and advisors were eligible to receive awards under our 2011 Stock Incentive Plan; however incentive stock options could only be granted to our employees. The type of award granted under our 2011 Stock Incentive Plan and the terms of such award are set forth in the applicable award agreement.

Pursuant to the terms of the 2011 Stock Incentive Plan, our board of directors (or a committee assigned by our board of directors) administers the 2011 Stock Incentive Plan. The board of directors has complete discretion to take any actions it deems necessary or advisable for the administration of the 2011 Stock Incentive Plan. All decisions, interpretations and other actions of our board of directors are final and binding on all participants and all persons deriving their rights from a participant. In addition, subject to any limitations in the 2011 Stock Incentive Plan, our board of directors selected the recipients of awards and determined:

- the number of shares of our common stock covered by options and the dates upon which the options become exercisable;
- the type of options to be granted;
- the duration of options, which could not be in excess of ten years;
- the exercise price of options, which was required to be at least equal to the fair market value of our common stock on the date of grant; and
- the number of shares of our common stock subject to, and the terms of any restricted stock awards or restricted stock units, and the terms and conditions of such awards, including conditions for repurchase, issue price and repurchase price.

Effect of Certain Changes in Capitalization. Pursuant to the 2011 Stock Incentive Plan, in the event of stock split, stock dividend, a combination of shares, reverse stock-split, a reclassification, or any other increase or decrease in the number of issued shares of our common stock effected without receipt of consideration by us, proportionate adjustments shall automatically be made in each of:

- the number of shares of our common stock available for issuance under the 2011 Stock Incentive Plan;
- the number of shares of our common stock covered by each outstanding option or RSU granted under the 2011 Stock Incentive Plan; and
- the exercise price under each outstanding option granted under the 2011 Stock Incentive Plan.

Our board of directors, in its sole discretion, may also make appropriate adjustments to one or more of the same items described above in the event of a declaration of an extraordinary dividend payable in a form other than shares of our common stock that has a material effect on the fair market value of shares of our common stock, a recapitalization, a spin-off or any similar occurrence.

Effect of Certain Corporate Transactions. In the event that we are a party to a merger or consolidation, all shares of our common stock acquired under the 2011 Stock Incentive Plan and all awards outstanding under the 2011 Stock Incentive Plan on the effective date of the transaction shall be treated in the manner described in the agreement of merger or consolidation, which agreement need not treat all awards in an identical manner but which must preserve an award's status as exempt from or compliant with Section 409A of the Internal Revenue Code of 1986, as amended, or the Code, and must provide for one or more of the following:

- continuation of the outstanding award by us if we are the surviving corporation;
- assumption, or substitution of substantially equivalent awards, of the outstanding award by the surviving corporation or its parent, provided that the assumption or substitution is accomplished in a

manner that complies with the rules regarding assumptions or substitutions that apply to incentive stock options under the Code (whether the outstanding award is an incentive stock option or a nonstatutory stock option);

- acceleration of the date of exercise or vesting of an option (which may be contingent on the closing of the merger or consolidation) followed by the termination of the option if it is not timely exercised prior to the closing of the merger or consolidation (which exercise may also be contingent on the closing of the merger or consolidation); or
- cancellation of the outstanding award in exchange for a payment (if any) equal to the fair market value of a share of common stock as of the closing date of the merger or consolidation minus the per-share exercise price of the award (if any).

Subject to the limitations of the 2011 Stock Incentive Plan, our board of directors may modify, extend or assume outstanding options and RSUs and may accept the cancellation of outstanding options in return for the grant of new options for the same or a different number of shares of our common stock or a different exercise price.

As of March 31, 2018, options to purchase 14,502,800 shares of common stock were outstanding under the 2011 Stock Incentive Plan, at a weighted-average exercise price of \$4.26 per share, and options to purchase 3,428,240 shares of our common stock had been exercised. In addition, as of such date, 371,855 RSUs were outstanding under the 2011 Stock Incentive Plan.

No further awards will be made under our 2011 Stock Incentive Plan; however, awards outstanding under our 2011 Stock Incentive Plan will continue to be governed by their existing terms.

2003 Stock Incentive Plan

The 2003 Stock Incentive Plan provided for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock units and shares, restricted or otherwise, of our common stock. Our employees, officers, directors, consultants and advisors were eligible to receive awards under our 2003 Stock Incentive Plan; however incentive stock options could only be granted to our employees.

The type of award granted under our 2003 Stock Incentive Plan and the terms of such award are set forth in the applicable award agreement.

Pursuant to the terms of the 2003 Stock Incentive Plan, our board of directors (or a committee assigned by our board of directors) administers the 2003 Stock Incentive Plan. The board of directors has complete discretion to take any actions it deems necessary or advisable for the administration of the 2003 Stock Incentive Plan. All decisions, interpretations and other actions of our board of directors are final and binding on all participants and all persons deriving their rights from a participant. In addition, subject to any limitations in the 2003 Stock Incentive Plan, our board of directors selected the recipients of awards and determined:

- the number of shares of our common stock covered by options and the dates upon which the options become exercisable;
- the type of options to be granted;
- the duration of options, which could not be in excess of ten years;
- the exercise price of options, which was required to be at least equal to the fair market value of our common stock on the date of grant; and
- the number of shares of our common stock subject to, and the terms of any restricted stock awards or restricted stock units, and the terms and conditions of such awards, including conditions for repurchase, issue price and repurchase price.

Effect of Certain Changes in Capitalization. Pursuant to the 2003 Stock Incentive Plan, in the event of stock split, stock dividend, a combination of shares, reverse stock-split, a reclassification, or any other increase or decrease in the number of issued shares of our common stock effected without receipt of consideration by us, proportionate adjustments shall automatically be made in each of:

- the number of shares of our common stock available for issuance under the 2003 Stock Incentive Plan;
- the number of shares of our common stock covered by each outstanding option or RSU granted under the 2003 Stock Incentive Plan; and
- the exercise price under each outstanding option granted under the 2003 Stock Incentive Plan.

Our board of directors, in its sole discretion, may also make appropriate adjustments to one or more of the same items described above in the event of a declaration of an extraordinary dividend payable in a form other than shares of our common stock that has a material effect on the fair market value of shares of our common stock, a recapitalization, a spin-off or any similar occurrence.

Effect of Certain Corporate Transactions. In the event that we are a party to a merger or consolidation, all shares of our common stock acquired under the 2003 Stock Incentive Plan and all awards outstanding under the 2003 Stock Incentive Plan on the effective date of the transaction shall be treated in the manner described in the agreement of merger or consolidation, which agreement need not treat all awards in an identical manner but which must preserve an award's status as exempt from or compliant with Section 409A of the Code and must provide for one or more of the following:

- continuation of the outstanding award by us if we are the surviving corporation;
- assumption, or substitution of substantially equivalent awards, of the outstanding award by the surviving corporation or its parent, provided that the assumption or substitution is accomplished in a manner that complies with the rules regarding assumptions or substitutions that apply to incentive stock options under the Code (whether the outstanding award is an incentive stock option or a nonstatutory stock option);
- acceleration of the date of exercise or vesting of an option (which may be contingent on the closing of the merger or consolidation) followed by the termination of the option if it is not timely exercised prior to the closing of the merger or consolidation (which exercise may also be contingent on the closing of the merger or consolidation); or
- cancellation of the outstanding award in exchange for a payment (if any) equal the fair market value of a share of common stock as of the closing date of the merger or consolidation minus the per-share exercise price of the award (if any).

Subject to the limitations of the 2003 Stock Incentive Plan, our board of directors may modify, extend or assume outstanding options and RSUs and may accept the cancellation of outstanding options in return for the grant of new options for the same or a different number of shares of our common stock or a different exercise price.

As of March 31, 2018, options to purchase 145,830 shares of common stock were outstanding under the 2003 Stock Incentive Plan, at a weighted-average exercise price of \$0.25 per share, and options to purchase 2,564,170 shares of our common stock had been exercised. In addition, as of such date no RSUs were outstanding under the 2003 Stock Incentive Plan.

No further awards will be made under our 2003 Stock Incentive Plan; however, awards outstanding under our 2003 Stock Incentive Plan continue to be governed by their existing terms.

Limitation of Liability and Indemnification

Our restated certificate of incorporation limits the personal liability of directors for breach of fiduciary duty to the maximum extent permitted by the Delaware General Corporation Law and provides that no director will

have personal liability to us or to our stockholders for monetary damages for breach of fiduciary duty or other duty as a director. However, these provisions do not eliminate or limit the liability of any of our directors:

- for any breach of the director's duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- for voting or assenting to unlawful payments of dividends, stock repurchases or other distributions; or
- for any transaction from which the director derived an improper personal benefit.

Any amendment to, or repeal of, these provisions will not eliminate or reduce the effect of these provisions in respect of any act, omission or claim that occurred or arose prior to such amendment or repeal. If the Delaware General Corporation Law is amended to provide for further limitations on the personal liability of directors of corporations, then the personal liability of our directors will be further limited to the greatest extent permitted by the Delaware General Corporation Law.

In addition, our restated certificate of incorporation provides that we must indemnify our directors and officers and we must advance expenses, including attorneys' fees, to our directors and officers in connection with legal proceedings, subject to very limited exceptions.

We maintain a general liability insurance policy that covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers. In addition, we have entered into indemnification agreements with each of our directors and executive officers. These indemnification agreements may require us, among other things, to indemnify each such director and executive officer for some expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by him or her in any action or proceeding arising out of his or her service as one of our directors or executive officers.

Certain of our non-employee directors may, through their relationships with their employers, be insured and/or indemnified against certain liabilities incurred in their capacity as members of our board of directors. We have agreed that we will be the indemnitor of "first resort," however, with respect to any claims against these directors for indemnification claims that are indemnifiable by both us and their employers. Accordingly, to the extent that indemnification is permissible under applicable law, we will have full liability for such claims (including for the advancement of any expenses) and we have waived all related rights of contribution, subrogation or other recovery that we might otherwise have against these directors' employers.

Rule 10b5-1 Sales Plans

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or officer when entering into the plan, without further direction from them. The director or officer may amend or terminate the plan in some circumstances. Our directors and executive officers may also buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material, nonpublic information. Prior to 90 days after the date of this prospectus, subject to early termination, the sale of any shares under such plan would be subject to the lock-up agreement that the director or executive officer has entered into with the underwriters.

RELATED PERSON TRANSACTIONS

Other than compensation arrangements for our executive officers which are described elsewhere in this prospectus or that are not required to be disclosed herein in accordance with the rules of the SEC, below we describe transactions since January 1, 2015 to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed \$120,000; and
- any of our directors, executive officers or holders of more than 5% of our capital stock, or any member of the immediate family of, or person sharing the household with, the foregoing persons, had or will have a direct or indirect material interest.

Participation in Initial Public Offering

Summit Partners, our largest stockholder and a growth equity and venture capital investment firm for which one of our directors, Bruce R. Evans, serves as Chairman of the Board and a Senior Advisor, purchased 250,000 shares of our common stock in our initial public offering. In addition, Jerry Guo, our President and Chief Executive Officer, purchased 100,000 shares of our common stock in our initial public offering. Such purchases were made through the underwriters at the initial public offering price of \$13.00 per share for an aggregate purchase price of \$4,550,000.

Under Section 16(b) of the Securities Exchange Act of 1934, or the Exchange Act, any officer, director or 10% stockholder of a public company who realizes any profit from a non-exempt purchase and sale (or sale and purchase) of equity securities of the company within a period of less than six months is automatically liable to pay to the company the amount of any such realized profit. In light of the requirements of Section 16(b) of the Exchange Act and their purchases in our initial public offering, Summit Partners and Jerry Guo, as selling stockholders in this offering, have agreed to disgorge to us, for each share sold by them in this offering (up to a maximum of 250,000 shares and 100,000 shares, respectively), an amount equal to the difference between the public offering price per share in this offering (less the per share underwriting discounts and commissions payable by them) and the initial public offering price of \$13.00 per share, with the aggregate amount of such disgorgement subject to reduction by the amount of any other direct offering expenses payable by them in accordance with Section 16(b). Based on an assumed offering price of \$30.12 per share, which was the closing price of our common stock on the Nasdaq Global Select Market on April 20, 2018, the aggregate amount of such payments by Summit Partners and Jerry Guo to us would be approximately \$3.9 million and \$1.6 million, respectively, prior to any reduction for direct offering expenses.

Transactions Involving Liberty Global Ventures Holding B.V. and its Affiliates

Liberty Global Ventures Holding B.V., one of our 5% stockholders, is affiliated with certain of our customers. In the years ended December 31, 2017, 2016 and 2015, sales to these customers accounted for \$39.4 million, \$31.7 million and \$46.1 million, respectively, of our revenue.

Consulting Agreement with Bill Styslinger

On March 5, 2012, we entered into a consulting agreement with Bill Styslinger, one of our directors, for the provision of sales management, corporate strategy and advisory services, which was initially scheduled to expire on January 31, 2014. We extended the term of the consulting agreement on two occasions, and the consulting agreement expired on December 31, 2016. We paid Mr. Styslinger \$459,478 and \$542,430 for his services in the years ended December 31, 2016 and 2015, respectively, under this consulting agreement. In addition, in May 2012, we granted to Mr. Styslinger an option to purchase 600,000 shares of common stock, at an exercise price of \$1.69 per share, which vested as to one-third (1/3) of the option shares on February 1, 2013 and as to the remainder in equal monthly installments over the following two years. The option had a grant-date fair value of \$526,837. Our board of directors declared special dividends in November 2017, May 2017, December 2016, June 2016 and

November 2014. In connection with these special dividends, our board of directors also approved cash payments to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments in accordance with the provisions of our equity incentive plans. In connection with the special dividend declared in November 2017, we paid Mr. Styslinger \$155,653 as an equitable adjustment in December 2017. In connection with the special dividend declared in May 2017, we paid Mr. Styslinger \$303,993 as an equitable adjustment in June 2017. In connection with the special dividend declared in December 2016, we paid Mr. Styslinger \$615,522 as an equitable adjustment in January 2017. In connection with the special dividends declared in June 2016 and November 2014, we paid Mr. Styslinger \$150,319 and \$11,954 as equitable adjustments in the years ended December 31, 2016 and 2015, respectively.

Employment of Rongke Xie

Rongke Xie, who serves as Deputy General Manager of Guangzhou Casa Communication Technology LTD, one of our subsidiaries, is the sister of Lucy Xie, our Senior Vice President of Operations and a member of our board of directors. We paid Rongke Xie \$159,609, \$139,660 and \$140,278 in total compensation in the years ended December 31, 2017, 2016 and 2015, respectively, for her services as an employee. In addition, in May 2006, we granted to Rongke Xie an option to purchase 100,000 shares of common stock, at an exercise price of \$0.10 per share, which vested as to one-fourth (1/4) of the option shares on May 22, 2007 and as to the remainder in equal monthly installments over the following three years. The option had a grant-date fair value of \$6,473. In connection with the special dividend declared in November 2014, we paid Ms. Xie \$18,746 as an equitable adjustment in the year ended December 31, 2015.

Indemnification Agreements

Our restated certificate of incorporation provides that we will indemnify our officers and directors to the fullest extent permitted by Delaware law. In addition, we have entered into indemnification agreements with each of our directors and executive officers. See “Limitation of Liability and Indemnification.”

Arrangements with Executive Officers

For a description of the compensation arrangements that we have with our named executive officers and directors, see “Executive Compensation”.

Policies and Procedures for Related Person Transactions

We have adopted written policies and procedures for the review of any transaction, arrangement or relationship in which our company is a participant, the amount involved exceeds \$120,000, and one of our executive officers, directors, director nominees or 5% stockholders (or their immediate family members), each of whom we refer to as a “related person,” has a direct or indirect material interest.

If a related person proposes to enter into such a transaction, arrangement or relationship, which we refer to as a “related person transaction,” the related person must report the proposed related person transaction. The policy calls for the proposed related person transaction to be reviewed and, if deemed appropriate, approved by the audit committee of our board of directors. Whenever practicable, the reporting, review and approval will occur prior to entry into the transaction. If advance review and approval is not practicable, the committee will review, and, in its discretion, may ratify the related person transaction. The policy also permits the chairman of the audit committee to review and, if deemed appropriate, approve proposed related person transactions that arise between audit committee meetings, subject to ratification by the audit committee at its next meeting. Any related person transactions that are ongoing in nature will be reviewed annually.

A related person transaction reviewed under the policy will be considered approved or ratified if it is authorized by the audit committee after full disclosure of the related person's interest in the transaction. As appropriate for the circumstances, the audit committee will review and consider:

- the related person's interest in the related person transaction;
- the approximate dollar value of the amount involved in the related person transaction;
- the approximate dollar value of the amount of the related person's interest in the transaction without regard to the amount of any profit or loss;
- whether the transaction was undertaken in the ordinary course of our business;
- whether the terms of the transaction are no less favorable to us than terms that could have been reached with an unrelated third party;
- the purpose of, and the potential benefits to us of, the transaction; and
- any other information regarding the related person transaction or the related person in the context of the proposed transaction that would be material to investors in light of the circumstances of the particular transaction.

The audit committee may approve or ratify the transaction only if it determines that, under all of the circumstances, the transaction is in or is not inconsistent with our company's best interests. The audit committee may impose any conditions on the related person transaction that it deems appropriate.

In addition to the transactions that are excluded by the instructions to the SEC's related person transaction disclosure rule, the policy will provide that the following transactions do not create a material direct or indirect interest on behalf of related persons and, therefore, are not related person transactions for purposes of this policy:

- interests arising only from the related person's position as a director of another corporation or organization that is a party to the transaction;
- interests arising only from the direct or indirect ownership by the related person and all other related persons in the aggregate of less than a 10% equity interest (other than a general partnership interest) in another entity which is a party to the transaction;
- interests arising from both the position and ownership level described above;
- interests arising solely from the related person's position as an executive officer of another entity (whether or not the person is also a director of such entity), that is a participant in the transaction, where (a) the related person and all other related persons own in the aggregate less than a 10% equity interest in such entity, (b) the related person and his or her immediate family members are not involved in the negotiation of the terms of the transaction and do not receive any special benefits as a result of the transaction and (c) the amount involved in the transaction equals less than the greater of \$200,000 or 5% of the annual gross revenues of the company receiving payment under the transaction;
- interests arising solely from the ownership of a class of our equity securities if all holders of that class of equity securities receive the same benefit on a pro rata basis;
- a transaction that involves compensation to an executive officer if the compensation has been approved, or recommended to our board of directors for approval, by the compensation committee of the board of directors or a group of independent directors of ours performing a similar function;
- a transaction that involves compensation to a director for services as one of our directors if such compensation will be reported pursuant to Item 402(k) of Regulation S-K;

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- a transaction that is specifically contemplated by provisions of our certificate of incorporation or bylaws;
- interests arising solely from indebtedness of a significant stockholder or an immediate family member of a significant stockholder of ours, as such terms are defined under the policy;
- a transaction where the rates or charges involved in the transaction are determined by competitive bids;
- a transaction that involves the rendering of services as a common or contract carrier or public utility at rates or charges fixed in conformity with law or governmental authority; and
- a transaction that involves services as a bank depository of funds, transfer agent, registrar, trustee under a trust indenture, or similar services.

The policy provides that transactions involving compensation of executive officers shall be reviewed and approved by the compensation committee in the manner specified in its charter.

PRINCIPAL AND SELLING STOCKHOLDERS

The following table sets forth information with respect to the beneficial ownership of our common stock, as of March 31, 2018, by:

- each person, or group of affiliated persons, known by us to beneficially own more than 5% of our common stock;
- each of our directors;
- each of our named executive officers;
- all of our executive officers and directors as a group; and
- each selling stockholder.

The percentages in the table below are based on a total of 81,800,741 shares of our common stock outstanding as of March 31, 2018, but not including any additional shares issuable upon exercise of outstanding options.

The number of shares beneficially owned by each stockholder is determined under rules of the SEC and includes voting or investment power with respect to securities. Under these rules, beneficial ownership includes any shares as to which the individual or entity has sole or shared voting power or investment power. In computing the number of shares beneficially owned by an individual or entity and the percentage ownership of that person, shares of common stock subject to options or other rights held by such person that are currently exercisable or will become exercisable within 60 days after March 31, 2018, are considered outstanding, although these shares are not considered outstanding for purposes of computing the percentage ownership of any other person. Unless otherwise indicated, the address of all listed stockholders is c/o Casa Systems, Inc., 100 Old River Road, Andover, Massachusetts 01810. Each of the stockholders listed has sole voting and investment power with respect to the shares beneficially owned by the stockholder unless noted otherwise, subject to community property laws where applicable. Beneficial ownership representing less than 1% is denoted with an asterisk (*).

Name of Beneficial Owner	Shares Beneficially Owned Prior to Offering		Number of Shares Offered	Shares Beneficially Owned After Offering		Additional Shares to be Sold if Underwriters' Option is Exercised in Full(1)	Shares Beneficially Owned After Offering if Underwriters' Option is Exercised in Full	
	Number	Percentage		Number	Percentage		Number	Percentage
5% Stockholders								
Entities affiliated with Summit Partners(2)	38,842,000	47.5%	4,257,230	34,584,770	42.3%	631,138	33,953,632	41.5%
Liberty Global Ventures Holding B.V.(3)	4,432,870	5.4%	460,290	3,972,580	4.9%	72,496	3,900,084	4.8%
Executive Officers and Directors								
Jerry Guo(4)	12,691,455	15.3%	1,402,905	11,288,550	13.6%	205,208	11,083,342	13.3%
Gary Hall(5)	600,000	*	62,301	537,699	*	9,812	527,887	*
Weidong Chen(6)	7,481,920	9.1%	776,291	6,705,629	8.1%	122,266	6,583,363	8.0%
Lucy Xie(7)	2,575,505	3.1%	266,381	2,309,124	2.8%	41,956	2,267,168	2.8%
Abraham Pucheril(8)	600,000	*	62,301	537,699	*	9,812	527,887	*
Bruce R. Evans(9)	38,842,000	47.5%	4,257,230	34,584,770	42.3%	631,138	33,953,632	41.5%
Daniel S. Mead(10)	—	*	—	—	*	—	—	*
Bill Styslinger(11)	600,000	*	62,301	537,699	*	9,812	527,887	*

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Name of Beneficial Owner	Shares Beneficially Owned Prior to Offering		Number of Shares Offered	Shares Beneficially Owned After Offering		Additional Shares to be Sold if Underwriters' Option is Exercised in Full(1)	Shares Beneficially Owned After Offering if Underwriters' Option is Exercised in Full	
	Number	Percentage*		Number	Percentage*		Number	Percentage*
Joseph S. Tibbetts, Jr.(12)	3,846	—	—	3,846	—	—	3,846	—
All executive officers and directors as a group (9 persons)(13)	63,394,726	74.1%	6,889,710	56,505,016	66.0%	1,030,004	55,475,012	64.8%
Other Selling Stockholders								
Dragonfly 2012 Irrevocable Trust(14)	4,000,000	4.9%	415,343	3,584,657	4.4%	65,417	3,519,240	4.3%

- (1) To the extent that the underwriters' option to purchase additional shares of common stock is not exercised in full, the shares to be sold by each selling stockholder pursuant to such option will be reduced proportionally.
- (2) Consists of 24,208,726 shares of common stock held by Summit Partners Private Equity Fund VII-A, L.P., 14,540,155 shares of common stock held by Summit Partners Private Equity Fund VII-B, L.P., 82,642 shares of common stock held by Summit Investors I, LLC and 10,477 shares of common stock held by Summit Investors I (UK), L.P. Summit Partners Private Equity Fund VII-A, L.P. expects to sell 2,653,368 shares in this offering (or 3,046,732 if the underwriters exercise in full their option to purchase additional shares); Summit Partners Private Equity Fund VIII-B, L.P. expects to sell 1,593,656 shares in this offering (or 1,829,917 if the underwriters exercise in full their option to purchase additional shares); Summit Investors I, LLC expects to sell 9,058 shares in this offering (or 10,401 if the underwriters exercise in full their option to purchase additional shares); and Summit Investors I (UK), L.P. expects to sell 1,148 shares in this offering (or 1,318 if the underwriters exercise in full their option to purchase additional shares). Summit Partners, L.P. is the managing member of Summit Partners PE VII, LLC, which is the general partner of Summit Partners PE VII, L.P., which is the general partner of each of Summit Partners Private Equity Fund VII-A, L.P. and Summit Partners Private Equity Fund VII-B, L.P. Summit Master Company, LLC is the managing member of Summit Investors Management, LLC, which is the manager of Summit Investors I, LLC, and the general partner of Summit Investors I (UK), L.P. Summit Master Company, LLC, as the managing member of Summit Investors Management, LLC, has delegated investment decisions, including voting and dispositive power, to Summit Partners, L.P. and its investment committee responsible for voting and investment decisions with respect to our company. Summit Partners, L.P., through a three-person investment committee responsible for voting and investment decisions with respect to our company, currently comprised of Peter Y. Chung, Bruce R. Evans and Martin J. Mannion, has voting and dispositive power over the shares held by each of these entities and therefore may be deemed to beneficially own such shares. Each of the Summit entities and persons mentioned in this footnote disclaims beneficial ownership of the shares, except for those shares held of record by such entity, and except to the extent of their pecuniary interest therein. The address of the entities and persons mentioned in this footnote is 222 Berkeley Street, 18th Floor, Boston, Massachusetts 02116. Summit Partners has agreed to disgorge to us realized profits, within the meaning of Section 16(b) of the Exchange Act, with respect to the sale of 250,000 shares of common stock in this offering as described under "Use of Proceeds."
- (3) Consists of shares of common stock held by Liberty Global Ventures Holding B.V. Liberty Global Ventures Holding B.V. has delegated investment decisions, including voting and dispositive power, to Liberty Global Europe Holding B.V. Liberty Global Europe Management B.V. may be deemed to have voting and dispositive control over Liberty Global Europe Holding B.V. Liberty Global Europe Management B.V., Liberty Global Europe Holding B.V. and Liberty Global Ventures Holding B.V. each disclaim beneficial ownership of such shares, except for those shares held of record by such entity, and except to the extent of its pecuniary interest therein. The address of Liberty Global Ventures Holding B.V. is Boeing Avenue 53, 1119PE Schiphol-Rijk, The Netherlands.

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- (4) Consists of (i) 11,303,860 shares of common stock held by Mr. Guo and (ii) options to purchase 1,387,595 shares of common stock that may be exercised within 60 days of March 31, 2018. Mr. Guo has agreed to disgorge to us realized profits, within the meaning of Section 16(b) of the Exchange Act, with respect to the sale of 100,000 shares of common stock in this offering as described under “Use of Proceeds.”
- (5) Consists of options to purchase 600,000 shares of common stock held by Mr. Hall that may be exercised within 60 days of March 31, 2018.
- (6) Consists of (i) 2,703,215 shares of common stock held by Mr. Chen, (ii) options to purchase 778,705 shares of common stock that may be exercised within 60 days of March 31, 2018 and (iii) 4,000,000 shares of common stock held by Dragonfly 2012 Irrevocable Trust, a family trust established for the children of Mr. Guo and Ms. Xie. Mr. Chen serves as trustee for Dragonfly 2012 Irrevocable Trust and has voting and dispositive control over the shares held by Dragonfly 2012 Irrevocable Trust. Mr. Chen and Dragonfly 2012 Irrevocable Trust each disclaim beneficial ownership of such shares, except for those shares held of record by such person or entity, and except to the extent of such person or entity’s pecuniary interest therein.
- (7) Consists of (i) 2,262,755 shares of common stock held by Ms. Xie and (ii) options to purchase 312,750 shares of common stock that may be exercised within 60 days of March 31, 2018.
- (8) Consists of (i) 218,220 shares of common stock held by Mr. Pucheril and (ii) options to purchase 381,780 shares of common stock held by Mr. Pucheril that may be exercised within 60 days of March 31, 2018.
- (9) Consists of the shares noted in note (2) above. Mr. Evans is Chairman of the Board and a Senior Advisor at Summit Partners, the general partner of the Summit-affiliated entities listed in note (2), and may be deemed the indirect beneficial owner of such shares.
- (10) Mr. Mead joined our board of directors on March 8, 2018.
- (11) Consists of (i) 300,000 shares of common stock held by Mr. Styslinger and (ii) an option to purchase 300,000 shares of common stock that may be exercised within 60 days of March 31, 2018.
- (12) Consists of (i) 1,923 shares of common stock held by Mr. Tibbetts and (ii) 1,923 shares of common stock issuable upon vesting of RSUs within 60 days of March 31, 2018.
- (13) Includes (i) 16,789,973 shares of common stock held by our current directors and executive officers, (ii) options to purchase 3,760,830 shares of common stock that may be exercised within 60 days of March 31, 2018 by our current directors and executive officers and (iii) 1,923 shares of common stock issuable upon vesting of RSUs within 60 days of March 31, 2018 by our current directors and executive officers.
- (14) Consists of 4,000,000 shares of common stock held by Dragonfly 2012 Irrevocable Trust, a family trust established for the children of Mr. Guo and Ms. Xie. Mr. Chen serves as trustee for Dragonfly 2012 Irrevocable Trust and has voting and dispositive control over the shares held by Dragonfly 2012 Irrevocable Trust. Mr. Chen and Dragonfly 2012 Irrevocable Trust each disclaim beneficial ownership of such shares, except for those shares held of record by such person or entity, and except to the extent of such person or entity’s pecuniary interest therein.

DESCRIPTION OF CAPITAL STOCK

General

Our authorized capital stock consists of 500,000,000 shares of common stock, par value \$0.001 per share, and 5,000,000 shares of preferred stock, par value \$0.001 per share. The following description of our capital stock and provisions of our restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the restated certificate of incorporation and amended and restated bylaws. Copies of these documents have been filed with the SEC as exhibits to our Current Report on Form 8-K filed with the SEC on December 19, 2017.

As of March 31, 2018, there were 81,800,741 shares of our common stock outstanding, held by 79 stockholders of record.

Common Stock

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. An election of directors by our stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. Holders of common stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of any series of preferred stock that we may designate and issue in the future.

In the event of our liquidation or dissolution, the holders of common stock are entitled to receive proportionately our net assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock. Holders of common stock have no preemptive, subscription, redemption or conversion rights. Our outstanding shares of common stock are validly issued, fully paid and nonassessable. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Preferred Stock

Under the terms of our restated certificate of incorporation, our board of directors is authorized to direct us to issue shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a majority of our outstanding voting stock. There are no shares of preferred stock outstanding, and we have no present plans to issue any shares of preferred stock.

Stock Options

As of March 31, 2018, options to purchase 145,830 shares of our common stock were outstanding under our 2003 Stock Incentive Plan at a weighted-average exercise price of \$0.25 per share, of which 145,830 shares were

vested and exercisable as of that date. As of March 31, 2018, options to purchase 14,502,800 shares of our common stock were outstanding under our 2011 Stock Incentive Plan at a weighted-average exercise price of \$4.26 per share, of which 11,721,890 shares were vested and exercisable. As of March 31, 2018, options to purchase 1,067,376 shares of our common stock were outstanding under our 2017 Stock Incentive Plan at a weighted-average exercise price of \$17.89 per share, of which no shares were vested and exercisable.

RSUs

As of March 31, 2018, 371,885 shares of our common stock were issuable upon the vesting of RSUs outstanding under our 2011 Stock Incentive Plan and 135,723 shares of our common stock were issuable upon the vesting of RSUs outstanding under our 2017 Stock Incentive Plan.

Registration Rights

Demand Registration Rights

Pursuant to our registration rights agreement, subject to effective lock-up agreements, the holders of at least 20% of the shares having rights under this agreement, which we refer to as registrable securities, can demand that we file up to four registration statements on Form S-1 registering all or a portion of their registrable securities, provided that the aggregate offering price is expected to be at least \$5 million. As of March 31, 2018, the holders of 43,274,870 shares of our common stock held demand registration rights. Under specified circumstances, we also have the right to defer filing of a requested registration statement for a period of not more than 60 days, which right may not be exercised more than once during any 12-month period. These registration rights are subject to additional conditions and limitations, including the right of the underwriters to limit the number of shares included in any such registration under certain circumstances.

Form S-3 Registration Rights

Pursuant to the registration rights agreement, if we are eligible to file a registration statement on Form S-3, the holders of at least 20% of our registrable securities have the right to demand that we file additional registration statements, including a shelf registration statement, for such holders on Form S-3, if the aggregate anticipated offering price is at least \$5 million. These holders can demand up to two such registrations in any 12-month period.

Piggyback Registration Rights and Incidental Registrations

Pursuant to the registration rights agreement, if we propose to file a registration statement under the Securities Act, other than with respect to a registration related to employee benefit or similar plans, a registration on any form which does not include substantially the same information as would be required to be included in this registration statement, or a registration in which the only common stock being registered is common stock issuable upon conversion of debt securities which are also being registered, the holders of registrable securities are entitled to receive notice of the registration and to include their registrable securities in such registration. As of March 31, 2018, the holders of 43,274,870 shares of our common stock were entitled to notice of this registration and to include their registrable securities in such a registration statement. Such rights have been waived in connection with this offering in accordance with the registration rights agreement. The underwriters of any underwritten offering will have the right to limit the number of registrable securities that may be included in the registration statement.

Expenses of Registration

We are required to pay all expenses relating to any demand, Form S-3 or piggyback registration, other than underwriting discounts and commissions, subject to certain limited exceptions. We will not pay for any expenses

of any demand registration if the request is subsequently withdrawn by the holders of a majority of the shares requested to be included in such a registration statement, subject to limited exceptions.

Anti-Takeover Provisions

We are subject to Section 203 of the Delaware General Corporation Law. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a “business combination” with any “interested stockholder” for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or unless the business combination is approved in a prescribed manner. A “business combination” includes, among other things, a merger or consolidation involving us and the “interested stockholder” and the sale of more than 10% of our assets. In general, an “interested stockholder” is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person.

Staggered Board; Removal of Directors

Our restated certificate of incorporation and our amended and restated bylaws divide our board of directors into three classes with staggered three-year terms. In addition, a director may be removed only for cause and only by the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in an annual election of directors. Any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office.

The classification of our board of directors and the limitations on the removal of directors and filling of vacancies could make it more difficult for a third party to acquire, or discourage a third party from seeking to acquire, control of our company.

Supermajority Voting

The Delaware General Corporation Law provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation’s certificate of incorporation or bylaws, unless a corporation’s certificate of incorporation or bylaws, as the case may be, requires a greater percentage. Our amended and restated bylaws may be amended or repealed by a majority vote of our board of directors or the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in an annual election of directors. In addition, the affirmative vote of the holders of at least 75% of the votes which all our stockholders would be entitled to cast in an election of directors is required to amend, repeal, or adopt any provisions inconsistent with, any of the provisions of our restated certificate of incorporation described in the prior two paragraphs.

Stockholder Action; Special Meeting of Stockholders; Advance Notice Requirements for Stockholder Proposals and Director Nominations

Our restated certificate of incorporation provides that any action required or permitted to be taken by our stockholders must be effected at a duly called annual or special meeting of such stockholders and may not be effected by any consent in writing by such stockholders. Our restated certificate of incorporation and our amended and restated bylaws also provide that, except as otherwise required by law, special meetings of our stockholders can only be called by our board of directors. In addition, our amended and restated bylaws establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of stockholders, including proposed nominations of candidates for election to our board of directors. Stockholders at an annual meeting may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors, or by a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has delivered timely written notice in proper form to our

secretary of the stockholder's intention to bring such business before the meeting. These provisions could have the effect of delaying until the next stockholder meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities. These provisions also could discourage a third party from making a tender offer for our common stock, because even if it acquired a majority of our outstanding voting stock, it would be able to take action as a stockholder, such as electing new directors or approving a merger, only at a duly called stockholders meeting and not by written consent.

Authorized But Unissued Shares

The authorized but unissued shares of common stock and preferred stock are available for future issuance without stockholder approval, subject to any limitations imposed by the Nasdaq listing rules. These additional shares may be used for a variety of corporate finance transactions, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could make more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Choice of Forum

Our restated certificate of incorporation provides that unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall, to the fullest extent permitted by law, be the sole and exclusive forum for (1) any derivative action or proceeding brought on behalf of our company, (2) any action asserting a claim of breach of fiduciary duty owed by any director, officer or other employee or stockholder of our company to us or our stockholders, (3) any action asserting a claim arising pursuant to any provision of the General Corporation Law or as to which the General Corporation Law of the State of Delaware confers jurisdiction on the Court of Chancery or (4) any action asserting a claim governed by the internal affairs doctrine. Our restated certificate of incorporation further provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company.

Nasdaq Global Select Market

Our common stock is listed on the Nasdaq Global Select Market under the symbol "CASA."

SHARES ELIGIBLE FOR FUTURE SALE

Future sales of substantial amounts of common stock in the public market, or the perception that such sales may occur, could adversely affect the market price of our common stock. Our common stock is listed on the Nasdaq Global Select Market under the symbol “CASA.”

As of March 31, 2018, we had outstanding an aggregate of 81,800,741 shares of common stock. Of these shares, the 7,350,000 shares to be sold by the selling stockholders (assuming that the underwriters do not exercise their option to purchase additional shares of common stock from the selling stockholders) in this offering; the 6,900,000 shares sold by us in our initial public offering, of which 350,000 shares are included among the shares to be sold in this offering; and the 785,766 shares issued by us upon the exercise of stock options and vesting of restricted stock units following our registration of such shares on a registration statement on Form S-8 on December 15, 2017 will be freely tradable without restriction or further registration under the Securities Act following this offering, subject to the lock-up agreements described below and except for any shares purchased by our “affiliates,” as that term is defined in Rule 144 under the Securities Act, whose sales would be subject to the Rule 144 resale restrictions described below, other than the holding period requirement.

The remaining 67,114,975 shares of common stock outstanding as of March 31, 2018 are “restricted securities,” as that term is defined in Rule 144 under the Securities Act. These restricted securities are eligible for public sale only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rules 144 or 701 under the Securities Act, which are summarized below.

In addition, of the 15,716,006 shares of our common stock that were subject to stock options outstanding as of March 31, 2018, options to purchase 11,867,720 shares of common stock were vested as of March 31, 2018 and, upon exercise, these shares will be eligible for sale subject to the lock-up agreements and securities laws described below.

Lock-Up Agreements

In connection with our initial public offering, we and each of our directors and executive officers and holders of substantially all of our capital stock and stock options agreed that, without the prior written consent of Morgan Stanley & Co. LLC, we and they will not, subject to limited exceptions, during the period ending on June 12, 2018:

- offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any other securities so owned convertible into or exercisable or exchangeable for shares of our common stock; or
- enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of our common stock.

The restrictions under these agreements do not apply to certain specified types of transactions, including the following, subject in certain cases to specified limitations:

- transactions relating to shares of our common stock acquired in open market transactions after the completion of our initial public offering;
- transfers as bona fide gifts;
- transfers to a trust, or other entity formed for estate planning purposes;

- transfers to a corporation, partnership, limited liability company, trust or other business entity that controls, is controlled by or is under common control with the transferor, or distributions to partners, limited liability company members or stockholders of the transferor;
- transfers by will or intestate succession upon death;
- transfers in connection with the “net” or “cashless” exercise or settlement of equity awards;
- transfers in connection with our repurchase of shares of our common stock issued pursuant to an employee benefit plan disclosed in the prospectus for our initial public offering or pursuant to the agreements pursuant to which such shares were issued as disclosed in that prospectus;
- the establishment of a trading plan pursuant to Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, for the transfer of shares of our common stock;
- transfers pursuant to qualified domestic orders or in connection with divorce settlements;
- transfers pursuant to a bona fide third-party tender offer, merger, consolidation or other similar transaction involving a change of control approved by our board of directors; or
- the entry into an agreement providing for the issuance by us of shares of our common stock or any security convertible into or exercisable for shares of our common stock in connection with the acquisition by us of the securities, business, property or other assets of another person or entity or pursuant to an employee benefit plan assumed by us in connection with such acquisition, and the issuance of any such securities pursuant to any such agreement; provided, that the aggregate number of shares of our common stock that we may sell or issue shall not exceed 10% of the total number of shares of our common stock issued and outstanding on the date immediately following the completion of our initial public offering (as well as any issuance and sale of our common stock pursuant to any option exercised by the underwriters for our initial public offering); and provided further, that each recipient of shares enters into a lock-up agreement in the form entered into by the transferor or the shares.

Upon the expiration of the lock-up period, substantially all of the shares subject to such lock-up restrictions will become eligible for sale, subject to the limitations discussed below.

In connection with this offering, Morgan Stanley & Co. LLC, on behalf of the underwriters for our initial public offering, has agreed to release the restrictions under the lock-up agreements that were executed in connection with our initial public offering with respect to:

- (i) up to the 8,452,500 shares of our common stock offered hereunder (including the underwriters’ option to purchase additional shares) that are held by the selling stockholders in this offering, which includes shares beneficially owned by our directors and executive officers or entities with which they are affiliated; and
- (ii) up to an aggregate of 2,343,071 shares of our common stock currently outstanding or issuable upon exercise of currently outstanding vested options held by existing stockholders and optionholders that are party to the initial public offering lock-up agreements but are not participating in this offering, of which 1,664,657 shares of our common stock were outstanding as of March 31, 2018;

provided, however, that the release of shares of our common stock held by the selling stockholders is limited to the shares actually sold in this offering. The total number of shares released for the stockholders and optionholders not participating in this offering represents the same percentage of the aggregate number of shares and vested options held by such persons as the number of shares being released for the selling stockholders participating in this offering represents of their aggregate holdings.

In addition to the existing lock-up agreements from the initial public offering, in connection with this offering, we, the selling stockholders and all of our directors and officers have also entered into new lock-up

agreements on substantially similar terms effective for 90 days following the date of this prospectus. Upon completion of this offering, based on the number of shares outstanding on March 31, 2018, 65,129,989 shares of our common stock, or 79.6% of our outstanding shares will be restricted from sale as a result of securities laws or lock-up agreements through June 12, 2018 and 55,612,343 shares of our common stock, or 68.0% of our outstanding shares will be restricted from sale as a result of securities laws or lock-up agreements through the date that is 90 days following the date of this prospectus.

Rule 144

Affiliate Resales of Restricted Securities

In general, a person who is an affiliate of ours, or who was an affiliate at any time during the 90 days before a sale, who has beneficially owned shares of our common stock for at least six months would be entitled to sell in “broker’s transactions” or certain “riskless principal transactions” or to market makers, a number of shares within any three-month period that does not exceed the greater of:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately 818,007 shares immediately after this offering; or
- the average weekly trading volume in our common stock on the Nasdaq Global Select Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Affiliate resales under Rule 144 are also subject to the availability of current public information about us. In addition, if the number of shares being sold under Rule 144 by an affiliate during any three-month period exceeds 5,000 shares or has an aggregate sale price in excess of \$50,000, the seller must file a notice on Form 144 with the SEC and the Nasdaq Global Select Market concurrently with either the placing of a sale order with the broker or the execution directly with a market maker.

Non-Affiliate Resales of Restricted Securities

In general, a person who is not an affiliate of ours at the time of sale, and has not been an affiliate at any time during the three months preceding a sale, and who has beneficially owned shares of our common stock for at least six months but less than a year, is entitled to sell such shares subject only to the availability of current public information about us. If such person has held our shares for at least one year, such person can resell under Rule 144(b)(1) without regard to any Rule 144 restrictions, including the 90-day public company requirement and the current public information requirement.

Non-affiliate resales are not subject to the manner of sale, volume limitation or notice filing provisions of Rule 144.

Rule 701

In general, under Rule 701, any of an issuer’s employees, directors, officers, consultants or advisors who purchases shares from the issuer in connection with a compensatory stock or option plan or other written agreement before the effective date of a registration statement under the Securities Act is entitled to sell such shares 90 days after such effective date in reliance on Rule 144. An affiliate of the issuer can resell shares in reliance on Rule 144 without having to comply with the holding period requirement, and non-affiliates of the issuer can resell shares in reliance on Rule 144 without having to comply with the current public information and holding period requirements.

The SEC has indicated that Rule 701 will apply to typical stock options granted by an issuer before it becomes subject to the reporting requirements of the Exchange Act, along with the shares acquired upon exercise of such options, including exercises after an issuer becomes subject to the reporting requirements of the Exchange Act.

Equity Plans

We have filed a registration statement on Form S-8 under the Securities Act to register all shares of common stock issued or issuable under our 2003 Stock Incentive Plan, 2011 Stock Incentive Plan and 2017 Stock Incentive Plan, permitting the resale of such shares by non-affiliates in the public market without restriction under the Securities Act and the sale by affiliates in the public market, subject to compliance with the resale provisions of Rule 144.

Registration Rights

As of March 31, 2018, the holders of 43,274,870 shares of common stock were entitled to various rights with respect to the registration of these shares under the Securities Act. Registration of these shares under the Securities Act would result in these shares becoming fully tradable without restriction under the Securities Act immediately upon the effectiveness of the registration, except for shares purchased by affiliates. See “Description of Capital Stock—Registration Rights” for additional information. Shares covered by a registration statement will be eligible for sale in the public market upon the expiration or release from the terms of any applicable lock-up agreement.

MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS FOR NON-U.S. HOLDERS OF COMMON STOCK

The following is a discussion of material U.S. federal income and estate tax considerations relating to ownership and disposition of our common stock by a non-U.S. holder. For purposes of this discussion, the term “non-U.S. holder” means a beneficial owner (other than a partnership or other pass-through entity) of our common stock that is not, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation, or other entity treated as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States or of any political subdivision of the United States;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust if (1) a U.S. court is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have authority to control all substantial decisions of the trust or (2) the trust has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

This discussion does not address the tax treatment of partnerships or other entities that are pass-through entities for U.S. federal income tax purposes or persons who hold their common stock through partnerships or other pass-through entities. A partner in a partnership or other pass-through entity that will hold our common stock should consult his, her or its own tax advisor regarding the tax consequences of the ownership and disposition of our common stock through a partnership or other pass-through entity, as applicable.

This discussion is based on current provisions of the Internal Revenue Code of 1986, as amended, or the Code, existing and proposed U.S. Treasury Regulations promulgated thereunder, current administrative rulings and judicial decisions, all as in effect as of the date of this prospectus and all of which are subject to change or to differing interpretation, possibly with retroactive effect. Any change could alter the tax consequences to non-U.S. holders described in this prospectus. There can be no assurance that the Internal Revenue Service, or the IRS, will not challenge one or more of the tax consequences described in this prospectus.

We assume in this discussion that each non-U.S. holder holds shares of our common stock as a capital asset (generally, property held for investment) for U.S. federal income tax purposes. This discussion does not address all aspects of U.S. federal income and estate taxation that may be relevant to a particular non-U.S. holder in light of that non-U.S. holder’s individual circumstances nor does it address any aspects of U.S. state, local or non-U.S. taxes, the alternative minimum tax, or the Medicare tax on net investment income. This discussion also does not consider any specific facts or circumstances that may apply to a non-U.S. holder and does not address the special tax rules applicable to particular non-U.S. holders, such as:

- financial institutions;
- brokers or dealers in securities;
- tax-exempt organizations;
- pension plans;
- owners that hold our common stock as part of a straddle, hedge, conversion transaction, synthetic security or other integrated investment or who have elected to mark securities to market;
- insurance companies;
- controlled foreign corporations;

- passive foreign investment companies;
- non-U.S. governments; and
- certain U.S. expatriates.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT, AND IS NOT INTENDED TO BE, LEGAL OR TAX ADVICE. PROSPECTIVE INVESTORS SHOULD CONSULT THEIR OWN TAX ADVISORS REGARDING THE U.S. FEDERAL, STATE, LOCAL AND NON-U.S. INCOME, ESTATE AND OTHER TAX CONSIDERATIONS OF ACQUIRING, HOLDING AND DISPOSING OF OUR COMMON STOCK.

Distributions

If we make distributions in respect of our common stock, those distributions generally will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles, subject to the tax treatment described in this section. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder's investment, up to the holder's tax basis in the common stock. Any remaining excess will be treated as capital gain, subject to the tax treatment described below under the heading "Gain on Sale, Exchange or Other Taxable Disposition of Our Common Stock." Any such distributions will also be subject to the discussions below under the headings "Information Reporting and Backup Withholding" and "FATCA."

Dividends paid to a non-U.S. holder generally will be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States, and, if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements (generally including provision of a valid IRS Form W-8ECI (or applicable successor form) certifying that the dividends are effectively connected with the non-U.S. holder's conduct of a trade or business within the United States). However, such U.S. effectively connected income, net of specified deductions and credits, is taxed in the hands of the non-U.S. holder at the same graduated U.S. federal income tax rates as would apply if such holder were a U.S. person (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is classified as a corporation for U.S. federal income tax purposes may also, under certain circumstances, be subject to an additional "branch profits tax" at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder's country of residence.

A non-U.S. holder of our common stock who claims the benefit of an applicable income tax treaty between the United States and such holder's country of residence generally will be required to provide a properly executed IRS Form W-8BEN or W-8BEN-E (or successor form) and satisfy applicable certification and other requirements. Non-U.S. holders are urged to consult their own tax advisors regarding their entitlement to benefits under a relevant income tax treaty and the specific methods available to them to satisfy these requirements.

A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may obtain a refund or credit of any excess amounts withheld by timely filing an appropriate claim for a refund with the IRS.

Gain on Sale, Exchange or Other Taxable Disposition of Our Common Stock

Subject to the discussions below under the headings “Information Reporting and Backup Withholding” and “FATCA,” a non-U.S. holder generally will not be subject to U.S. federal income tax on any gain realized upon such non-U.S. holder’s sale, exchange or other disposition of our common stock unless:

- the gain is effectively connected with the non-U.S. holder’s conduct of a trade or business in the United States, and, if an applicable income tax treaty so provides, the gain is attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States; in these cases, the non-U.S. holder generally will be taxed on a net income basis at the graduated U.S. federal income tax rates applicable to U.S. persons, and, if the non-U.S. holder is a foreign corporation, the branch profits tax described above under the heading “Distributions” may also apply;
- the non-U.S. holder is a non-resident alien present in the United States for 183 days or more in the taxable year of the disposition and certain other requirements are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder’s country of residence) on the net gain derived from the disposition, which may be offset by certain U.S.-source capital losses of the non-U.S. holder, if any; or
- we are or have been, at any time during the five-year period preceding such disposition (or the non-U.S. holder’s holding period, if shorter) a “U.S. real property holding corporation” unless our common stock is regularly traded on an established securities market and the non-U.S. holder held no more than 5% of our outstanding common stock, directly or indirectly, during the shorter of the five-year period ending on the date of the disposition or the period that the non-U.S. holder held our common stock. Generally, a corporation is a “U.S. real property holding corporation” if the fair market value of its “U.S. real property interests” (as defined in the Code and applicable regulations) equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we believe that we are not currently, and we do not anticipate becoming, a “U.S. real property holding corporation” for U.S. federal income tax purposes. If we are a U.S. real property holding corporation and either our common stock is not regularly traded on an established securities market or a non-U.S. holder holds more than 5% of our outstanding common stock, directly or indirectly, during the applicable testing period, such non-U.S. holder’s gain on the disposition of shares of our common stock generally will be taxed in the same manner as gain that is effectively connected with the conduct of a U.S. trade or business, except that the branch profits tax generally will not apply.

U.S. Federal Estate Tax

Shares of our common stock that are owned or treated as owned by an individual who is not a citizen or resident of the United States (as specially defined for U.S. federal estate tax purposes) at the time of death are considered U.S. situs assets and will be included in the individual’s gross estate for U.S. federal estate tax purposes. Such shares, therefore, may be subject to U.S. federal estate tax, unless an applicable estate tax or other treaty provides otherwise.

Information Reporting and Backup Withholding

We must report annually to the IRS and to each non-U.S. holder the gross amount of the distributions on our common stock paid to such holder and the tax withheld, if any, with respect to such distributions. Non-U.S. holders generally will have to comply with specific certification procedures to establish that the holder is not a U.S. person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to

dividends on our common stock. Generally, a holder will comply with such procedures if it provides a properly executed IRS Form W-8BEN or W-8BEN-E (or other applicable Form W-8), or otherwise meets documentary evidence requirements for establishing that it is a non-U.S. holder, or otherwise establishes an exemption. Dividends paid to non-U.S. holders subject to withholding of U.S. federal income tax, as described above under “Distributions,” will generally be exempt from U.S. backup withholding.

Information reporting and backup withholding generally will apply to the proceeds of a disposition of our common stock by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or non-U.S., unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker. Non-U.S. holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules to them.

Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder can be refunded or credited against the non-U.S. holder’s U.S. federal income tax liability, if any, provided that an appropriate claim is timely filed with the IRS.

FATCA

Provisions of the Code commonly known as the Foreign Account Tax Compliance Act, or FATCA, generally impose a 30% withholding tax on dividends on, and gross proceeds from the sale or disposition of, our common stock if paid to a foreign entity unless (1) if the foreign entity is a “foreign financial institution,” the foreign entity undertakes certain due diligence, reporting, withholding, and certification obligations, (2) if the foreign entity is not a “foreign financial institution,” the foreign entity identifies certain of its U.S. investors, or (iii) the foreign entity is otherwise exempt under FATCA.

Withholding under FATCA generally (1) applies to payments of dividends on our common stock, and (2) will apply to payments of gross proceeds from a sale or other disposition of our common stock made after December 31, 2018. An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this section. Under certain circumstances, a non-U.S. holder may be eligible for refunds or credits of the tax. Non-U.S. holders should consult their own tax advisors regarding the possible implications of FATCA on their investment in our common stock.

THE PRECEDING DISCUSSION OF MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT LEGAL OR TAX ADVICE. PROSPECTIVE INVESTORS SHOULD CONSULT THEIR OWN TAX ADVISORS REGARDING THE PARTICULAR U.S. FEDERAL, STATE, LOCAL AND NON-U.S. TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGES IN APPLICABLE LAWS.

UNDERWRITERS

Under the terms and subject to the conditions in an underwriting agreement dated the date of this prospectus, the underwriters named below, for whom Morgan Stanley & Co. LLC and Barclays Capital Inc. are acting as representatives, have severally agreed to purchase, and the selling stockholders have agreed to sell to them, severally, the number of shares indicated below:

<u>Name</u>	<u>Number of Shares</u>
Morgan Stanley & Co. LLC	
Barclays Capital Inc.	
Raymond James & Associates, Inc.	
Stifel, Nicolaus & Company, Incorporated	
Macquarie Capital (USA) Inc.	
Northland Securities, Inc.	
William Blair & Company, L.L.C.	
Total	<u>7,350,000</u>

The underwriters and the representatives are collectively referred to as the “underwriters” and the “representatives,” respectively. The underwriters are offering the shares of common stock subject to their acceptance of the shares from the selling stockholders and subject to prior sale. The underwriting agreement provides that the obligations of the several underwriters to pay for and accept delivery of the shares of common stock offered by this prospectus are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriters are obligated to take and pay for all of the shares of common stock offered by this prospectus if any such shares are taken. However, the underwriters are not required to take or pay for the shares covered by the underwriters’ option to purchase additional shares described below. The underwriting agreement also provides that if an underwriter defaults, the purchase commitment of non-defaulting underwriters may be increased or the offering terminated.

The underwriters initially propose to offer part of the shares of common stock directly to the public at the offering price listed on the cover page of this prospectus and part to certain dealers. After the initial offering of the shares of common stock, the offering price and other selling terms may from time to time be varied by the representatives.

The selling stockholders have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase up to 1,102,500 additional shares of common stock at the public offering price listed on the cover page of this prospectus, less underwriting discounts and commissions. To the extent the option is exercised, each underwriter will become obligated, subject to certain conditions, to purchase about the same percentage of the additional shares of common stock as the number listed next to the underwriter’s name in the preceding table bears to the total number of shares of common stock listed next to the names of all underwriters in the preceding table.

The following table shows the per share and total public offering price, underwriting discounts and commissions, and proceeds before expenses to the selling stockholders. These amounts are shown assuming both no exercise and full exercise of the underwriters’ option to purchase up to an additional 1,102,500 shares of common stock from the selling stockholders.

	<u>Per Share</u>	<u>Total</u>	
		<u>No Exercise</u>	<u>Full Exercise</u>
Public offering price	\$	\$	\$
Underwriting discounts and commissions to be paid by selling stockholders	\$	\$	\$
Proceeds, before expenses, to selling stockholders	\$	\$	\$

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We will bear the costs, fees and expenses incurred in effecting the registration of the shares covered by this prospectus, including all registration and filing fees and fees and expenses of our counsel and our accountants. The estimated offering expenses payable by us are approximately \$0.8 million. We have agreed to reimburse the underwriters for expenses relating to clearance of this offering with the Financial Industry Regulatory Authority up to \$30,000.

The selling stockholders will pay any underwriting discounts and commissions and any other costs, fees and expenses incurred by them in connection with this offering, other than the fees and expenses of one counsel for the selling stockholders, which will be paid by us.

The underwriters have informed us that they do not intend sales to discretionary accounts to exceed 5% of the total number of shares of common stock offered by them.

Our common stock is listed on the Nasdaq Global Select Market under the symbol "CASA".

We, the selling stockholders and all of our directors and officers have agreed that, without the prior written consent of Morgan Stanley & Co. LLC on behalf of the underwriters, we and they will not, during the period ending 90 days after the date of this prospectus, which we refer to as the restricted period:

- offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any other securities so owned convertible into or exercisable or exchangeable for our common stock;
- enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of our common stock; or
- file any registration statement with the Securities and Exchange Commission relating to the offering of any shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock

whether any such transaction described above is to be settled by delivery of common stock or such other securities, in cash or otherwise. In addition, we and each such person agrees that, without the prior written consent of Morgan Stanley & Co. LLC on behalf of the underwriters, we or such other person will not, during the restricted period, make any demand for, or exercise any right with respect to, the registration of any shares of common stock or any security convertible into or exercisable or exchangeable for common stock.

The restrictions described in the immediately preceding paragraph do not apply to certain specified types of transactions, including the following, subject in certain cases to specified limitations:

- the sale of shares in this offering;
- transactions relating to shares of our common stock acquired in open market transactions after the completion of this offering;
- transfers as bona fide gifts;
- transfers to a trust, or other entity formed for estate planning purposes;
- transfers to a corporation, partnership, limited liability company, trust or other business entity that controls, is controlled by or is under common control with the transferor, or distributions to partners, limited liability company members or stockholders of the transferor;
- transfers by will or intestate succession upon death;
- transfers in connection with the "net" or "cashless" exercise or settlement of equity awards;
- transfers in connection with our repurchase of shares of our common stock issued pursuant to an employee benefit plan disclosed in this prospectus or pursuant to the agreements pursuant to which

such shares were issued as disclosed in this prospectus;

- the filing by us of a registration statement on Form S-8 or a successor form thereto pursuant to an employee benefit plan disclosed in this prospectus;
- the establishment or amendment of a trading plan pursuant to Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, or the Exchange Act, for the transfer of shares of our common stock, provided that (i) such plan does not provide for the transfer of common stock during the period ending 90 days after the date of this prospectus and (ii) to the extent a public announcement or filing under the Exchange Act, if any, is required of or voluntarily made by or on behalf of the selling stockholder or us regarding the establishment or amendment of such plan, such announcement or filing shall include a statement to the effect that no transfer of common stock may be made under such plan during the period ending 90 days after the date of this prospectus;
- transfers pursuant to qualified domestic orders or in connection with divorce settlements;
- transfers pursuant to a bona fide third-party tender offer, merger, consolidation or other similar transaction involving a change of control approved by our board of directors; or
- the entry into an agreement providing for the issuance by us of shares of our common stock or any security convertible into or exercisable for shares of our common stock in connection with the acquisition by us of the securities, business, property or other assets of another person or entity or pursuant to an employee benefit plan assumed by us in connection with such acquisition, and the issuance of any such securities pursuant to any such agreement; provided, that the aggregate number of shares of our common stock that we may sell or issue shall not exceed 10% of the total number of shares of our common stock issued and outstanding on the date immediately following the completion of this offering (as well as any issuance and sale of our common stock pursuant to any option exercised by the underwriters); and provided further, that each recipient of shares enters into a lock-up agreement in the form described herein.

Morgan Stanley & Co. LLC, in its sole discretion, may release the common stock and other securities subject to the lock-up agreements described above in whole or in part at any time.

In order to facilitate the offering of the common stock, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the common stock. Specifically, the underwriters may sell more shares than they are obligated to purchase under the underwriting agreement, creating a short position. A short sale is covered if the short position is no greater than the number of shares available for purchase by the underwriters under the option. The underwriters can close out a covered short sale by exercising the option or purchasing shares in the open market. In determining the source of shares to close out a covered short sale, the underwriters will consider, among other things, the open market price of shares compared to the price available under the option. The underwriters may also sell shares in excess of the option, creating a naked short position. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in this offering. As an additional means of facilitating this offering, the underwriters may bid for, and purchase, shares of common stock in the open market to stabilize the price of the common stock. These activities may raise or maintain the market price of the common stock above independent market levels or prevent or retard a decline in the market price of the common stock. The underwriters are not required to engage in these activities and may end any of these activities at any time.

We, the selling stockholders and the underwriters have agreed to indemnify each other against certain liabilities, including liabilities under the Securities Act.

A prospectus in electronic format may be made available on websites maintained by one or more underwriters, or selling group members, if any, participating in this offering. The representatives may agree to allocate a number of shares of common stock to underwriters for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters that may make Internet distributions on the same basis as other allocations.

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Certain of the underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for us, for which they received or will receive customary fees and expenses. In addition, affiliates of Barclays Capital Inc. serve as agents, arrangers and lenders under our term loan facility.

In addition, in the ordinary course of their various business activities, the underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve our securities and instruments. The underwriters and their respective affiliates may also make investment recommendations or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long or short positions in such securities and instruments.

Selling Restrictions

Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a "Relevant Member State"), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State, no offer of shares may be made to the public in that Relevant Member State other than:

A. to any legal entity which is a qualified investor as defined in the Prospectus Directive;

B. to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), subject to obtaining the prior consent of the underwriters; or

C. in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of shares shall require our company or any underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive and each person who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed to and with each of the underwriters and our company that it is a “qualified investor” within the meaning of the law in that Relevant Member State implementing Article 2(1)(e) of the Prospectus Directive.

In the case of any shares being offered to a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the representatives has been obtained to each such proposed offer or resale.

For the purposes of this provision, the expression an “offer of shares to the public” in relation to any shares in any Relevant Member State means the communication in any form and by means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase shares, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression “Prospectus Directive” means Directive 2003/71/EC (as amended, including by Directive 2010/73/EU), and includes any relevant implementing measure in the Relevant Member State.

United Kingdom

In the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are “qualified investors” (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the “Order”) and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as “relevant persons”) or otherwise in circumstances which have not resulted and will not result in an offer to the public of the shares in the United Kingdom within the meaning of the Financial Services and Markets Act 2000.

Any person in the United Kingdom that is not a relevant person should not act or rely on the information included in this document or use it as basis for taking any action. In the United Kingdom, any investment or investment activity that this document relates to may be made or taken exclusively by relevant persons.

Hong Kong

Shares of our common stock may not be offered or sold by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), or (ii) to “professional investors” within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a “prospectus” within the meaning of the Companies Ordinance (Cap.32, Laws of Hong Kong), and no advertisement, invitation or document relating to shares of our common

stock may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares of our common stock which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” within the meaning of the Securities and Futures Ordinance (Cap.571, Laws of Hong Kong) and any rules made thereunder.

Japan

Shares of our common stock have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (the Financial and Exchange Law) and each underwriter has agreed that it will not offer or sell any shares of our common stock, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of shares of our common stock may not be circulated or distributed, nor may the shares of our common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the “SFA”), (ii) to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where shares of our common stock are subscribed or purchased under Section 275 by a relevant person which is: (a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries’ rights and interest in that trust shall not be transferable for 6 months after that corporation or that trust has acquired shares of our common stock under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions, specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Wilmer Cutler Pickering Hale and Dorr LLP, Boston, Massachusetts. Wilson Sonsini Goodrich & Rosati, Professional Corporation, Boston, Massachusetts, has acted as counsel for the underwriters in connection with certain legal matters related to this offering.

EXPERTS

The financial statements as of December 31, 2017 and 2016 and for each of the three years in the period ended December 31, 2017 included in this prospectus have been so included in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the Securities and Exchange Commission a registration statement on Form S-1 under the Securities Act with respect to the shares of common stock offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits and schedules filed therewith. For further information about us and the common stock offered hereby, we refer you to the registration statement and the exhibits and schedules filed thereto. Statements contained in this prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and each such statement is qualified in all respects by reference to the full text of such contract or other document filed as an exhibit to the registration statement.

You may read and copy the registration statement of which this prospectus is a part at the SEC's public reference room, which is located at 100 F Street, N.E., Room 1580, Washington, DC 20549. You can request copies of the registration statement by writing to the SEC and paying a fee for the copying cost. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the SEC's public reference room. In addition, the SEC maintains an Internet website, which is located at www.sec.gov, that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. You may access the registration statement of which this prospectus is a part at the SEC's Internet website.

We are subject to the informational and periodic reporting requirements of the Exchange Act. We file periodic reports and other information with the SEC. We intend to furnish our stockholders with annual reports containing consolidated financial statements certified by an independent registered public accounting firm. We also maintain a website at www.casa-systems.com. The information contained on, or which can be accessed through, our website does not constitute a part of this prospectus.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of
Casa Systems, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Casa Systems, Inc. and its subsidiaries as of December 31, 2017 and 2016 and the related consolidated statements of operations and comprehensive income, of convertible preferred stock and stockholders' equity (deficit), and of cash flows for each of the three years in the period ended December 31, 2017 including the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2017 in conformity with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As discussed in Note 8 to the consolidated financial statements, the Company changed the manner in which it accounts for windfall tax benefits as of January 1, 2016.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits of these consolidated financial statements in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
March 6, 2018

We have served as the Company's auditor since 2014.

CASA SYSTEMS, INC.
CONSOLIDATED BALANCE SHEETS
(Amounts in thousands, except per share amounts)

	<u>December 31,</u>	
	<u>2017</u>	<u>2016</u>
Assets		
Current assets:		
Cash and cash equivalents	\$260,820	\$329,554
Marketable securities	—	14,392
Accounts receivable, net of provision for doubtful accounts of \$692 and \$690 as of December 31, 2017 and 2016, respectively	122,634	110,234
Inventory	36,148	65,975
Prepaid expenses and other current assets	5,151	7,178
Prepaid income taxes	538	39
Total current assets	<u>425,291</u>	<u>527,372</u>
Property and equipment, net	29,363	25,682
Accounts receivable, net of current portion	4,710	6,629
Deferred tax assets	9,718	21,140
Deferred offering costs	—	1,464
Other assets	615	748
Total assets	<u>\$469,697</u>	<u>\$583,035</u>
Liabilities, Convertible Preferred Stock and Stockholders' Equity (Deficit)		
Current liabilities:		
Accounts payable	\$ 15,833	\$ 21,704
Accrued expenses and other current liabilities	48,250	149,184
Accrued income taxes	118	11,823
Deferred revenue	34,224	55,876
Current portion of long-term debt, net of unamortized debt issuance costs	2,156	2,133
Total current liabilities	<u>100,581</u>	<u>240,720</u>
Accrued income taxes, net of current portion	8,810	463
Deferred revenue, net of current portion	14,691	18,458
Long-term debt, net of current portion and unamortized debt issuance costs	295,459	297,618
Total liabilities	<u>419,541</u>	<u>557,259</u>
Commitments and contingencies (Note 16)		
Convertible preferred stock (Series A, B and C), \$0.001 par value; no shares and 6,000 shares authorized as of December 31, 2017 and 2016, respectively; no shares and 4,038 shares issued and outstanding as of December 31, 2017 and 2016, respectively	—	97,479
Stockholders' equity (deficit):		
Preferred stock, \$0.001 par value; 5,000 shares and no shares authorized as of December 31, 2017 and 2016, respectively; no shares issued and outstanding as of December 31, 2017 and 2016, respectively	—	—
Common stock, \$0.001 par value; 500,000 and 100,000 shares authorized as of December 31, 2017 and 2016, respectively; 81,043 and 33,184 shares issued and outstanding as of December 31, 2017 and 2016, respectively	81	33
Additional paid-in capital	128,798	—
Accumulated other comprehensive income (loss)	194	(1,739)
Accumulated deficit	<u>(78,917)</u>	<u>(69,997)</u>
Total stockholders' equity (deficit)	<u>50,156</u>	<u>(71,703)</u>
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	<u>\$469,697</u>	<u>\$583,035</u>

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

CASA SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME
(Amounts in thousands, except per share amounts)

	Year Ended December 31,		
	2017	2016	2015
Revenue:			
Product	\$ 311,896	\$ 279,223	\$ 247,588
Service	39,679	36,905	24,862
Total revenue	<u>351,575</u>	<u>316,128</u>	<u>272,450</u>
Cost of revenue:			
Product	88,538	89,340	74,349
Service	4,973	8,477	5,265
Total cost of revenue	<u>93,511</u>	<u>97,817</u>	<u>79,614</u>
Gross profit	<u>258,064</u>	<u>218,311</u>	<u>192,836</u>
Operating expenses:			
Research and development	60,677	49,210	37,155
Sales and marketing	39,602	36,114	36,157
General and administrative	21,563	18,215	16,453
Total operating expenses	<u>121,842</u>	<u>103,539</u>	<u>89,765</u>
Income from operations	<u>136,222</u>	<u>114,772</u>	<u>103,071</u>
Other income (expense):			
Interest income	2,439	1,208	955
Interest expense	(17,466)	(902)	(214)
Gain (loss) on foreign currency, net	886	(328)	(3,020)
Other income (expense), net	737	943	871
Total other income (expense), net	<u>(13,404)</u>	<u>921</u>	<u>(1,408)</u>
Income before provision for income taxes	122,818	115,693	101,663
Provision for income taxes	34,318	27,025	33,742
Net income	<u>88,500</u>	<u>88,668</u>	<u>67,921</u>
Other comprehensive income (expense)—foreign currency translation adjustment	1,933	(1,525)	(1,244)
Comprehensive income	<u>\$ 90,433</u>	<u>\$ 87,143</u>	<u>\$ 66,677</u>
Cash dividends declared per common share or common share equivalent	<u>\$ 1.7576</u>	<u>\$ 2.9197</u>	<u>\$ —</u>
Net income (loss) attributable to common stockholders:			
Basic	<u>\$ 11,849</u>	<u>\$ (35,119)</u>	<u>\$ 27,302</u>
Diluted	<u>\$ 11,849</u>	<u>\$ (35,119)</u>	<u>\$ 30,402</u>
Net income (loss) per share attributable to common stockholders:			
Basic	<u>\$ 0.34</u>	<u>\$ (1.07)</u>	<u>\$ 0.86</u>
Diluted	<u>\$ 0.26</u>	<u>\$ (1.07)</u>	<u>\$ 0.78</u>
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders:			
Basic	<u>35,359</u>	<u>32,864</u>	<u>31,740</u>
Diluted	<u>44,972</u>	<u>32,864</u>	<u>38,809</u>

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

CASA SYSTEMS, INC.

CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)
(Amounts in thousands, except per share amounts)

	Series A, B and C Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings (Accumulated Deficit)	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount				
Balances at January 1, 2015	4,038	\$ 97,479	31,673	\$ 32	\$ 7,638	\$ 1,030	\$ —	\$ 8,700
Exercise of stock options	—	—	133	—	226	—	—	226
Foreign currency translation adjustment, net of tax of \$0	—	—	—	—	—	(1,244)	—	(1,244)
Stock-based compensation	—	—	—	—	6,855	—	—	6,855
Net income	—	—	—	—	—	—	67,921	67,921
Balances at December 31, 2015	4,038	97,479	31,806	32	14,719	(214)	67,921	82,458
Exercise of stock options and common stock issued upon vesting of equity awards, net of shares withheld for employee taxes	—	—	1,378	1	277	—	—	278
Foreign currency translation adjustment, net of tax of \$0	—	—	—	—	—	(1,525)	—	(1,525)
Cash dividends declared (\$2.9197 per share of common stock, \$29.1968 per share of convertible preferred stock and \$2.9197 per share to holders of stock-based awards)	—	—	—	—	(22,841)	—	(226,586)	(249,427)
Stock-based compensation	—	—	—	—	7,845	—	—	7,845
Net income	—	—	—	—	—	—	88,668	88,668
Balances at December 31, 2016	4,038	97,479	33,184	33	—	(1,739)	(69,997)	(71,703)
Conversion of convertible preferred stock into common stock upon initial public offering	(4,038)	(97,479)	40,382	40	97,439	—	—	97,479
Issuance of common stock upon initial public offering, net of underwriting discounts and commissions and offering costs incurred of \$10,373	—	—	6,900	7	79,320	—	—	79,327
Exercise of stock options and common stock issued upon vesting of equity awards, net of shares withheld for employee taxes	—	—	577	1	(3,772)	—	—	(3,771)
Foreign currency translation adjustment, net of tax of \$0	—	—	—	—	—	1,933	—	1,933
Cash dividends declared (\$1.7576 per share of common stock, \$17.5764 per share of convertible preferred stock and \$1.7576 per share to holders of stock-based awards)	—	—	—	—	(52,365)	—	(97,420)	(149,785)
Stock-based compensation	—	—	—	—	8,176	—	—	8,176
Net income	—	—	—	—	—	—	88,500	88,500
Balances at December 31, 2017	—	\$ —	81,043	\$ 81	\$ 128,798	\$ 194	\$ (78,917)	\$ 50,156

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

CASA SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in thousands)

	Year Ended December 31,		
	2017	2016	2015
Cash flows from operating activities:			
Net income	\$ 88,500	\$ 88,668	\$ 67,921
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	7,738	6,008	5,149
Stock-based compensation	9,136	8,304	7,321
Deferred income taxes	11,422	(6,860)	(1,637)
Excess and obsolete inventory valuation adjustment	4,115	1,674	1,379
Increase in provision for doubtful accounts	6	—	454
Changes in operating assets and liabilities:			
Accounts receivable	(25,726)	(16,273)	(9,717)
Inventory	21,859	(22,798)	(17,373)
Prepaid expenses and other assets	3,519	(3,235)	(875)
Prepaid income taxes	(486)	900	742
Accounts payable	(6,475)	14,453	2,744
Accrued expenses and other current liabilities	10,243	15,759	7,967
Accrued income taxes	(3,212)	6,894	(10,842)
Deferred revenue	(25,631)	17,286	(28,631)
Net cash provided by operating activities	<u>95,008</u>	<u>110,780</u>	<u>24,602</u>
Cash flows provided by (used in) investing activities:			
Purchases of property and equipment	(7,014)	(7,419)	(15,503)
Purchases of marketable securities	—	(14,392)	—
Proceeds from maturities of marketable securities	14,589	—	—
Net cash provided by (used in) investing activities	<u>7,575</u>	<u>(21,811)</u>	<u>(15,503)</u>
Cash flows from financing activities:			
Proceeds from initial public offering, net of underwriting discounts and commissions	83,421	—	—
Proceeds from issuance of debt, net of issuance costs	—	292,189	7,905
Principal repayments of debt	(3,292)	(282)	(115)
Proceeds from exercise of stock options	274	594	226
Payments of dividends and equitable adjustments	(246,634)	(142,301)	(712)
Payments of initial public offering costs	(2,384)	(517)	—
Employee taxes paid related to net share settlement of equity awards	(4,046)	(315)	—
Net cash (used in) provided by financing activities	<u>(172,661)</u>	<u>149,368</u>	<u>7,304</u>
Effect of exchange rate changes on cash and cash equivalents	<u>1,344</u>	<u>(1,279)</u>	<u>(1,062)</u>
Net (decrease) increase in cash and cash equivalents	<u>(68,734)</u>	<u>237,058</u>	<u>15,341</u>
Cash and cash equivalents at beginning of year	<u>329,554</u>	<u>92,496</u>	<u>77,155</u>
Cash and cash equivalents at end of year	<u>\$ 260,820</u>	<u>\$ 329,554</u>	<u>\$ 92,496</u>
Supplemental disclosures of cash flow information:			
Cash paid for interest	\$ 16,275	\$ 274	\$ 117
Cash paid for income taxes	\$ 26,297	\$ 25,179	\$ 45,182
Supplemental disclosures of non-cash investing and financing activities:			
Purchases of property and equipment included in accounts payable	\$ 1,018	\$ 869	\$ 1,140
Prepaid expenses and other current assets included in accounts payable	\$ 1,394	\$ 256	\$ 87
Deferred offering costs included in accounts payable and accrued expenses and other current liabilities	\$ 1,193	\$ 947	\$ —
Unpaid dividends and equitable adjustments included in accrued expenses and other current liabilities	\$ 10,661	\$ 107,509	\$ 383
Release of customer incentives included in accounts receivable and accrued expenses and other current liabilities	\$ 15,468	\$ 4,206	\$ —

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

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

1. Nature of Business and Basis of Presentation

Casa Systems, Inc. (the “Company”) was incorporated under the laws of the State of Delaware on February 28, 2003. The Company is a global communications technology company headquartered in Andover, Massachusetts and has wholly owned subsidiaries in China, France, Canada, Ireland, Spain and the Netherlands.

The Company offers solutions for next-generation centralized, distributed and virtualized architectures for cable broadband, fixed-line broadband and wireless networks. The Company’s solutions enable customers to cost-effectively and dynamically increase network speed, add bandwidth capacity and new services for consumers and enterprises, reduce network complexity and reduce operating and capital expenditures. The Company’s solutions include a suite of software-centric infrastructure solutions that allow cable service providers to deliver voice, video and data services over a single platform at multi-gigabit speeds.

The Company is subject to a number of risks similar to other companies of comparable size and other companies selling and providing services to the communications industry. These risks include, but are not limited to, the level of capital spending by the communications industry, a lengthy sales cycle, dependence on the development of new products and services, unfavorable economic and market conditions, competition from larger and more established companies, limited management resources, dependence on a limited number of contract manufacturers and suppliers, the rapidly changing nature of the technology used by the communications industry and reliance on resellers and sales agents. Failure by the Company to anticipate or to respond adequately to technological developments in its industry, changes in customer or supplier requirements, changes in regulatory requirements or industry standards, or any significant delays in the development or introduction of products could have a material adverse effect on the Company’s operating results, financial condition and cash flows.

In December 2017, the Company closed its initial public offering (“IPO”) of 6,900 shares of its common stock at an offering price of \$13.00 per share, including 900 shares pursuant to the underwriters’ option to purchase additional shares of the Company’s common stock. The Company received net proceeds of \$79,327, after deducting underwriting discounts and commissions of \$6,279 and offering costs of \$4,094. Upon the closing of the IPO, all 4,038 shares of the Company’s then-outstanding preferred stock automatically converted on a ten-for-one basis into an aggregate of 40,382 shares of the Company’s common stock. Upon conversion of the preferred stock, the Company reclassified \$97,439 from temporary equity to additional paid-in capital and \$40 from temporary equity to common stock.

The Company is an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012 (the “JOBS Act”), and may remain an emerging growth company until the last day of the fiscal year following the fifth anniversary of the initial public offering, subject to specified conditions. The JOBS Act provides that an emerging growth company can take advantage of the extended transition period afforded by the JOBS Act for the implementation of new or revised accounting standards. The Company has elected not to “opt out” of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, the Company will adopt the new or revised standard at the time private companies adopt the new or revised standard, provided that the Company continues to be an emerging growth company. The JOBS Act provides that the decision to take advantage of the extended transition period for complying with new or revised accounting standards is irrevocable.

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”) and include the accounts of the Company and its wholly owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation.

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosures 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 by management in preparing these consolidated financial statements include revenue recognition, provision for doubtful accounts, reserves for excess and obsolete inventory, valuation of inventory and deferred inventory costs, the expensing and capitalization of software-related research and development costs, amortization and depreciation periods, recoverability of net deferred tax assets, valuations of uncertain tax positions, provision for income taxes, warranty allowances, the valuation of the Company's common stock and other equity instruments, and stock-based compensation expense.

Although the Company regularly reassesses the assumptions underlying these estimates, actual results could differ materially from these estimates. Changes in estimates are recorded in the period in which they become known. The Company bases its estimates on historical experience and various other assumptions that it believes to be reasonable under the circumstances existing at the time such estimates are made.

Cash Equivalents

Cash equivalents include all highly liquid investments maturing within three months from the date of purchase. As of December 31, 2017 and 2016, the Company's cash equivalents consisted of investments in certificates of deposit, commercial paper and money market mutual funds.

Marketable Securities

Marketable securities with original maturities of greater than three months and remaining maturities of less than one year from the balance sheet date are classified as current assets. Marketable securities with remaining maturities of greater than one year from the balance sheet date are classified as non-current assets.

The Company classifies all of its marketable securities as available-for-sale securities. The Company's marketable securities are measured and reported at fair value. Unrealized gains and losses are reported as a separate component of stockholders' equity (deficit). The cost of securities sold is determined on a specific identification basis, and realized gains and losses are included in other income (expense) within the consolidated statement of operations and comprehensive income. If any adjustment to fair value reflects a decline in the value of the investment, the Company considers available evidence to evaluate the extent to which the decline is "other than temporary" and reduces the investment to fair value through a charge to the consolidated statement of operations and comprehensive income. The Company did not have any marketable securities outstanding as of December 31, 2017. As of December 31, 2016, the Company's marketable securities consisted of investments in certificates of deposit.

Accounts Receivable

Accounts receivable are presented net of a provision for doubtful accounts, which is an estimate of amounts that may not be collectible. Accounts receivable for arrangements with customary payment terms, which are one

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year or less, are recorded at invoiced amounts and do not bear interest. The Company generally does not require collateral, but the Company may, in certain instances based on its credit assessment, require full or partial prepayment prior to shipment.

For certain customers and/or for certain transactions, the Company provides extended payment arrangements to allow the customer to pay for the purchased equipment in monthly, other periodic or lump-sum payments over a period of one to five years. Certain of these arrangements are collateralized by the underlying assets during the term of the arrangement. Payments due beyond 12 months from the balance sheet date are recorded as non-current assets. In addition, amounts recorded as current and non-current accounts receivable for extended payment term arrangements at any balance sheet date have a corresponding amount recorded as deferred revenue because the Company defers the recognition of revenue for all extended payment term arrangements and only recognizes revenue to the extent of the payment amounts that become due from the customer (see—"Revenue Recognition—Deferred Revenue").

Although there is no contractual interest rate for customer arrangements with extended payment terms, the Company imputes interest on the accounts receivable related to these arrangements and reduces the arrangement fee that will be recognized as revenue for the amount of the imputed interest, which is recorded as interest income over the payment term using the effective interest method. For the periods presented in the accompanying consolidated financial statements, the impact of imputing interest on revenue and interest income was insignificant.

Accounts receivable as of December 31, 2017 and 2016 consisted of the following:

	December 31,	
	2017	2016
Current portion of accounts receivable, net:		
Accounts receivable, net	\$ 106,114	\$ 87,250
Amounts due from related party (see Note 15)	13,367	15,619
Accounts receivable, extended payment arrangements	3,153	7,365
	<u>122,634</u>	<u>110,234</u>
Accounts receivable, net of current portion:		
Accounts receivable, extended payment arrangements	4,710	6,629
	<u>\$ 127,344</u>	<u>\$ 116,863</u>

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The Company performs ongoing credit evaluations of its customers and, if necessary, provides a provision for doubtful accounts and expected losses. When assessing and recording its provision for doubtful accounts, the Company evaluates the age of its accounts receivable, current economic trends, creditworthiness of the customers, customer payment history, and other specific customer and transaction information. The Company writes off accounts receivable against the provision when it determines a balance is uncollectible and no longer actively pursues collection of the receivable. Adjustments to the provision for doubtful accounts are recorded as general and administrative expenses in the consolidated statements of operations and comprehensive income. A summary of changes in the provision for doubtful accounts for the years ended December 31, 2017, 2016 and 2015 is as follows:

	Year Ended December 31,		
	2017	2016	2015
Provision for doubtful accounts at beginning of year	\$ 690	\$ 768	\$ 485
Provisions	6	—	454
Write-offs	(4)	(78)	(171)
Provision for doubtful accounts at end of year	<u>\$ 692</u>	<u>\$ 690</u>	<u>\$ 768</u>

As of December 31, 2017 and 2016, the Company concluded that all amounts due under extended payment term arrangements were collectible and no reserve for credit losses was recorded. During the years ended December 31, 2017, 2016 and 2015, the Company did not provide a reserve for credit losses and did not write off any uncollectible receivables due under extended payment term arrangements.

Inventories

Inventories are valued at the lower of cost or market value. Cost is computed using the first-in first-out convention. Inventories are composed of hardware and related component parts of finished goods. The Company establishes provisions for excess and obsolete inventories after evaluating historical sales, future demand, market conditions, expected product life cycles, and current inventory levels to reduce such inventories to their estimated net realizable value. Such provisions are made in the normal course of business and charged to cost of revenue in the consolidated statements of operations and comprehensive income.

Deferred inventory costs are included within inventory in the consolidated balance sheets. Deferred inventory costs represent the cost of products that have been delivered to the customer for which revenue associated with the arrangement has been deferred as a result of not meeting all of the required revenue recognition criteria, such as receipt of customer acceptance. Until the revenue recognition criteria are met, the Company retains the right to a return of the underlying inventory. Deferred inventory costs are recognized as cost of revenue in the consolidated statements of operations and comprehensive income when the related revenue is recognized.

Property and Equipment

Property and equipment is stated at historical cost less accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets. Leasehold improvements are recorded at cost with any reimbursement from the landlord being accounted for as deferred rent, which is amortized using the straight-line method over the lease term. Costs for trial systems held and used by the Company's customers pursuant to evaluation agreements are also included within property and equipment. Trial systems held and used by the Company's customers are depreciated over the estimated useful life of such assets, which is two years.

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Whenever a trial system is sold to a customer and the selling price is recorded as revenue, the related net book value of the trial system sold is removed from property and equipment and recorded as a cost of revenue. Maintenance and repairs expenditures are charged to expense as incurred.

Estimated useful lives of the respective property and equipment assets are as follows:

	Estimated Useful Life
Computers and purchased software	3 years
Leasehold improvements	Shorter of lease term or 7 years
Furniture and fixtures	7 years
Machinery and equipment	3 – 5 years
Building	40 years
Building improvements	5 – 40 years
Trial systems at customers' sites	2 years

Upon retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is included in income from operations.

Impairment of Long-Lived Assets

The Company evaluates its long-lived assets, which consist primarily of property and equipment, for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Factors that the Company considers in deciding when to perform an impairment review include significant underperformance of the business in relation to expectations, significant negative industry or economic trends and significant changes or planned changes in the use of the assets. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the future undiscounted net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the asset exceeds the fair value of the asset, less the cost to sell. No events or changes in circumstances existed to require an impairment assessment during the years ended December 31, 2017, 2016 and 2015.

Deferred Offering Costs

Deferred offering costs of \$4,094, consisting of legal, professional accounting and other third-party fees related to the IPO, were reclassified to additional paid-in capital as a reduction of the proceeds upon the closing of the IPO in December 2017. Deferred offering costs of \$2,384 and \$517 were paid during the years ended December 31, 2017 and 2016, respectively.

Concentration of Risks

Financial instruments that potentially subject the Company to concentrations of credit risk consist principally of cash and cash equivalents, marketable securities and accounts receivable. Cash and cash equivalents and marketable securities consist of demand deposits, savings accounts, commercial paper, money market mutual funds, and certificates of deposit with financial institutions, which may exceed Federal Deposit Insurance Corporation limits. The Company has not experienced any losses related to its cash, cash equivalents and marketable securities and does not believe that it is subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

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Significant customers are those that represent 10% or more of revenue or accounts receivable as set forth in the following table:

	Revenue			Accounts Receivable, Net	
	Year Ended December 31,			December 31,	
	2017	2016	2015	2017	2016
Customer A	37%	23%	14%	44%	11%
Customer B	11%	10%	17%	10%	13%
Customer C	*	19%	*	17%	21%
Customer D	*	*	*	*	12%

* Less than 10% of total

Customer B is a related party, Liberty Global Affiliates (see Note 15).

Certain of the components and subassemblies included in the Company's products are obtained from a single source or a limited group of suppliers. In addition, the Company primarily relies on two third parties to manufacture certain components of its products. Although the Company seeks to reduce dependence on those limited sources of suppliers and manufacturers, the partial or complete loss of certain of these sources could have a material adverse effect on the Company's operating results, financial condition and cash flows and damage its customer relationships.

Product Warranties

Substantially all of the Company's products are covered by a warranty for software and hardware for periods ranging from 90 days to one year. In addition, in conjunction with customers' renewals of maintenance and support contracts, the Company offers an extended warranty for periods typically of one to three years for agreed-upon fees. In the event of a failure of a hardware product or software covered by these warranties, the Company must repair or replace the software or hardware or, if those remedies are insufficient, and at the discretion of the Company, provide a refund. The Company's warranty reserve, which is included in accrued expenses and other current liabilities in the consolidated balance sheets, reflects estimated material, labor and other costs related to potential or actual software and hardware warranty claims for which the Company expects to incur an obligation. The Company's estimates of anticipated rates of warranty claims and the costs associated therewith are primarily based on historical information and future forecasts. The Company periodically assesses the adequacy of the warranty reserve and adjusts the amount as necessary. If the historical data used to calculate the adequacy of the warranty reserve are not indicative of future requirements, additional or reduced warranty reserves may be required.

A summary of changes in the amount reserved for warranty costs for the years ended December 31, 2017, 2016 and 2015 is as follows:

	Year Ended December 31,		
	2017	2016	2015
Warranty reserve at beginning of year	\$ 1,256	\$ 993	\$ 949
Provisions	1,829	1,862	1,272
Charges	(1,839)	(1,599)	(1,228)
Warranty reserve at end of year	<u>\$ 1,246</u>	<u>\$ 1,256</u>	<u>\$ 993</u>

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Revenue Recognition

The Company generates revenue from sales of its broadband products, along with associated maintenance and support services, and, to a lesser extent, from sales of professional services and extended warranty services. The Company also generates revenue from sales of additional line cards and software-based capacity expansions. Maintenance and support services include telephone support and unspecified software upgrades and updates provided on a when-and-if-available basis.

In the Company's consolidated statements of operations and comprehensive income, revenue from sales of broadband products and capacity expansions is classified as product revenue, and revenue from maintenance and support, professional services and extended warranty services is classified as service revenue.

The Company recognizes revenue from sales when the following revenue recognition criteria are met:

- *Persuasive evidence of an arrangement exists.* Binding contracts and/or customer purchase orders are generally evidence of an arrangement. For professional services, evidence of an arrangement may also include information documenting the scope of work to be performed, and customer acceptance terms, if any.
- *Delivery has occurred.* For broadband products, shipping documents and customer acceptance, if applicable, verify that delivery has occurred. For software-enabled capacity expansions, delivery occurs when the additional bandwidth capacity is made available to the customer. For professional services, delivery occurs as the services are completed.
- *The sales price is fixed or determinable.* The sales price is considered fixed or determinable when the fees have been contractually agreed with the customer and are not deemed to be subject to refund, adjustment or future discounts, and when the payment terms of the transaction do not extend beyond the Company's customary payment terms, which are one year or less.
- *Collectibility is reasonably assured.* The Company assesses the ability to collect from its customers based on a number of factors that generally include information supplied by credit agencies, references and/or analysis of customer accounts and payment history. If collection from a customer is not considered reasonably assured, all revenue related to the customer arrangement is deferred until payment is received and all other revenue recognition criteria have been met.

When customer acceptance of the product is required and is other than perfunctory, revenue for the entire customer arrangement is deferred until the acceptance has been received.

The Company's products have both software and non-software (i.e., hardware) components that function together to deliver the products' essential functionality. In addition, the hardware sold generally cannot be used apart from the embedded software. As a result, all of the Company's product and service offerings are excluded from the scope of software revenue recognition requirements and instead fall within the scope of Accounting Standards Codification ("ASC") Topic 605, *Revenue Recognition*.

Many of the Company's sales involve multiple-deliverable arrangements that include products and maintenance and support services and, on a limited basis, may also include professional services and extended warranty services. The Company has determined that its products, maintenance and support services, professional services and extended warranty services have standalone value to the customer because each of these deliverables is sold separately by the Company to its customers or, in the case of professional services, is sold separately by other vendors. As a result, the Company treats each of these deliverables as a separate unit of accounting for purposes of allocating the arrangement fee and recognizing the revenue of each unit.

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For its multiple-deliverable arrangements, the Company allocates the arrangement fee to each deliverable based on the relative selling prices of each of the deliverables in the arrangement using the selling price hierarchy. In such circumstances, the Company determines the selling price of each deliverable based on vendor-specific objective evidence (“VSOE”) of selling price, if it exists; otherwise, third-party evidence (“TPE”) of selling price. If neither VSOE nor TPE exists, the Company uses its best estimate of the selling price (“BESP”) for the deliverable. The Company limits the amount of the arrangement fee allocated to deliverables to the amount that is not contingent on the future delivery of products or services or future performance obligations and the amount that is not subject to customer-specific return or refund privileges.

To date, the Company has not been able to establish VSOE of selling price of any of its products, maintenance and support services, professional services or extended warranty services because the Company has not established a history of consistently pricing each product or service within a narrow range. In addition, the Company is not able to determine TPE of selling price for its products or services because the Company’s various product and service offerings contain a significant level of differentiation and, therefore, comparable pricing of competitors’ products and services with similar functionality cannot be obtained. As the Company is unable to establish selling price using VSOE or TPE, the Company uses BESP to allocate the arrangement fee to products, maintenance and support services, professional services and extended warranty services in multiple-deliverable arrangements. The objective of BESP is to determine the price at which the Company would transact a sale if a product or service was sold on a standalone basis. The Company determines BESP of selling price for its products and services by considering multiple factors, including, but not limited to, its historical pricing practices by customer type and geographic-specific market factors.

Revenue from product sales is recognized upon delivery to the customer, or upon the later receipt of customer acceptance of the product when such acceptance is required.

Revenue from maintenance and support services is recognized ratably over the contract period, which is typically one year, but can be as long as three or five years. When customer acceptance of a product is required, the recognition of any associated maintenance and support services revenue commences only upon customer acceptance of the associated product. Revenue from extended warranty services is recognized ratably over the contract period, which is typically one to three years.

Revenue from professional services is recognized as the services are performed. Professional services generally include installation or configuration services that are not deemed to be essential to the functionality of the products. When customer acceptance is required, the recognition of any associated professional services revenue is deferred until the associated product and/or professional service is accepted by the customer.

Resellers

The Company markets and sell its products through its direct global sales force, supported by sales agents, and through resellers. The Company’s resellers receive an order from an end customer prior to placing an order with the Company, and the Company confirms the identification of or is aware of the end customer prior to accepting such order. The Company invoices the reseller an amount that reflects a reseller discount and records revenue based on the amount of the discounted arrangement fee. The Company’s resellers do not stock inventory received from the Company.

When the Company transacts with a reseller, its contractual arrangement is with the reseller and not with the end customer. Whether the Company transacts business with and receives the order from a reseller or directly from an end customer, its revenue recognition policy and resulting pattern of revenue recognition for the order are the same.

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The Company also uses sales agents that assist in the sales process with certain customers primarily located in the Latin America and Asia-Pacific regions. Sales agents are not resellers. If a sales agent is engaged in the sales process, the Company receives the order directly from and sells the products and services directly to the end customer, and the Company pays a commission to the sales agent, calculated as a percentage of the related customer payment. Sales agent commissions are recorded as expenses when incurred and are classified as sales and marketing expenses in the Company's consolidated statements of operations and comprehensive income.

Deferred Revenue

Amounts billed in excess of revenue recognized are recorded as deferred revenue. Deferred revenue includes customer deposits, amounts billed for maintenance and support services contracts in advance of services being performed, amounts for trade-in right liabilities and amounts related to arrangements that have been deferred as a result of not meeting the required revenue recognition criteria as of the end of the reporting period. Deferred revenue expected to be recognized as revenue more than one year subsequent to the balance sheet date is reported within long-term liabilities in the consolidated balance sheets.

When the payment terms of a customer order extend beyond the Company's customary payment terms, which are one year or less, the Company considers the arrangement to be an extended payment term arrangement and concludes that the sales price is not fixed or determinable for revenue recognition purposes. In these circumstances, the Company defers all revenue of the arrangement and only recognizes revenue to the extent of the payment amounts that become due, provided that all other revenue recognition criteria have been met.

The Company defers recognition of incremental direct costs, such as cost of goods and services, until recognition of the related revenue. Such costs are classified as current assets if the related deferred revenue is classified as current, and such costs are classified as non-current assets if the related deferred revenue is classified as non-current.

Other Revenue Recognition Policies

In limited instances, the Company has offered future rebates to customers based on a fixed or variable percentage of actual sales volumes over specified periods. The future rebates earned based on the customer's purchasing from the Company in one period may be used as credits to be applied by them against accounts receivable due to the Company in later periods. The Company accounts for these future rebates as a reduction of the revenue recorded for the customer's current purchasing activity giving rise to the future rebates. The liability for these future rebates is recorded as accrued customer incentives (within accrued expenses and other current liabilities) until the credits have been applied by the customer against accounts receivable due to the Company or the credits expire.

When future trade-in rights are granted to customers at the time of sale, the Company defers a portion of the revenue recognized for the sale and accounts for it as a guarantee at fair value until the trade-in right is exercised or the right expires, in accordance with ASC Topic 460, *Guarantees*. Determining the fair value of the trade-in right requires the Company to estimate the probability of the trade-in right being exercised and the future value of the product upon trade-in. The Company assesses and updates these estimates each reporting period, and updates to these estimates may result in either an increase or decrease in the amount of revenue deferred. The amounts of deferred revenue recorded in the consolidated balance sheet as of December 31, 2016 included amounts deferred for trade-in rights of \$8,477. As of December 31, 2017, no amounts for trade-in rights were deferred.

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Billings to customers for shipping costs and reimbursement of out-of-pocket expenses, including travel, lodging and meals, are recorded as revenue, and the associated costs incurred by the Company for those items are recorded as cost of revenue.

The Company excludes any taxes assessed by a governmental authority that are directly imposed on a revenue-producing transaction (e.g., sales, use and value added taxes) from its revenue and costs.

Stock-Based Compensation

The Company measures stock options and other stock-based awards granted to employees and directors based on the fair value on the date of the grant and recognizes compensation expense of those awards, net of estimated forfeitures, over the requisite service period, which is generally the vesting period of the respective award. Generally, the Company issues stock options with only service-based vesting conditions and records the expense for these awards using the straight-line method.

For stock-based awards granted to non-employee consultants, compensation expense is recognized over the period during which services are rendered by such non-employee consultants until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is remeasured using the then-current fair value of the Company's common stock and updated assumption inputs in the Black-Scholes option-pricing model.

The Company classifies stock-based compensation expense in its consolidated statements of operations and comprehensive income in the same manner in which the award recipient's payroll costs are classified or in which the award recipient's service payments are classified.

The Company recognizes compensation expense for only the portion of awards that are expected to vest. In developing a forfeiture rate estimate, the Company has considered its historical experience to estimate pre-vesting forfeitures for service-based awards. The impact of a forfeiture rate adjustment will be recognized in full in the period of adjustment, and if the actual forfeiture rate is materially different from the Company's estimate, the Company may be required to record adjustments to stock-based compensation expense in future periods.

The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes option pricing model. The Company was a private company until December 14, 2017 and lacks sufficient company-specific historical and implied volatility information for its stock. Therefore, it estimates its expected stock volatility based on the historical volatility of publicly traded peer companies and expects to continue to do so until such time as it has adequate historical data regarding the volatility of its own traded stock price. The expected term of the Company's stock options has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla" options. The expected term of stock options granted to non-employees is equal to the contractual term of the option award. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. Expected dividend yield is based on the fact that the Company does not have a history of declaring or paying cash dividends, except for the special cash dividends declared in November 2014, June 2016, December 2016, May 2017 and November 2017 and in those circumstances the board of directors approved cash dividends to be paid to holders of the Company's stock options, stock appreciation rights ("SARs") and restricted stock units ("RSUs") upon vesting as an equitable adjustment to the holders of such instruments.

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The Company has also granted SARs to certain employees, which require the Company to pay in cash upon exercise an amount equal to the product of the excess of the per share fair market value of the Company's common stock on the date of exercise over the exercise price, multiplied by the number of shares of common stock with respect to which the stock appreciation right is exercised. Because these awards may require the Company to settle the awards in cash, they are accounted for as a liability in the Company's consolidated balance sheets. The liability related to these awards, as well as related compensation expense, is recognized over the period during which services are rendered until completed. Changes in the fair value of the SAR liability are estimated using the Black-Scholes option pricing model and are recorded in the consolidated statements of operations and comprehensive income. After vesting is completed, the Company will continue to remeasure the fair market value of the liability until the award is either exercised or canceled, with changes in the fair value of the liability recorded in the consolidated statements of operations and comprehensive income.

Research and Development Costs

The Company expenses research and development costs as incurred. Costs incurred to develop software to be licensed to customers are expensed prior to the establishment of technological feasibility of the software and are capitalized thereafter until commercial release of the software. The Company has not historically capitalized software development costs as the establishment of technological feasibility typically occurs shortly before the commercial release of its software, which is embedded in its products. As such, all software development costs related to software for license to customers are expensed as incurred and included within research and development expense in the accompanying consolidated statements of operations and comprehensive income.

Advertising Costs

Advertising costs are expensed as incurred and are included in selling and marketing expense in the accompanying consolidated statements of operations and comprehensive income. Advertising expenses were not significant for any periods presented.

Foreign Currency Translation

For the Company's subsidiary in Ireland, the U.S. dollar is the functional currency. For each of the Company's other foreign subsidiaries, the functional currency is its local currency. Assets and liabilities of these foreign subsidiaries are translated into U.S. dollars using period-end exchange rates, and revenues and expenses are translated into U.S. dollars using average exchange rates in effect during each period. The effects of these foreign currency translation adjustments are included in accumulated other comprehensive income, a separate component of stockholders' equity (deficit).

Foreign currency transaction gains (losses) are included in the consolidated statements of operations and comprehensive income as a component of other income (expense) and totaled \$886, \$(328) and \$(3,020) for the years ended December 31, 2017, 2016 and 2015, respectively.

Fair Value Measurements

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the price that would be received for an asset or the exit price that would be paid to transfer a liability in the principal or most advantageous market in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of

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unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

- Level 1*— Quoted prices in active markets for identical assets and liabilities.
- Level 2*— Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities at the measurement date; quoted prices in markets that are not active for identical or similar assets and liabilities; or other inputs that are observable or can be corroborated by observable market data.
- Level 3*— Unobservable inputs that involve management judgment and are supported by little or no market activity, including pricing models, discounted cash flow methodologies and similar techniques.

The categorization of a financial instrument within the valuation hierarchy is based on the lowest level of input that is significant to the fair value measurement.

The Company's cash equivalents, marketable securities, foreign currency forward contracts and SARs are carried at fair value, determined according to the fair value hierarchy described above (see Note 6). The fair values of accounts receivable, accounts payable and accrued expenses and other current liabilities approximate their fair values due to the short-term nature of these assets and liabilities, with the exception of amounts recorded by the Company as "accounts receivable, non-current," which represent amounts billed to customers for which payment has not yet become due and for which an offsetting amount of deferred revenue has been recorded. The carrying values of the Company's debt obligations (see Note 9) as of December 31, 2017 and 2016 approximated their fair values because the debt bears interest at rates the Company would be required to pay on the issuance of debt with similar terms, based on an analysis of recent market conditions and other Company-specific factors.

Income Taxes

The Company accounts for income taxes using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the financial statement and tax basis of assets and liabilities, as measured by enacted tax rates anticipated to be in effect when these differences reverse. This method also requires the recognition of future tax benefits to the extent that realization of such benefits is more likely than not. Deferred tax expense or benefit is the result of changes in the deferred tax assets and liabilities. The Company assesses the likelihood that its deferred tax assets will be recovered from future taxable income and, to the extent it believes, based upon the weight of available evidence, that it is more likely than not that all or a portion of the deferred tax assets will not be realized, a valuation allowance is established through a charge to income tax expense. Potential for recovery of deferred tax assets is evaluated by estimating the future taxable profits expected and considering prudent and feasible tax planning strategies.

The Company records a liability for potential payments of taxes to various tax authorities related to uncertain tax positions and other tax matters. The recorded liability is based on a determination of whether and how much of a tax benefit taken by the Company in its tax filings or positions is "more likely than not" to be realized. The amount of the benefit that may be recognized in the financial statements is the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. To the extent that the assessment of

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such tax positions changes, the change in estimate is recorded in the period in which the determination is made. The Company establishes a liability, which is included in accrued income taxes in the consolidated balance sheets, for tax-related uncertainties based on estimates of whether, and the extent to which, additional taxes will be due. These liabilities are established when the Company believes that certain positions might be challenged despite the Company's belief that the tax return positions are fully supportable. The recorded liability is adjusted in light of changing facts and circumstances. The provision for income taxes includes the impact of the recorded liability and changes thereto.

The Company recognizes interest and penalties related to uncertain tax positions within other income (expense) in the accompanying consolidated statements of operations and comprehensive income. Accrued interest and penalties are included in accrued income taxes in the consolidated balance sheets.

On December 22, 2017, the Tax Cuts and Jobs Act (the "TCJA") was enacted which, among other things, lowered the U.S. corporate income tax rate to 21% from 35% and established a modified territorial system requiring a mandatory deemed repatriation tax on undistributed earnings of foreign subsidiaries. Beginning in 2018, the TCJA also requires a minimum tax on certain future earnings generated by foreign subsidiaries while providing for future tax-free repatriation of such earnings through a 100% dividends-received deduction. While the reduction in the U.S. corporate tax rate under the TCJA is not effective until 2018, under GAAP, changes in tax rates are accounted for in the period enacted. Therefore, in accordance with ASC Topic 740, *Income Taxes*, and Staff Accounting Bulletin 118 ("SAB 118"), the Company recognized a provisional income tax charge in the fourth quarter of 2017 of \$14,098 related to the TCJA based on its initial analysis using available information and estimates. The provisional charge is comprised of \$10,031 related to the one-time deemed repatriation of accumulated earnings of foreign subsidiaries and related withholding taxes and \$4,067 related primarily to the remeasurement of net deferred tax assets as a result of the reduction in the U.S. corporate income tax rate effected by the TCJA. As a result, applicable U.S. and foreign taxes have been provided on substantially all of the Company's accumulated earnings of foreign subsidiaries previously considered indefinitely reinvested. Given the significant complexity of the TCJA, anticipated guidance from the U.S. Treasury Department about implementing the TCJA and the potential for additional guidance from the Securities and Exchange Commission ("SEC") or the Financial Accounting Standards Board ("FASB") related to the TCJA or additional information becoming available, the Company's provisional income tax charge may be adjusted during 2018 and is expected to be finalized no later than the fourth quarter of 2018. Other provisions of the TCJA that impact future tax years are still being assessed.

Comprehensive Income

Comprehensive income includes net income as well as other changes in stockholders' equity (deficit) that result from transactions and economic events other than those with stockholders. Comprehensive income for the periods presented consists of net income and the change in the cumulative foreign currency translation adjustment.

Net Income (Loss) per Share

The Company follows the two-class method when computing net income (loss) per share as the Company has issued shares that meet the definition of participating securities. The two-class method determines net income (loss) per share for each class of common and participating securities according to dividends declared or accumulated and participation rights in undistributed earnings. The two-class method requires income available to common stockholders for the period to be allocated between common and participating securities based upon their respective rights to receive dividends as if all income for the period had been distributed.

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Basic net income (loss) per share attributable to common stockholders is computed by dividing the net income (loss) attributable to common stockholders by the weighted-average number of shares of common stock outstanding for the period. Diluted net income (loss) attributable to common stockholders is computed by adjusting net income (loss) attributable to common stockholders to reallocate undistributed earnings based on the potential impact of dilutive securities. Diluted net income (loss) per share attributable to common stockholders is computed by dividing the diluted net income (loss) attributable to common stockholders by the weighted-average number of shares of common stock outstanding for the period, including potential dilutive common shares. For purpose of this calculation, outstanding stock-based awards and convertible preferred stock are considered potential dilutive common shares.

Impact of Recently Adopted Accounting Standards

In July 2015, the FASB issued Accounting Standards Update (“ASU”) 2015-11, *Simplifying the Measurement of Inventory* (“ASU 2015-11”). Under ASU 2015-11, subsequent measurement of inventory is based on the lower of cost or net realizable value. Net realizable value is estimated selling price in the ordinary course of business, less the estimated cost of completion and disposal. This update does not apply to inventory that is measured using last-in, first-out or the retail inventory method. The new guidance is effective for fiscal years beginning after December 15, 2016. The Company adopted ASU 2015-11 during the first quarter of 2017, and there was no material impact on its consolidated financial statements.

Impact of Recently Issued Accounting Standards

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)* (“ASU 2014-09”), which supersedes existing revenue recognition guidance under GAAP. The core principle of this standard is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In August 2015, the FASB issued ASU 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*, which delays the effective date of ASU 2014-09 such that the standard is effective for public companies for annual periods beginning after December 15, 2017 and for interim periods within those fiscal years. The standard is effective for private companies, and emerging growth companies that choose to take advantage of the extended transition periods, for annual reporting periods beginning after December 15, 2018. Entities are not permitted to adopt the standard earlier than the original effective date for public entities. This standard can be adopted either retrospectively to each prior reporting period presented or as a cumulative effect adjustment as of the date of adoption. In March 2016, the FASB issued ASU No. 2016-08, *Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations* (“ASU 2016-08”), which further clarifies the implementation guidance on principal versus agent considerations in ASU 2014-09. In April 2016, the FASB issued ASU No. 2016-10, *Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing* (“ASU 2016-10”), clarifying the implementation guidance on identifying performance obligations and licensing. In May 2016, the FASB issued ASU No. 2016-12, *Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients* (“ASU 2016-12”), which clarifies the objective of the collectibility criterion, presentation of taxes collected from customers, non-cash consideration, contract modifications at transition, completed contracts at transition and how guidance in ASU 2014-09 is retrospectively applied. ASU 2016-08, ASU 2016-10 and ASU 2016-12 have the same effective dates and transition requirements as ASU 2014-09. The Company continues to assess the potential impact that the adoption of ASU 2014-09, ASU 2016-08, ASU 2016-10 and ASU 2016-12 will have on its consolidated financial statements. Based on its assessment to date, the Company does expect that the adoption of this new accounting standard will impact the

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timing and amount of assets, liabilities, revenue and/or expenses recorded and the financial statement disclosures related to the Company's revenue from contracts with its customers. For example, the treatment of extended payment terms, contingent revenue elements, commissions and costs to obtain customer contracts may change under the new accounting standard. The Company is continuing to assess the impact of this new accounting standard and the expected adoption method. This assessment is subject to change, and the Company may identify other impacts on its consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases* ("ASU 2016-02"), which will require lessees to recognize most leases on their balance sheets as a right-of-use asset with a corresponding lease liability, and lessors to recognize a net lease investment. Additional qualitative and quantitative disclosures will also be required. The new guidance is effective for public companies for annual reporting periods beginning after December 15, 2018 and for interim periods within those fiscal years. The new guidance is effective for private companies, and emerging growth companies that choose to take advantage of the extended transition periods, for annual reporting periods beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. Early application is permitted. The Company is currently assessing the potential impact that the adoption of ASU 2016-02 will have on its consolidated financial statements.

In June 2016, the FASB issued ASU 2016-13, *Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). This guidance requires that financial assets measured at amortized cost be presented at the net amount expected to be collected. The measurement of expected credit losses is based on historical experience, current conditions and reasonable and supportable forecasts that affect the collectibility. This guidance is effective for public companies for annual reporting periods beginning after December 15, 2019 and for interim periods within those fiscal years. This guidance is effective for private companies, and emerging growth companies that choose to take advantage of the extended transition periods, for annual reporting periods beginning after December 15, 2020, and interim periods within fiscal years beginning after December 15, 2021. The Company is currently assessing the potential impact that the adoption of ASU 2016-13 will have on its consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments* ("ASU 2016-15"), to address diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The standard is effective for public companies for annual periods beginning after December 15, 2017, including interim periods within those fiscal years. The standard is effective for private companies, and emerging growth companies that choose to take advantage of the extended transition periods, for annual periods beginning after December 15, 2018, and interim periods within fiscal years beginning after December 15, 2019. The Company is currently assessing the potential impact that the adoption of ASU 2016-15 will have on its consolidated financial statements.

In October 2016, the FASB issued ASU 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfer of Assets Other than Inventory* ("ASU 2016-16"), which requires the recognition of the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. The standard is effective for public companies for annual periods beginning after December 15, 2017, including interim periods within those fiscal years. The standard is effective for private companies, and emerging growth companies that choose to take advantage of the extended transition periods, for annual periods beginning after December 15, 2018, and interim reporting periods within annual periods beginning after December 15, 2019. The Company is currently assessing the potential impact that the adoption of ASU 2016-16 will have on its consolidated financial statements.

In August 2017, the FASB issued ASU 2017-12, *Derivatives and Hedging—Targeted Improvements to Accounting for Hedging Activities* ("ASU 2017-12"), which aims to improve the financial reporting of hedging

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relationships to better portray the economic results of an entity's risk management activities in its financial statements. The standard is effective for public companies for annual periods beginning after December 15, 2018, including interim periods within those fiscal years. The standard is effective for private companies, and emerging growth companies that choose to take advantage of the extended transition periods, for annual periods beginning after December 15, 2019, and interim reporting periods within annual periods beginning after December 15, 2020. The Company is currently assessing the potential impact that the adoption of ASU 2017-12 will have on its consolidated financial statements.

3. Inventory

Inventory as of December 31, 2017 and 2016 consisted of the following:

	December 31,	
	2017	2016
Raw materials	\$ 5,135	\$ 5,037
Work in process	7	103
Finished goods:		
Manufactured finished goods	36,321	60,866
Deferred inventory costs	3,344	4,488
	<u>44,807</u>	<u>70,494</u>
Valuation adjustment for excess and obsolete inventory	(8,659)	(4,519)
	<u>\$36,148</u>	<u>\$65,975</u>

4. Property and Equipment

Property and equipment as of December 31, 2017 and 2016 consisted of the following:

	December 31,	
	2017	2016
Computers and purchased software	\$ 12,343	\$ 9,246
Leasehold improvements	1,268	1,044
Furniture and fixtures	1,752	1,516
Machinery and equipment	17,911	11,494
Land	3,091	3,091
Building	4,765	4,765
Building improvements	4,906	4,724
Trial systems at customers' sites	7,458	6,581
	<u>53,494</u>	<u>42,461</u>
Less: Accumulated depreciation and amortization	(24,131)	(16,779)
	<u>\$ 29,363</u>	<u>\$ 25,682</u>

During the years ended December 31, 2017, 2016 and 2015, the Company transferred trial systems from inventory into property and equipment with values of \$877, \$706 and \$1,545, respectively, net of transfers of trial systems to cost of revenue. In addition, the Company transferred \$2,566, \$1,082 and \$806 of equipment from inventory into property and equipment during the years ended December 31, 2017, 2016 and 2015, respectively.

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Total depreciation and amortization expense was \$7,738, \$6,008 and \$5,149 for the years ended December 31, 2017, 2016 and 2015, respectively.

5. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities as of December 31, 2017 and 2016 consisted of the following:

	December 31,	
	2017	2016
Accrued compensation and related taxes	\$22,465	\$ 18,475
Accrued warranty (see Note 2)	1,246	1,256
Dividends and equitable adjustments payable (see Note 10)	10,661	107,509
Accrued customer incentives (see Note 2)	8,437	15,449
Other accrued expenses	5,441	6,495
	<u>\$48,250</u>	<u>\$ 149,184</u>

6. Fair Value Measurements

The Company's cash equivalents include certificates of deposit and money market mutual funds, which are valued using Level 1 or Level 2 inputs in the fair value hierarchy. The Company's marketable securities consist of certificates of deposit, which are valued using Level 2 inputs in the fair value hierarchy. The Company's foreign currency forward contracts are valued using Level 2 inputs in the fair value hierarchy. The Company's SARs are valued using as Level 3 inputs in the fair value hierarchy based on management's judgment and the assumptions set forth in Note 12 as there is no market activity to derive an estimate of their fair value. Changes in the fair value of SARs are recorded in operating expenses in the consolidated statements of operations and comprehensive income.

The following tables present information about the fair value of the Company's financial assets and liabilities as of December 31, 2017 and 2016 and indicate the level of the fair value hierarchy utilized to determine such fair values:

	Fair Value Measurements as of December 31, 2017 Using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Certificates of deposit	\$ —	\$ 18,905	\$ —	\$ 18,905
Commercial paper	—	11,483	—	11,483
Money market mutual funds	224,555	—	—	224,555
	<u>\$ 224,555</u>	<u>\$ 30,388</u>	<u>\$ —</u>	<u>\$254,943</u>
Liabilities:				
SARs	\$ —	\$ —	\$ 2,155	\$ 2,155
Foreign currency forward contracts	—	150	—	150
	<u>\$ —</u>	<u>\$ 150</u>	<u>\$ 2,155</u>	<u>\$ 2,305</u>

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	Fair Value Measurements as of December 31, 2016 Using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Certificates of deposit	\$ —	\$ 17,558	\$ —	\$ 17,558
Money market mutual funds	321,088	—	—	321,088
Foreign currency forward contracts	—	60	—	60
	<u>\$ 321,088</u>	<u>\$ 17,618</u>	<u>\$ —</u>	<u>\$338,706</u>
Liabilities:				
SARs	\$ —	\$ —	\$ 1,195	\$ 1,195
Foreign currency forward contracts	—	56	—	56
	<u>\$ —</u>	<u>\$ 56</u>	<u>1,195</u>	<u>\$ 1,251</u>

During the years ended December 31, 2017, 2016 and 2015 there were no transfers between Level 1, Level 2 and Level 3.

The liability for SARs in the table above consists of the fair value of the SARs granted to the Company's employees. The fair values of the SARs are based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy. The Company's valuation of these SARs utilized the Black-Scholes option-pricing model, which incorporates assumptions and estimates to determine their fair values (see Note 12). The Company assesses these assumptions and estimates on a quarterly basis as additional information impacting the assumptions is obtained. Changes in the fair value of the SARs liability are recognized as stock-based compensation expense in the consolidated statements of operations and comprehensive income.

The following table provides a summary of changes in the fair values of the Company's SARs liability, for which fair value is determined by Level 3 inputs:

	Year Ended December 31,		
	2017	2016	2015
Fair value at beginning of the year	\$ 1,195	\$ 737	\$ 271
Change in fair value	960	458	466
Exercises	—	—	—
Fair value at end of year	<u>\$ 2,155</u>	<u>\$ 1,195</u>	<u>\$ 737</u>

The Company's cash and cash equivalents as of December 31, 2017 and 2016 consisted of the following:

	December 31,	
	2017	2016
Cash	\$ 5,877	\$ 5,300
Cash equivalents:		
Certificates of deposit	18,905	3,166
Commercial paper	\$ 11,483	\$ —
Money market mutual funds	224,555	321,088
Total cash equivalents	254,943	324,254
Total cash and cash equivalents	<u>\$ 260,820</u>	<u>\$ 329,554</u>

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The Company's marketable securities as of December 31, 2016 consisted of certificates of deposit of \$14,392.

7. Derivative Instruments

The Company has certain international customers that are billed in foreign currencies. To mitigate the volatility related to fluctuations in the foreign exchange rates for accounts receivable denominated in foreign currencies, the Company enters into foreign currency forward contracts. As of December 31, 2017, the Company had foreign currency forward contracts outstanding with notional amounts totaling 5,924 euros maturing in the first and second quarter of 2018. As of December 31, 2016, the Company had foreign currency forward contracts outstanding with notional amounts totaling 11,171 euros which matured in the first and second quarter of 2017.

The Company's foreign currency forward contracts economically hedge certain risk but are not designated as hedges for financial reporting purposes, and accordingly, all changes in the fair value of these derivative instruments are recorded as unrealized foreign currency transaction gains or losses and are included in the consolidated statements of operations and comprehensive income as a component of other income (expense). The Company records all derivative instruments in the consolidated balance sheet at their fair values. As of December 31, 2016, the Company recorded an asset of \$60 and as of December 31, 2017 and 2016, the Company recorded a liability of \$150 and \$56, respectively, related to outstanding foreign currency forward contracts, which were included in prepaid expenses and other current assets and in accrued expenses and other current liabilities, respectively, in the consolidated balance sheets.

8. Income Taxes

Income before the provision for income taxes for the years ended December 31, 2017, 2016 and 2015 consisted of the following:

	Year Ended December 31,		
	2017	2016	2015
United States	\$ 77,410	\$ 106,386	\$ 99,972
Foreign	45,408	9,307	1,691
	<u>\$ 122,818</u>	<u>\$ 115,693</u>	<u>\$ 101,663</u>

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The provision for income taxes for the years ended December 31, 2017, 2016 and 2015 consisted of the following:

	Year Ended December 31,		
	2017	2016	2015
Current income tax provision:			
Federal	\$17,498	\$30,876	\$34,124
State	589	1,775	924
Foreign	4,809	1,234	331
Total current income tax provision	<u>22,896</u>	<u>33,885</u>	<u>35,379</u>
Deferred income tax provision (benefit):			
Federal	12,468	(5,802)	(2,260)
State	(1,024)	(979)	346
Foreign	(22)	(79)	277
Total deferred income tax provision (benefit)	<u>11,422</u>	<u>(6,860)</u>	<u>(1,637)</u>
Total income tax provision	<u>\$34,318</u>	<u>\$27,025</u>	<u>\$33,742</u>

A reconciliation of the U.S. federal statutory rate to the Company's effective income tax rate for the years ended December 31, 2017, 2016 and 2015 is as follows:

	Year Ended December 31,		
	2017	2016	2015
Federal statutory income tax rate	35.0%	35.0%	35.0%
State taxes, net of federal tax benefit	0.6	1.2	0.7
Research and development tax credits	(3.5)	(2.1)	(1.6)
Permanent differences	0.5	1.1	1.6
Domestic manufacturing deduction	(0.9)	(2.0)	(3.2)
Foreign tax rate differential	(7.0)	(2.0)	0.6
Equitable adjustment payments	(6.0)	(7.0)	—
Excess tax benefit from stock-based transactions	(1.6)	(1.2)	—
Impact of deferred tax rate decrease under TCJA	3.3	—	—
TCJA one-time deemed repatriation of accumulated earnings of foreign subsidiaries	7.1	—	—
Withholding tax on repatriation of accumulated earnings of foreign subsidiaries	1.1	—	—
Other, net	(0.7)	0.4	0.1
Effective income tax rate	<u>27.9%</u>	<u>23.4%</u>	<u>33.2%</u>

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The income tax effect of each type of temporary difference and carryforward as of December 31, 2017 and 2016 was as follows:

	December 31,	
	2017	2016
Deferred tax assets:		
Nonqualified stock options	\$ 2,336	\$ 3,183
Tax credit carryforwards	3,737	1,099
Inventory valuation	2,190	1,750
Accrued liabilities and reserves	589	5,690
Deferred revenue	5,538	12,805
Other	286	515
Total deferred tax assets	<u>14,676</u>	<u>25,042</u>
Deferred tax liabilities:		
Depreciation and amortization	(2,089)	(2,328)
Deferred costs	(225)	(804)
Accrued liabilities and reserves	(2,598)	(647)
Deferred revenue	(46)	(116)
Other	—	(7)
Total deferred tax liabilities	<u>(4,958)</u>	<u>(3,902)</u>
Net deferred tax assets	<u>\$ 9,718</u>	<u>\$21,140</u>

The Company has concluded that net deferred tax assets will be recovered based upon its expectation that current and future earnings will provide sufficient taxable income to realize the recorded net tax assets. However, the realization of the Company's net deferred tax assets cannot be assured, and to the extent that future taxable income against which these tax assets may be applied is not sufficient, some or all of the Company's recorded net deferred tax assets would not be realizable. The Company is required to compute income tax expense in each jurisdiction in which it operates. This process requires the Company to project its current tax liability and estimate its deferred tax assets and liabilities, including tax credit carryforwards. In assessing the need for a valuation allowance against its net deferred tax assets, the Company considers its recent operating results, future taxable income projections and feasible tax planning strategies.

On December 22, 2017, the TCJA was enacted which, among other things, lowered the U.S. corporate income tax rate to 21% from 35% and established a modified territorial system requiring a mandatory deemed repatriation tax on undistributed earnings of foreign subsidiaries. Beginning in 2018, the TCJA also requires a minimum tax on certain future earnings generated by foreign subsidiaries while providing for future tax-free repatriation of such earnings through a 100% dividends-received deduction. While the reduction in the U.S. corporate tax rate under the TCJA is not effective until 2018, under GAAP, changes in tax rates are accounted for in the period enacted. Therefore, in accordance with ASC Topic 740, *Income Taxes*, and SAB 118, the Company recognized a provisional charge in the fourth quarter of 2017 of \$14,098 related to the TCJA based on its initial analysis using available information and estimates. The provisional charge is comprised of \$10,031 related to the one-time deemed repatriation of accumulated earnings of foreign subsidiaries and related withholding taxes and \$4,067 related primarily to the remeasurement of net deferred tax assets as a result of the reduction in the U.S. corporate income tax rate effected by the TCJA. As a result, applicable U.S. and foreign taxes have been provided on substantially all of the Company's accumulated earnings of foreign subsidiaries previously considered indefinitely reinvested. Given the significant complexity of the TCJA, anticipated guidance from the

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U.S. Treasury Department about implementing the TCJA and the potential for additional guidance from the SEC or the FASB related to the TCJA or additional information becoming available, the Company's provisional charge may be adjusted during 2018 and is expected to be finalized no later than the fourth quarter of 2018. Other provisions of the TCJA that impact future tax years are still being assessed.

As of December 31, 2017, the Company had state research and development tax credits of \$3,340 that will begin to expire in 2030 through 2032. Management believes that it is more likely than not that the research and development tax benefit will be realized and thus has not provided a valuation allowance relating to these tax credit carryforwards.

Prior to 2017, the Company's intent was to indefinitely reinvest the total amount of the unremitted earnings of each of its foreign subsidiaries to support business growth in international regions. As such, the Company had not provided for U.S. taxes on the unremitted earnings of its international subsidiaries, which totaled approximately \$27,850 as of December 31, 2016. Under the TCJA, the Company is required to provide U.S. taxes on cumulative unremitted earnings from its foreign subsidiaries. The Company has estimated a U.S. tax liability on these earnings and the associated withholding taxes of \$10,031 as of December 31, 2017. The Company is still evaluating whether to change its indefinite reinvestment assertion in light of the 2017 Tax Act and consider that conclusion to be incomplete under guidance issued by the SEC. If the Company subsequently changes our assertion during the measurement period, such changes will be accounted for through an adjustment to the provisional income tax charge during 2018 which is expected to be finalized no later than the fourth quarter of 2018.

Interest and penalties related to uncertain tax positions are recorded in the consolidated statements of operations and comprehensive income within other income (expense) and totaled \$14, \$14 and \$20 for the years ended December 31, 2017, 2016 and 2015, respectively. The liability recorded for potential penalties and interest was \$158 and \$145 as of December 31, 2017 and 2016, respectively. The Company had a total recorded liability of \$1,142 and \$463 related to uncertain tax positions, inclusive of penalties and interest, as of December 31, 2017 and 2016, respectively, which is included in accrued income taxes, net of current portion in the consolidated balance sheets.

The aggregate changes in the balance of gross uncertain tax positions, which excludes interest and penalties, for the years ended December 31, 2017, 2016 and 2015 were as follows:

Balance at January 1, 2015	\$ 318
Settlement/decreases related to tax positions taken during prior years	—
Increases related to tax positions taken during prior years	—
Increases related to tax positions taken during the current year	—
Balance at December 31, 2015	\$ 318
Settlement/decreases related to tax positions taken during prior years	—
Increases related to tax positions taken during prior years	—
Increases related to tax positions taken during the current year	—
Balance at December 31, 2016	318
Settlement/decreases related to tax positions taken during prior years	—
Increases related to tax positions taken during prior years	—
Increases related to tax positions taken during the current year	1,377
Balance at December 31, 2017	<u>\$1,695</u>

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The Company and its subsidiaries file income tax returns in the U.S. federal jurisdiction as well as various states and foreign jurisdictions. As of December 31, 2017, the tax years 2014 through 2017 remained open to examination in the U.S. federal jurisdiction and the tax years 2013 through 2017 remained open to examination in the Massachusetts state and China federal jurisdictions. If any issues addressed in the Company's tax audits are resolved in a manner not consistent with management's expectations, the Company would be required to adjust its provision for income tax in the period such resolution occurs. Although timing of the resolution and/or closure of audits is highly uncertain, the Company does not believe it is reasonably possible that its unrecognized tax benefits will materially change in the next 12 months.

Upon the settlement of certain stock-based awards, such as exercise, vesting, forfeiture or cancellation, the actual tax deduction is compared with the cumulative stock-based compensation expense and any excess tax deduction related to such awards is considered a windfall tax benefit. Windfall tax benefits are tracked within a windfall tax benefit pool to offset any future tax deduction shortfalls. Prior to the Company's adoption of FASB ASU 2016-09, *Improvements to Employee Share-Based Payment Accounting*, as of January 1, 2016, windfall tax benefits were recorded as increases to additional paid-in capital in the period in which the tax deduction reduced income taxes.

9. Debt

The aggregate principal amount of debt outstanding as of December 31, 2017 and 2016 consisted of the following:

	December 31,	
	2017	2016
Term loans	\$ 297,000	\$ 300,000
Mortgage loan	7,261	7,553
Total principal amount of debt outstanding	<u>\$ 304,261</u>	<u>\$ 307,553</u>

Current and non-current debt obligations reflected in the consolidated balance sheets as of December 31, 2017 and 2016 consisted of the following:

	December 31,	
	2017	2016
Current liabilities:		
Term loans	\$ 3,000	\$ 3,000
Mortgage loan	303	292
Current portion of principal payment obligations	3,303	3,292
Unamortized debt issuance costs, current portion	(1,147)	(1,159)
Current portion of long-term debt, net of unamortized debt issuance costs	<u>\$ 2,156</u>	<u>\$ 2,133</u>
Non-current liabilities:		
Term loans	\$ 294,000	\$ 297,000
Mortgage loan	6,958	7,261
Non-current portion of principal payment obligations	300,958	304,261
Unamortized debt issuance costs, non-current portion	(5,499)	(6,643)
Long-term debt, net of current portion and unamortized debt issuance costs	<u>\$ 295,459</u>	<u>\$ 297,618</u>

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Term Loan and Revolving Credit Facilities

On December 20, 2016, the Company entered into a credit agreement with JPMorgan Chase Bank, N.A., as administrative agent, various lenders and JPMorgan Chase Bank, N.A. and Barclays Bank PLC providing for (i) a term loan facility of \$300,000 and (ii) a revolving credit facility of up to \$25,000 in revolving credit loans and letters of credit.

As of December 31, 2017 and 2016, \$297,000 and \$300,000 in principal amount, respectively, was outstanding under the term loan facility (the “Term Loans”) and the Company did not have any outstanding borrowings under the revolving credit facility; however, the Company had used \$1,000 under the revolving credit facility for a stand-by letter of credit that serves as collateral for a stand-by letter of credit issued by Bank of America to one of the Company’s customers pursuant to a contractual performance guarantee. In addition, the Company may, subject to certain conditions, including the consent of the administrative agent and the institutions providing such increases, increase the facilities by an unlimited amount so long as the Company is in compliance with specified leverage ratios, or otherwise by up to \$70,000.

Borrowings under the facilities bear interest at a floating rate, which can be either a Eurodollar rate plus an applicable margin or, at the Company’s option, a base rate (defined as the highest of (x) the JPMorgan Chase, N.A. prime rate, (y) the federal funds effective rate, plus one-half percent (0.50%) per annum and (z) a one-month Eurodollar rate plus 1.00% per annum) plus an applicable margin. The applicable margin for borrowings under the term loan facility is 4.00% per annum for Eurodollar rate loans (subject to a 1.00% per annum interest rate floor) and 3.00% per annum for base rate loans. As a result of the completion of the Company’s IPO in December 2017, the applicable margin for borrowings under the revolving credit facility is 1.75% per annum for Eurodollar rate loans and 0.75% per annum for base rate loans, subject to reduction based on the Company’s maintaining of specified net leverage ratios. The interest rates payable under the facilities are subject to an increase of 2.00% per annum during the continuance of any payment default.

For Eurodollar rate loans, the Company may select interest periods of one, two, three or six months or, with the consent of all relevant affected lenders, twelve months. Interest will be payable at the end of the selected interest period, but no less frequently than every three months within the selected interest period. Interest on any base rate loan is not set for any specified period and is payable quarterly. The Company has the right to convert Eurodollar rate loans into base rate loans and the right to convert base rate loans into Eurodollar rate loans at its option, subject, in the case of Eurodollar rate loans, to prepayment penalties if the conversion is effected prior to the end of the applicable interest period. As of December 31, 2017, the interest rate on the Term Loans was 5.69% per annum, which was based on a three-month Eurodollar rate of 1.69% per annum plus the applicable margin of 4.00% per annum for Eurodollar rate loans. As of December 31, 2016, the interest rate on the Term Loans was 5.00% per annum, which was based on a one-month Eurodollar rate at the applicable floor of 1.00% per annum plus the applicable margin of 4.00% per annum for Eurodollar rate loans.

Upon entering into the term loan facility, the Company incurred debt issuance costs of \$7,811, which were initially recorded as a reduction of the debt liability and are amortized to interest expense using the effective interest method from the issuance date of the Term Loan until the maturity date. Principal payments of \$3,000 were made under the term loan facility during the year ended December 31, 2017. No principal payments were made during the year ended December 31, 2016. Interest expense, including the amortization of debt issuance costs, totaled \$16,800 and \$538 for the years ended December 31, 2017 and 2016, respectively.

The revolving credit facility also requires payment of quarterly commitment fees at a rate of 0.25% per annum on the difference between committed amounts and amounts actually borrowed under the facility and

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customary letter of credit fees. For the years ended December 31, 2017 and 2016, interest expense related to the fee for the unused amount of the revolving credit facility totaled \$61 and \$2, respectively.

The Term Loans mature on December 20, 2023, and the revolving credit facility matures on December 20, 2021. The Term Loans are subject to amortization in equal quarterly installments, commencing on March 31, 2017, of principal in an annual aggregate amount equal to 1.0% of the original principal amount of the Term Loans of \$300,000, with the remaining outstanding balance payable at the date of maturity.

Voluntary prepayments of principal amounts outstanding under the term loan facility are permitted at any time; however, if a prepayment of principal is made with respect to a Eurodollar loan on a date other than the last day of the applicable interest period, the Company is required to compensate the lenders for any funding losses and expenses incurred as a result of the prepayment. Prior to the revolving credit facility maturity date, funds borrowed under the revolving credit facility may be borrowed, repaid and reborrowed, without premium or penalty.

In addition, the Company is required to make mandatory prepayments under the facilities with respect to (i) 100% of the net cash proceeds from certain asset dispositions (including casualty and condemnation events) by the Company or certain of its subsidiaries, subject to certain exceptions and reinvestment provisions, (ii) 100% of the net cash proceeds from the issuance or incurrence of any additional debt by the Company or certain of its subsidiaries, subject to certain exceptions, and (iii) 50% of the Company's excess cash flow, as defined in the credit agreement, subject to reduction upon its achievement of specified performance targets.

The facilities are secured by, among other things, a first priority security interest, subject to permitted liens, in substantially all of the Company's assets and all of the assets of certain of its subsidiaries and a pledge of certain of the stock of certain of its subsidiaries, in each case subject to specified exceptions. The facilities contain customary affirmative and negative covenants, including certain restrictions on the Company's ability to pay dividends, and, with respect to the revolving credit facility, a financial covenant requiring the Company to maintain a specified total net leverage ratio in the event that on the last day of any fiscal quarter the Company has utilized more than 30% of its borrowing capacity under the facility. As of December 31, 2017 and 2016, the Company had not utilized more than 30% of its borrowing capacity under the revolving credit facility and compliance with the financial covenant was not applicable.

Commercial Mortgage Loan

On July 1, 2015, the Company entered into a commercial mortgage loan agreement in the amount of \$7,950 (the "Mortgage Loan"). Borrowings under the Mortgage Loan bear interest at a rate of 3.5% per annum and are repayable in 60 monthly installments of \$46, consisting of principal and interest based on a 20-year amortization schedule. The remaining amount of unpaid principal under the Mortgage Loan is due on the maturity date of July 1, 2020. Upon entering into the Mortgage Loan, the Company incurred debt issuance costs of \$45, which was initially recorded as a direct deduction from the debt liability and are amortized to interest expense using the effective interest method from issuance date of the loan until the maturity date.

The Company made principal payments under the Mortgage Loan of \$292, \$282 and \$115 during the years ended December 31, 2017, 2016 and 2015, respectively. Interest expense, including the amortization of debt issuance costs, totaled \$272, \$283 and \$145 for the years ended December 31, 2017, 2016 and 2015, respectively.

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The Mortgage Loan is secured by the land and building purchased in March 2015 and subjects the Company to various affirmative, negative and financial covenants, including maintenance of a minimum debt service ratio. The Company was in compliance with all covenants of the Mortgage Loan as of December 31, 2017 and 2016.

As of December 31, 2017, aggregate minimum future principal payments of the Company's debt are summarized as follows:

<u>Year Ending December 31,</u>	
2018	\$ 3,303
2019	3,314
2020	9,644
2021	3,000
2022	3,000
Thereafter	282,000
	<u>\$ 304,261</u>

10. Convertible Preferred Stock

Upon the closing of the Company's initial public offering ("IPO") on December 19, 2017, all shares of the Company's then-outstanding preferred stock automatically converted on a ten-for-one basis into an aggregate of 40,382 shares of the Company's common stock. Convertible preferred stock outstanding as of December 31, 2016 consisted of the following (in thousands):

	<u>December 31, 2016</u>				
	<u>Preferred Shares Designated</u>	<u>Preferred Shares Issued and Outstanding</u>	<u>Carrying Value</u>	<u>Liquidation Preference</u>	<u>Common Stock Issuable Upon Conversion</u>
Series A convertible preferred stock	1,291	—	\$ —	\$ —	—
Series B convertible preferred stock	352	179	1,542	2,326	1,790
Series C convertible preferred stock	3,859	3,859	95,937	135,134	38,592
	<u>5,502</u>	<u>4,038</u>	<u>\$97,479</u>	<u>\$ 137,460</u>	<u>40,382</u>

Prior to the closing of the IPO, changes in the liquidation preference of the preferred stock resulted from the accrual of cumulative dividends. During the year ended December 31, 2017, the Company accrued an additional \$5,674 of liquidation preference on the preferred stock. Upon conversion of the preferred stock on December 19, 2017, the Company reclassified \$97,439 from temporary equity to additional paid-in capital and \$40 from temporary equity to common stock.

Preferred Stock

Upon the closing of the IPO on December 19, 2017, the Company filed a restated certificate of incorporation, which authorized the issuance of preferred stock with rights and preferences, including voting rights, designated from time to time by the board of directors. As of December 31, 2017, there were 5,000 shares of preferred stock authorized with a par value of \$0.001 per share, and no shares of preferred stock issued or outstanding.

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Special Dividends to Holders of Common and Preferred Stock

November 2017 Special Dividend

On November 30, 2017, the board of directors declared a special dividend to the holders of common stock and preferred stock of record on that date, contingent upon the closing of the Company's IPO. The cash dividend declared to stockholders was \$0.5802 per share of common stock, \$5.8020 per share of Series B convertible preferred stock (the "Series B Preferred Stock") and \$5.8020 per share of Series C convertible preferred stock (the "Series C Preferred Stock"). Related to this special dividend declared in November 2017, the Company paid \$42,137 of dividends to the common and preferred stockholders during the year ended December 31, 2017, and as of December 31, 2017, dividend payments to be made totaled \$865 and were included in accrued expenses and other current liabilities in the accompanying consolidated balance sheet.

In connection with this special dividend declared in November 2017, the board of directors also approved, contingent upon the payment of the November 2017 special dividend, cash payments to be made to holders of the Company's stock options, SARs and RSUs as an equitable adjustment to the holders of such instruments in accordance with the provisions of the Company's equity incentive plans. The equitable adjustment payments to the holders of the stock options, SARs and RSUs are equal to \$0.5802 per share multiplied by the net number of shares subject to outstanding equity awards after applying the treasury stock method. The cash payments to such holders will be made as their equity awards vest through fiscal year 2021. During the year ended December 31, 2017, the Company paid \$5,193 to the holders of such vested equity awards. As of December 31, 2017, equitable adjustment payments to be made as equity awards vest through fiscal year 2021, net of estimated forfeitures, totaled \$1,735 and were included in accrued expenses and other current liabilities in the accompanying consolidated balance sheets.

The cash dividends declared to the holders of common stock, Series B Preferred Stock and Series C Preferred Stock totaled \$19,572, \$1,039 and \$22,391, respectively, and the equitable adjustment to the holders of stock options, SARs and RSUs, net of estimated forfeitures, totaled \$6,928. The \$49,930 aggregate amount of such dividends and equitable adjustments was recorded as a charge to additional paid-in capital during the year ended December 31, 2017.

May 2017 Special Dividend

On May 10, 2017, the board of directors declared and the stockholders approved a special dividend to the holders of common stock and preferred stock of record on that date. The cash dividend declared to stockholders was \$1.1774 per share of common stock, \$11.7744 per share of Series B Preferred Stock and \$11.7744 per share of Series C Preferred Stock. Related to this special dividend declared in May 2017, the Company paid \$87,133 of dividends to the common and preferred stockholders during the year ended December 31, 2017 and no dividend payments with respect to this special dividend were payable as of December 31, 2017.

In connection with the special dividend declared in May 2017, the board of directors also approved cash payments to be made to holders of the Company's stock options, SARs and RSUs as an equitable adjustment to the holders of such instruments in accordance with the provisions of the Company's equity incentive plans. The equitable adjustment payments to the holders of the stock options, SARs and RSUs are equal to \$1.1774 per share multiplied by the net number of shares subject to outstanding equity awards after applying the treasury stock method. The cash payments to such holders will be made as their equity awards vest through fiscal year 2021. During the year ended December 31, 2017, the Company paid \$10,431 to the holders of such vested equity awards. As of December 31, 2017, equitable adjustment payments to be made as equity awards vest through

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fiscal year 2021, net of estimated forfeitures, totaled \$2,292 and were included in accrued expenses and other current liabilities in the accompanying consolidated balance sheets.

The cash dividends declared to the holders of common stock, Series B Preferred Stock and Series C Preferred Stock totaled \$39,585, \$2,108 and \$45,440, respectively, and the equitable adjustment to the holders of stock options, SARs and RSUs, net of estimated forfeitures, totaled \$12,723. The \$99,856 aggregate amount of such dividends and equitable adjustments was recorded as a charge to additional paid-in capital (until reduced to zero) and a charge to accumulated deficit during the year ended December 31, 2017.

December 2016 Special Dividend

On December 21, 2016, the board of directors declared, and on December 29, 2016 the stockholders approved, a special dividend to the holders of common stock and preferred stock of record on December 27, 2016. The cash dividend declared to stockholders was \$2.3306 per share of common stock, \$23.3058 per share of Series B Preferred Stock and \$23.3058 per share of Series C Preferred Stock. Related to this special dividend declared in December 2016, the Company paid \$77,153 and \$94,272 of dividends to the common and preferred stockholders during the years ended December 31, 2017 and 2016, respectively, and, as of December 31, 2016, dividend payments to be made totaled \$77,153 and were included in accrued expenses and other current liabilities in the accompanying consolidated balance sheet. No dividend payments with respect to this special dividend were payable as of December 31, 2017.

In connection with the special dividend declared in December 2016, the board of directors also approved cash payments to be made to holders of the Company's stock options, SARs and RSUs as an equitable adjustment to the holders of such instruments in accordance with the provisions of the Company's equity incentive plans. The equitable adjustment payments to the holders of stock options, SARs and RSUs are equal to \$2.3306 per share multiplied by the net number of shares subject to outstanding equity awards after applying the treasury stock method. The cash payments to such holders will be made as their equity awards vest through fiscal year 2020. During the year ended December 31, 2017, the Company paid \$23,395 to the holders of such vested equity awards. During the year ended December 31, 2016, no payments were made to the holders of such vested equity awards. As of December 31, 2017 and 2016, equitable adjustment payments to be made as equity awards vest through fiscal year 2020, net of estimated forfeitures, totaled \$4,726 and \$28,121, respectively, and were included in accrued expenses and other current liabilities in the accompanying consolidated balance sheet.

The cash dividends declared to the holders of common stock, Series B Preferred Stock and Series C Preferred Stock totaled \$77,311, \$4,172 and \$89,942, respectively, and the equitable adjustment to the holders of stock options, SARs and RSUs, net of estimated forfeitures, totaled \$28,121. The \$199,546 aggregate amount of such dividends and equitable adjustments was recorded as a charge to retained earnings (until reduced to zero), a charge to additional paid-in capital (until reduced to zero) and a charge to accumulated deficit during the year ended December 31, 2016.

June 2016 Special Dividend

On June 17, 2016, the board of directors declared and the stockholders approved a special dividend to the holders of common stock and preferred stock of record on that date. The cash dividend declared to stockholders was \$0.5891 per share of common stock, \$5.8910 per share of Series B Preferred Stock, and \$5.8910 per share of Series C Preferred Stock. Related to this special dividend declared in June 2016, the Company paid \$43,148 of dividends to the common and preferred stockholders during the year ended December 31, 2016, and, as of December 31, 2017 and 2016, no dividend payments with respect to this special dividend were payable.

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In connection with the special dividend declared in June 2016, the board of directors also approved cash payments to be made to holders of the Company's stock options, SARs and RSUs as an equitable adjustment to the holders of such instruments in accordance with the provisions of the Company's equity incentive plans. The equitable adjustment payments to the holders of stock options, SARs and RSUs are equal to \$0.5891 per share multiplied by the net number of shares subject to outstanding equity awards after applying the treasury stock method. The cash payments to such holders will be made as their equity awards vest through fiscal year 2020. During the years ended December 31, 2017 and 2016, the Company paid \$1,075 and \$4,678, respectively to the holders of such vested equity awards. As of December 31, 2017 and 2016, equitable adjustment payments to be made as equity awards vest through fiscal year 2020, net of estimated forfeitures, totaled \$980 and \$2,055 and were included in accrued expenses and other current liabilities in the accompanying consolidated balance sheet.

The cash dividends declared to the holders of common stock, Series B Preferred Stock and Series C Preferred Stock totaled \$19,359, \$1,054 and \$22,735, respectively, and the equitable adjustment to the holders of stock options, SARs and RSUs, net of estimated forfeitures, totaled \$6,733. The \$49,881 aggregate amount of such dividends and equitable adjustments was recorded as a charge to retained earnings during the year ended December 31, 2016.

November 2014 Special Dividend

On November 30, 2014, the board of directors declared and the stockholders approved a special dividend to the holders of common stock and preferred stock of record on that date. The cash dividend declared to stockholders was \$0.3835 per share of common stock, \$3.8346 per share of Series B Preferred Stock and \$3.8346 per share of Series C Preferred Stock. Related to this special dividend declared in November 2014, the Company paid \$345 of dividends to the common and preferred stockholders during the year ended December 31, 2015, and no dividend payments with respect to this special dividend were payable as of December 31, 2017 or 2016.

In connection with the special dividend declared in November 2014, the board of directors also approved cash payments to be made to holders of the Company's stock options and SARs as an equitable adjustment to the holders of such instruments in accordance with the provisions of the Company's equity incentive plans. The equitable adjustment payments to the holders of stock options and SARs are equal to \$0.3835 per share multiplied by the net number of shares subject to outstanding equity awards after applying the treasury stock method. The cash payments to the holders of stock options and SARs will be made as equity awards vest through fiscal year 2018. During the years ended December 31, 2017, 2016 and 2015, the Company paid \$117, \$203 and \$367, respectively, to the holders of stock options and SARs for vested equity awards. As of December 31, 2017 and 2016, equitable adjustment payments to be made as equity awards vest through fiscal year 2018, net of estimated forfeitures, totaled \$63 and \$180, respectively, and were included in accrued expenses and other current liabilities in the accompanying consolidated balance sheets.

11. Common Stock

Upon the closing of the IPO on December 19, 2017, the Company filed a restated certificate of incorporation, which authorized the Company to issue 500,000 shares of \$0.001 par value common stock. Each share of common stock entitles the holder to one vote on all matters submitted to a vote of the Company's stockholders. Common stockholders are entitled to receive dividends, as may be declared by the board of directors, if any, subject to the preferential dividend rights of the preferred stock. Through December 31, 2017, except for the special cash dividends declared on November 30, 2014, June 17, 2016, December 21, 2016, May 10, 2017 and November 30, 2017 (see Note 10), no dividends have been declared by the board of directors.

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As of December 31, 2017, the Company had reserved 25,838 shares of common stock for the exercise of outstanding stock options, the vesting of outstanding RSUs, and the number of shares remaining available for grant under the Company's 2017 Stock Incentive Plan (see Note 12).

Stock Split

On December 1, 2017, the Company effected a five-for-one stock split of its issued and outstanding shares of common stock and a proportional adjustment to the existing conversion ratio of each series of the Company's Convertible Preferred Stock (see Note 10). Accordingly, all share and per share amounts for all periods presented in the accompanying consolidated financial statements and notes thereto have been adjusted retroactively, where applicable, to reflect this stock split and adjustment of the preferred stock conversion ratios.

12. Stock-based Compensation

2003 Stock Incentive Plan

The Company's 2003 Stock Incentive Plan, as amended (the "2003 Plan"), provided for the grant of qualified incentive stock options, nonqualified stock options, restricted stock or other stock-based awards to the Company's employees, officers, directors, advisers and outside consultants. The number of shares authorized for grant under the 2003 Plan, as amended, was 32,500 shares. The 2003 Plan was administered by the board of directors, or at the discretion of the board of directors, by a committee of the board or by one or more executive officers of the Company. The exercise prices, vesting and other restrictions were determined at the discretion of the board of directors, or their committee or by one or more executive officers of the Company, if so delegated.

The 2003 Plan was terminated in August 2011, and the remaining 2,140 shares available for issuance under the plan at that time were transferred to the Company's 2011 Stock Incentive Plan (the "2011 Plan"). The shares of common stock underlying any awards that are forfeited, canceled, repurchased or are otherwise terminated by the Company under the 2003 Plan will be added back to the shares of common stock available for issuance under the Company's 2017 Stock Incentive Plan (the "2017 Plan").

2011 Stock Incentive Plan

The 2011 Plan provided for the Company to sell or issue common stock or restricted common stock, or to grant qualified incentive stock options, nonqualified stock options, SARs, RSUs or other stock-based awards to the Company's employees, officers, directors, advisers and outside consultants. The 2011 Plan was administered by the board of directors, or at the discretion of the board of directors, by a committee of the board. The exercise prices, vesting and other restrictions were determined at the discretion of the board of directors, or their committee if so delegated, except that the exercise price per share of stock options could not be less than 100% of the fair market value of common stock on the date of grant and the term of the stock option could not be greater than ten years. The stock options generally vest over a four-year period and expire ten years from the date of grant. Certain options provide for accelerated vesting if there is a change in control (as defined in the stock option agreements).

The 2011 Plan was terminated for the purpose of making new grants in December 2017, and the remaining 2,855 shares available for issuance under the 2011 Plan at that time were transferred to the 2017 Plan. Awards outstanding under the 2011 Plan at the time of the 2011 Plan's termination will continue to be governed by their existing terms. The shares of common stock underlying any awards that are forfeited, canceled, repurchased or are otherwise terminated by the Company under the 2011 Plan will be added back to the shares of common stock available for issuance under the 2017 Plan.

CASA SYSTEMS, INC.**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**
(Amounts in thousands, except per share amounts)***2017 Stock Incentive Plan***

On November 17, 2017, the Company's board of directors adopted, and on November 30, 2017, the Company's stockholders approved, the 2017 Plan, which became effective immediately prior to the effectiveness of the registration statement for the IPO. The 2017 Plan provides for the grant of incentive stock options, nonqualified stock options, stock appreciation rights, restricted stock awards, restricted stock units and other stock-based awards. The number of shares initially reserved for issuance under the 2017 Plan is the sum of 7,161 shares, plus the number of shares (up to 18,746 shares) equal to the sum of (i) the number of shares remaining available for issuance under the 2003 Plan and 2011 Plan upon the effectiveness of the 2017 Plan and (ii) the number of shares of common stock subject to outstanding awards under the 2003 Plan and 2011 Plan that expire, terminate or are otherwise surrendered, canceled, forfeited or repurchased by the Company at their original issuance price pursuant to a contractual repurchase right. The number of shares of common stock that may be issued under the 2017 Plan will automatically increase on each January 1, beginning with the fiscal year ending December 31, 2019 and continuing for each fiscal year until, and including, the fiscal year ending December 31, 2027, equal to the least of (i) 20,000 shares, (ii) 4% of the outstanding shares of common stock on such date and (iii) an amount determined by the Company's board of directors. The shares of common stock underlying any awards that are forfeited, canceled, repurchased or are otherwise terminated by the Company under the 2017 Plan will be added back to the shares of common stock available for issuance under the 2017 Plan. The total number of shares authorized for issuance under the 2017 Plan was 10,023 shares as of December 31, 2017, of which 9,363 shares remained available for future grant.

Stock Option Valuation

The fair value of each option award is estimated on the date of grant using the Black-Scholes option-pricing model that uses the assumptions noted in the table below. Expected volatility for the Company's common stock was determined based on an average of the historical volatility of a peer group of similar public companies. The expected term of options granted was calculated using the simplified method, which represents the average of the contractual term of the option and the weighted-average vesting period of the option. The Company uses the simplified method because it does not have sufficient historical option exercise data to provide a reasonable basis upon which to estimate the expected term. The expected dividend yield is based on the fact that the Company does not have a history of paying cash dividends, except for the special dividends declared in November 2014, June 2016, December 2016, May 2017 and November 2017 (see Note 10), and in those circumstances, the board of directors approved cash dividends to be paid to holders of the Company's stock options and SARs upon vesting as an equitable adjustment to the holders of such instruments. The risk-free rate for periods within the expected life of the option is based upon the U.S. Treasury yield curve in effect at the time of grant.

In determining the exercise prices for options granted prior to the Company's IPO, the Company's board of directors considered the fair value of the common stock as of the measurement date. The fair value of the common stock was determined by the board of directors at each award grant date based upon a variety of factors, including the results obtained from an independent third-party valuation of the Company's common stock, the Company's financial position and historical financial performance, the status of technological developments within the Company's products, the composition and ability of the current management team, an evaluation or benchmark of the Company's competition, the current business climate in the marketplace, the illiquid nature of the common stock, the effect of the rights and preferences of the holders of the Company's convertible preferred stock, and the prospects of a liquidity event, among others. Subsequent to the completion of the IPO, the Company uses the closing price of its common stock as reported on the Nasdaq Global Select Market on the applicable date of grant to determine the fair value of the shares of common stock underlying stock options.

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The assumptions used in the Black-Scholes option-pricing model were as follows:

	Year Ended December 31,		
	2017	2016	2015
Risk-free interest rate	2.0%–2.2%	1.1%–1.5%	1.4%–2.0%
Expected term (in years)	6.0–6.2	4.7–6.2	5.6–6.2
Expected volatility	33.0%–38.5%	34.2%–40.4%	41.3%–52.5%
Expected dividend yield	0.0%	0.0%	0.0%

Stock Options

A summary of option activity under the 2003 Plan, the 2011 Plan and the 2017 Plan for the year ended December 31, 2017 is as follows:

	Number of Shares	Weighted- Average Exercise Price	Weighted- Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding at January 1, 2017	14,407	\$ 3.64	6.79	\$123,844
Granted	1,886	12.28		
Exercised	(182)	1.99		
Forfeited	(532)	8.04		
Outstanding at December 31, 2017	15,579	\$ 4.55	6.18	\$205,717
Options exercisable at December 31, 2017	11,530	\$ 2.87	5.38	\$171,656
Vested or expected to vest at December 31, 2017	15,337	\$ 4.46	6.14	\$203,992

The weighted-average grant-date fair value of options granted during the years ended December 31, 2017, 2016 and 2015 was \$4.74, \$3.71 and \$2.75 per share, respectively. Cash proceeds received upon the exercise of options were \$274, \$594 and \$226 during the years ended December 31, 2017, 2016 and 2015, respectively. The intrinsic value of stock options exercised during the years ended December 31, 2017, 2016 and 2015 was \$1,915, \$5,001 and \$720, respectively. The aggregate intrinsic value is calculated as the difference between the exercise price of the stock options and the fair value of the Company's common stock for those stock options that had exercise prices lower than the fair value of the Company's common stock.

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Restricted Stock Units

On January 31, 2017 and May 15, 2017, the Company granted 176 and 15 RSUs, respectively, under the 2011 Plan. On December 15, 2017, the Company granted 35 RSUs under the 2017 Plan. On March 26, 2016 and January 23, 2015, the Company granted 244 and 2,103 RSUs, respectively, under the 2011 Plan. The RSUs vest ratably over a one- to four-year period from the date of grant. The grant-date fair value of each RSU award is being recorded as stock-based compensation expense on a straight-line basis, net of estimated forfeitures, over the requisite service period for the RSUs, which is generally one to four years. The fair value of each RSU on date of grant is the estimated fair value of the underlying common stock on the date of the grant. A summary of RSU activity under the 2011 Plan and the 2017 Plan for the year ended December 31, 2017 is as follows:

	Number of Shares	Weighted-Average Grant Date Fair Value	Aggregate Fair Value
Unvested balance at January 1, 2017	1,398	\$ 4.92	
Granted	226	12.29	
Vested	(728)	4.54	\$ 8,908
Unvested balance at December 31, 2017	<u>896</u>	\$ 7.09	

The Company withheld 310 and 37 shares of common stock in settlement of employee tax withholding obligations due upon the vesting of RSUs during the years ended December 31, 2017 and 2016, respectively. The Company had no RSUs that vested during the year ended December 31, 2015.

Stock Appreciation Rights

In January 2017, the Company granted 110 SARs that allow the holder the right, upon exercise, to receive in cash the amount of the difference between the fair value of the Company's common stock at the date of exercise and the price of the underlying common stock at the date of grant of each SAR. The price of the underlying common stock on the date of grant was \$12.24 per share and the grant-date fair value was \$4.52 per SAR. The SARs vest over a four-year period from the date of grant and expire ten years from the date of grant. As of December 31, 2017, 240 SARs were outstanding and 68 were unvested. As of December 31, 2017, there were 172 SARs exercisable and the fair value of each SAR was \$12.96 per SAR. The fair value of the SAR liability as of December 31, 2017 and 2016 was \$2,155 and \$1,195, respectively, (see Note 6) and was included in accrued expenses and other current liabilities in the accompanying consolidated balance sheets.

Stock-Based Compensation Expense

The Company recorded stock-based compensation expense of \$9,136, \$8,304 and \$7,321 during the years ended December 31, 2017, 2016 and 2015, respectively, which is based on the number of stock options, RSUs and SARs ultimately expected to vest. As of December 31, 2017, there was \$16,896 of unrecognized compensation cost related to outstanding stock options, RSUs and SARs, which is expected to be recognized over a weighted-average period of 2.65 years.

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Stock-based compensation expense related to stock options, RSUs and SARs for the years ended December 31, 2017, 2016 and 2015 was classified in the consolidated statements of operations and comprehensive income as follows:

	Year Ended December 31,		
	2017	2016	2015
Cost of revenue	\$ 306	\$ 237	\$ 143
Research and development expenses	2,864	2,306	1,843
Sales and marketing expenses	1,112	1,147	775
General and administrative expenses	4,854	4,614	4,560
	<u>\$9,136</u>	<u>\$8,304</u>	<u>\$7,321</u>

13. Net Income (Loss) per Share

Basic and diluted net income (loss) per share attributable to common stockholders was calculated as follows:

	Year Ended December 31,		
	2017	2016	2015
Numerator:			
Net income	\$ 88,500	\$ 88,668	\$ 67,921
Cumulative dividends on convertible preferred stock	(5,674)	(5,884)	(5,884)
Dividends declared on convertible preferred stock	(70,977)	(117,903)	—
Undistributed earnings allocated to participating securities	—	—	(34,735)
Net income (loss) attributable to common stockholders, basic	11,849	(35,119)	27,302
Undistributed earnings reallocated to dilutive potential common shares	—	—	3,100
Net income (loss) attributable to common stockholders, diluted	<u>\$ 11,849</u>	<u>\$ (35,119)</u>	<u>\$ 30,402</u>
Denominator:			
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders, basic	35,359	32,864	31,740
Dilutive effect of stock options	9,141	—	6,332
Dilutive effect of restricted stock units	472	—	737
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders, diluted	<u>44,972</u>	<u>32,864</u>	<u>38,809</u>
Net income (loss) per share attributable to common stockholders:			
Basic	<u>\$ 0.34</u>	<u>\$ (1.07)</u>	<u>\$ 0.86</u>
Diluted	<u>\$ 0.26</u>	<u>\$ (1.07)</u>	<u>\$ 0.78</u>

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

The following potential common shares, presented based on amounts outstanding at each period end, were excluded from the computation of diluted net income (loss) per share attributable to common stockholders for the periods presented because including them would have been anti-dilutive:

	Year Ended December 31,		
	2017	2016	2015
Convertible preferred stock (on an as-converted basis)	—	40,382	40,382
Options to purchase common stock	2,281	14,407	1,649
Unvested restricted stock units	35	1,398	—

14. Segment Information

The Company operates as one operating segment. Operating segments are defined as components of an enterprise for which separate financial information is regularly evaluated by the Company's chief operating decision maker, or decision-making group, in deciding how to allocate resources and assess performance. The Company has determined that its chief operating decision maker is its President and Chief Executive Officer. The Company's chief operating decision maker reviews the Company's financial information on a consolidated basis for purposes of allocating resources and assessing financial performance. Since the Company operates as one operating segment, all required financial segment information can be found in these consolidated financial statements.

The following table summarizes the Company's revenue based on the customer's location, as determined by the customer's shipping address:

	Year Ended December 31,		
	2017	2016	2015
North America:			
United States	\$ 143,540	\$ 105,318	\$ 54,365
Canada	58,316	78,623	153
Total North America	201,856	183,941	54,518
Latin America:			
Mexico	8,380	18,631	66,991
Other	31,967	28,683	20,391
Total Latin America	40,347	47,314	87,382
Europe, Middle East and Africa:			
Belgium	7,321	2,502	30,794
Other	54,137	42,703	44,973
Total Europe, Middle East and Africa	61,458	45,205	75,767
Asia-Pacific	47,914	39,668	54,783
Total revenue⁽¹⁾	\$ 351,575	\$ 316,128	\$ 272,450

(1) Other than the United States, Mexico, Belgium and Canada, no individual countries represented 10% or more of the Company's total revenue for any of the periods presented.

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

The Company's property and equipment, net by location was as follows:

	December 31,	
	2017	2016
United States	\$24,903	\$21,984
China	2,612	2,305
Other	1,848	1,393
Total property and equipment, net	<u>\$29,363</u>	<u>\$25,682</u>

15. Related Parties***Transactions Involving Liberty Global Ventures Holding B.V. and its Affiliates***

Liberty Global Ventures Holding B.V. is a principal stockholder of the Company through its ownership of common stock. Affiliates of Liberty Global Ventures Holding B.V. ("Liberty Global Affiliates") are customers of the Company. During the years ended December 31, 2017, 2016 and 2015, the Company recognized revenue of \$39,370, \$31,737 and \$46,069, respectively, from transactions with Liberty Global Affiliates and amounts received in cash from Liberty Global Affiliates totaled \$38,273, \$29,143 and \$37,012, respectively. As of December 31, 2017 and 2016, amounts due from Liberty Global Affiliates totaled \$13,367 and \$15,619, respectively.

Consulting Agreement with Bill Styslinger

In March 2012, the Company entered into a consulting agreement with Bill Styslinger, a member of its board of directors, for the provision of sales management, corporate strategy and advisory services, which was initially scheduled to expire on January 31, 2014. The Company extended the term of the consulting agreement on two occasions, and the consulting agreement expired on December 31, 2016. During the years ended December 31, 2016 and 2015, the Company recognized sales and marketing expenses of \$323 and \$441, respectively, and paid Mr. Styslinger \$459 and \$542, respectively, for his services under this consulting agreement. No amounts were due to Mr. Styslinger as of December 31, 2016.

In connection with Mr. Styslinger's services as a consultant, in May 2012, the Company granted Mr. Styslinger stock options for the purchase of 600 shares of common stock, at an exercise price of \$1.69 per share, which vested as to one-third of the shares under the award on February 1, 2013 and in equal monthly installments thereafter for the following two years. The grant-date fair value of the award totaled \$527, which was recorded by the Company as stock-based compensation expense over the vesting period of the award. During the year ended December 31, 2015, the Company recognized sales and marketing expenses of \$15 related to these stock options. The Company recognized no sales and marketing expenses related to these stock options during the year ended December 31, 2016.

In connection with special dividends declared by the Company's board of directors in November 2014, June 2016, December 2016, May 2017 and November 2017 (see Note 10), the board of directors also approved cash payments to be made to holders of the Company's stock options, SARs and RSUs in accordance with the provisions of the Company's equity incentive plans. In connection with the special dividends declared in November 2014 and June 2016, the Company paid Mr. Styslinger \$12 and \$150 as equitable adjustments in the years ended December 31, 2015 and 2016, respectively. In connection with the special dividends declared in December 2016, June 2017 and November 2017, the Company paid Mr. Styslinger \$1,075 as equitable adjustments in the year ended December 31, 2017.

CASA SYSTEMS, INC.**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**
(Amounts in thousands, except per share amounts)

In addition, during the year ended December 31, 2017, the Company recognized general and administrative expenses of \$205 and paid Mr. Styslinger \$205 for his services as a non-employee director. As of December 31, 2017, no amount was due to Mr. Styslinger for his services as a non-employee director.

Employment of Rongke Xie

Rongke Xie, who serves as Deputy General Manager of Guangzhou Casa Communication Technology LTD (“Casa China”), a subsidiary of the Company, is the sister of Lucy Xie, the Company’s Senior Vice President of Operations and a member of the Company’s board of directors. Casa China paid Rongke Xie \$160, \$140 and \$140 in total compensation in the years ended December 31, 2017, 2016 and 2015, respectively, for her services as an employee.

16. Commitments and Contingencies***Operating Leases***

The Company leases manufacturing, warehouse and office space in the United States, China, Spain and Ireland under non-cancelable operating leases that expire in 2021, 2019, 2022 and 2026, respectively. The Ireland lease provides the Company the right to terminate in 2021. Rent expense for the years ended December 31, 2017, 2016 and 2015 was \$933, \$572 and \$773, respectively. Rent expense is recorded on a straight-line basis, and, as a result, as of December 31, 2017 and 2016, the Company had a deferred rent liability of \$258 and \$130, respectively, which is included in accrued expenses and other current liabilities in the accompanying consolidated balance sheets.

Future minimum lease payments under non-cancelable operating leases as of December 31, 2017 were as follows:

<u>Year Ending December 31,</u>	
2018	\$ 857
2019	602
2020	595
2021	402
2022	5
	<u>\$2,461</u>

Indemnification

The Company has, in the ordinary course of business, agreed to defend and indemnify certain customers against third-party claims asserting infringement of certain intellectual property rights, which may include patents, copyrights, trademarks or trade secrets.

As permitted under Delaware law, the Company indemnifies its officers, directors and employees for certain events or occurrences that happen by reason of their relationship with or position held at the Company.

As of December 31, 2017 and 2016, the Company had not experienced any losses related to these indemnification obligations and no material claims were outstanding. The Company does not expect significant claims related to these indemnification obligations and, consequently, concluded that the fair value of these obligations is negligible, and no related liabilities were recorded in its consolidated financial statements.

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

Litigation

From time to time, and in the ordinary course of business, the Company may be subject to various claims, charges and litigation. As of December 31, 2017, the Company did not have any pending claims, charges or litigation that it expects would have a material adverse effect on its consolidated financial position, results of operations or cash flows.

17. Employee Benefit Plan

The Company has a Section 401(k) defined contribution savings plan for its employees. The plan covers substantially all employees in the United States who meet minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pre-tax basis, subject to certain limitations. Company contributions to the plan may be made at the discretion of the board of directors. Effective January 1, 2014, the Company commenced matching contributions in the amount of 50% of the employee's contributions of up to 6% of eligible wages. The Company made matching contributions to the plan of \$1,484, \$1,313 and \$977 in the years ended December 31, 2017, 2016 and 2015, respectively.

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

18. Selected Quarterly Financial Information (Unaudited)

The following tables set forth selected unaudited quarterly consolidated statements of income data for each of the quarters in the years ended December 31, 2017 and 2016:

	Three Months Ended							
	Dec. 31, 2017	Sept. 30, 2017	June 30, 2017	Mar. 31, 2017	Dec. 31, 2016	Sept. 30, 2016	June 30, 2016	Mar. 31, 2016
	(in thousands)							
Revenue:								
Product	\$ 106,741	\$ 84,196	\$ 55,750	\$ 65,209	\$ 87,460	\$ 58,553	\$ 56,777	\$ 76,433
Service	11,221	10,063	10,875	7,520	11,766	9,995	8,148	6,996
Total revenue	<u>117,962</u>	<u>94,259</u>	<u>66,625</u>	<u>72,729</u>	<u>99,226</u>	<u>68,548</u>	<u>64,925</u>	<u>83,429</u>
Cost of revenue:								
Product	25,673	23,824	19,909	19,132	20,547	19,263	22,427	27,103
Services	1,336	1,442	938	1,257	2,494	2,578	1,997	1,408
Total cost of revenue	<u>27,009</u>	<u>25,266</u>	<u>20,847</u>	<u>20,389</u>	<u>23,041</u>	<u>21,841</u>	<u>24,424</u>	<u>28,511</u>
Gross profit	<u>90,953</u>	<u>68,993</u>	<u>45,778</u>	<u>52,340</u>	<u>76,185</u>	<u>46,707</u>	<u>40,501</u>	<u>54,918</u>
Operating expenses:								
Research and development	\$ 16,765	\$ 15,217	\$ 14,227	\$ 14,468	\$ 11,997	\$ 12,451	\$ 12,573	\$ 12,189
Sales and marketing	12,619	8,747	8,156	10,080	8,825	9,520	9,125	8,644
General and administrative	7,176	4,866	4,526	4,995	4,683	4,520	4,665	4,347
Total operating expenses	<u>36,560</u>	<u>28,830</u>	<u>26,909</u>	<u>29,543</u>	<u>25,505</u>	<u>26,491</u>	<u>26,363</u>	<u>25,180</u>
Income from operations	54,393	40,163	18,869	22,797	50,680	20,216	14,138	29,738
Other income (expense), net	(3,546)	(3,552)	(2,766)	(3,540)	(32)	356	278	319
Income before provision for (benefit from) income taxes	50,847	36,611	16,103	19,257	50,648	20,572	14,416	30,057
Provision for (benefit from) income taxes	21,984	12,288	(1,057)	1,103	10,797	5,471	2,412	8,345
Net income	<u>\$ 28,863</u>	<u>\$ 24,323</u>	<u>\$ 17,160</u>	<u>\$ 18,154</u>	<u>\$ 39,851</u>	<u>\$ 15,101</u>	<u>\$ 12,004</u>	<u>\$ 21,712</u>
Net income (loss) per share attributable to common stockholders:								
Basic	\$ 0.10	\$ 0.31	\$ (0.95)	\$ 0.23	\$ (1.69)	\$ 0.19	\$ (0.40)	\$ 0.28
Diluted	\$ 0.08	\$ 0.27	\$ (0.95)	\$ 0.20	\$ (1.69)	\$ 0.16	\$ (0.40)	\$ 0.25



At Casa Systems, our mission is to fundamentally transform the way service delivery networks work to enable our customers to deliver ultra-fast speeds and enhanced digital experiences.

Three core business values drive our success.

Visionary Design



Visionary design to enable next-generation networks before our competitors

High Performance



High performance of our solutions and our people

Customer Focus



Dedicated to helping our customers succeed

Home to Innovation



PART II**INFORMATION NOT REQUIRED IN PROSPECTUS****Item 13. Other Expenses of Issuance and Distribution.**

The following table indicates the expenses to be incurred in connection with the offering described in this registration statement, other than underwriting discounts and commissions, all of which will be paid by us. All amounts are estimated except the SEC registration fee and the Financial Industry Regulatory Authority, Inc., or FINRA, filing fee.

	<u>Amount</u>
SEC registration fee	\$ 31,970
FINRA filing fee	39,018
Legal fees and expenses	480,000
Accountants' fees and expenses	200,000
Printing and engraving expenses	40,000
Transfer Agent's and registrar fees and expenses	9,800
Miscellaneous expenses	24,212
Total expenses	<u>\$ 825,000</u>

Item 14. Indemnification of Directors and Officers.

Section 102 of the General Corporation Law of the State of Delaware permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our restated certificate of incorporation provides that no director of the Registrant shall be personally liable to it or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the General Corporation Law of the State of Delaware prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the General Corporation Law of the State of Delaware provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he was or is a party or is threatened to be made a party to any threatened, ending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Our restated certificate of incorporation provides that we will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of us) by reason of the fact that he or she is or was, or has agreed to become, a director or

officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an “Indemnatee”), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnatee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful.

Our restated certificate of incorporation provides that we will indemnify any Indemnatee who was or is a party to an action or suit by or in the right of us to procure a judgment in our favor by reason of the fact that the Indemnatee is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys’ fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnatee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to us, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnatee has been successful, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys’ fees) actually and reasonably incurred in connection therewith. Expenses must be advanced to an Indemnatee under certain circumstances.

We have entered into indemnification agreements with each of our directors and executive officers. These indemnification agreements may require us, among other things, to indemnify each such director or executive officer for some expenses, including attorneys’ fees, judgments, fines and settlement amounts incurred by him or her in any action or proceeding arising out of his or her service as one of our directors or executive officers.

We maintain a general liability insurance policy that covers certain liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

In the underwriting agreement we enter into in connection with the sale of common stock being registered hereby, the underwriters will agree to indemnify, under certain conditions, us, our directors, our officers and persons who control us within the meaning of the Securities Act of 1933, as amended, against certain liabilities.

Item 15. Recent Sales of Unregistered Securities.

Set forth below is information regarding shares of capital stock issued by us since March 31, 2015, that were not registered under the Securities Act. Also included is the consideration received by us for such shares and information relating to the section of the Securities Act, or rule of the Securities and Exchange Commission, under which exemption from registration was claimed.

- (1) Under our 2011 Stock Incentive Plan, we granted stock options to purchase an aggregate of 4,940,935 shares of our common stock, with exercise prices ranging from \$6.49 to \$12.24 per share. 532,585 shares of common stock have been issued pursuant to the exercise of stock options for aggregate consideration of \$1,004,485.
- (2) Under our 2011 Stock Incentive Plan, we granted an aggregate of 435,560 restricted stock units to be settled in shares of our common stock to certain of our employees and we issued 1,329,945 shares of common stock upon the vesting of restricted stock units.

- (3) Under our 2011 Stock Incentive Plan, we granted an aggregate of 140,000 stock appreciation rights to be settled in cash to certain of our employees.
- (4) Under our 2003 Stock Incentive Plan, we issued 169,170 shares of common stock upon the exercise of stock options at a weighted-average exercise price of \$0.14 per share, for aggregate consideration of \$22,917.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions, or any public offering. The stock options and the common stock issued upon the exercise of such options, and the restricted stock units and the common stock issued upon the vesting of such restricted stock units described in paragraphs (1), (2) and (3) of this Item 15 were issued under our 2011 Stock Incentive Plan in reliance on the exemptions provided by Rule 701 and Regulation D promulgated under the Securities Act. The common stock issued upon the exercise of the stock options described in paragraph (4) of this Item 15 was issued under our 2003 Stock Incentive Plan in reliance on the exemption provided by Rule 701 promulgated under the Securities Act. Each of the recipients of securities in these transactions had adequate access, through employment, business or other relationships, to information about us. The sales of these securities were made without any general solicitation or advertising.

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits.

The exhibits to the registration statement of which this prospectus is a part are listed in the Exhibit Index attached hereto and incorporated by reference herein.

(b) Financial Statement Schedules.

No financial statement schedules have been submitted because they are not required or are not applicable or because the information required is included in the consolidated financial statements or the notes thereto.

Item 17. Undertakings.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned hereby undertakes that:

- (1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.
- (2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

EXHIBIT INDEX

Some of the agreements included as exhibits to this registration statement contain representations and warranties by the parties to the applicable agreement. These representations and warranties were made solely for the benefit of the other parties to the applicable agreement and (1) were not intended to be treated as categorical statements of fact, but rather as a way of allocating the risk to one of the parties if those statements prove to be inaccurate; (2) may have been qualified in such agreement by disclosures that were made to the other party in connection with the negotiation of the applicable agreement; (3) may apply contract standards of “materiality” that are different from “materiality” under the applicable securities laws; and (4) were made only as of the date of the applicable agreement or such other date or dates as may be specified in the agreement.

The Registrant acknowledges that, notwithstanding the inclusion of the foregoing cautionary statements, it is responsible for considering whether additional specific disclosures of material information regarding contractual provisions are required to make the statements in this registration statement not misleading.

Exhibit Number	Description of Exhibit	Incorporated by Reference				Filed Herewith
		Form	File No.	Date of Filing	Exhibit Number	
1.1	Form of Underwriting Agreement					*
3.1	Restated Certificate of Incorporation of the Registrant	8-K	001-38324	12/19/2017	3.1	
3.2	By-laws of the Registrant	8-K	001-38324	12/19/2017	3.2	
4.1	Specimen Stock Certificate evidencing the shares of common stock	S-1/A	333-221658	12/4/2017	4.1	
5.1	Opinion of Wilmer Cutler Pickering Hale and Dorr LLP					*
10.1	Form of Indemnification Agreement between the Registrant and its executive officers and directors	S-1	333-221658	11/17/2017	10.1	
10.2	2003 Stock Incentive Plan, as amended	S-1	333-221658	11/17/2017	10.2	
10.3	Form of Incentive Stock Option Agreement under 2003 Stock Incentive Plan	S-1	333-221658	11/17/2017	10.3	
10.4	Form of Nonstatutory Stock Option Agreement under 2003 Stock Incentive Plan	S-1	333-221658	11/17/2017	10.4	
10.5	Form of Restricted Stock Agreement under 2003 Stock Incentive Plan	S-1	333-221658	11/17/2017	10.5	
10.6	2011 Stock Incentive Plan, as amended	S-1	333-221658	11/17/2017	10.6	
10.7	Form of Incentive Stock Option Agreement under 2011 Stock Incentive Plan	S-1	333-221658	11/17/2017	10.7	
10.8	Form of Nonstatutory Stock Option Agreement under 2011 Stock Incentive Plan	S-1	333-221658	11/17/2017	10.8	
10.9	Form of Restricted Stock Agreement under 2011 Stock Incentive Plan	S-1	333-221658	11/17/2017	10.9	

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Exhibit Number	Description of Exhibit	Incorporated by Reference				
		Form	File No.	Date of Filing	Exhibit Number	Filed Herewith
10.10	Form of Restricted Stock Unit Agreement under 2011 Stock Incentive Plan	S-1	333-221658	11/17/2017	10.10	
10.11	Form of Stock Appreciation Rights Agreement under 2011 Stock Incentive Plan	S-1	333-221658	11/17/2017	10.11	
10.12	2017 Stock Incentive Plan	S-1	333-221658	11/17/2017	10.12	
10.13	Form of Stock Option Agreement under 2017 Stock Incentive Plan	S-1	333-221658	11/17/2017	10.13	
10.14	Form of Restricted Stock Unit Agreement under 2017 Stock Incentive Plan	S-1	333-221658	11/17/2017	10.14	
10.15	Offer Letter between the Registrant and Gary Hall, dated May 25, 2011	S-1	333-221658	11/17/2017	10.15	
10.16	Offer Letter between the Registrant and Abraham Pucheril, dated August 18, 2012	S-1	333-221658	11/17/2017	10.16	
10.17	Consulting Agreement between the Registrant and Bill Styslinger, dated March 5, 2012, as amended	S-1	333-221658	11/17/2017	10.17	
10.18	Mortgage, Security Agreement and Financing Statement, dated July 1, 2015, between Casa Properties LLC and Middlesex Savings Bank	S-1	333-221658	11/17/2017	10.18	
10.19	Registration Rights Agreement, dated April 26, 2010, between the Registrant and the investors party thereto	S-1	333-221658	11/17/2017	10.19	
10.20	Credit Agreement, dated as of December 20, 2016, by and among the Registrant and JPMorgan Chase Bank, N.A., as agent, and the other agents, arrangers and lenders party thereto	S-1	333-221658	11/17/2017	10.20	
10.21	Letters, dated as of February 1, 2017 and April 14, 2017, from the Registrant to the lenders party to the Credit Agreement	S-1	333-221658	11/17/2017	10.21	
10.22	Security Agreement, dated as of December 20, 2016, by and among the Registrant, each of the subsidiaries of the Registrant party thereto, and JPMorgan Chase Bank, N.A., as Collateral Agent	S-1	333-221658	11/17/2017	10.22	
10.23†	Master Purchase Agreement, dated October 31, 2013, between Time Warner Cable Enterprises LLC and Casa Systems, Inc., as amended	S-1	333-221658	11/17/2017	10.23	
10.24	Employment Agreement, dated November 17, 2017, by and between the Registrant and Jerry Guo	S-1	333-221658	11/17/2017	10.24	

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<u>Exhibit Number</u>	<u>Description of Exhibit</u>	<u>Incorporated by Reference</u>				<u>Filed Herewith</u>
		<u>Form</u>	<u>File No.</u>	<u>Date of Filing</u>	<u>Exhibit Number</u>	
10.25	Employment Agreement, dated November 17, 2017, by and between the Registrant and Lucy Xie	S-1	333-221658	11/17/2017	10.25	
10.26	Employment Agreement, dated November 17, 2017, by and between the Registrant and Weidong Chen	S-1	333-221658	11/17/2017	10.26	
21.1	Subsidiaries of the Registrant	S-1	333-221658	11/17/2017	21.1	
23.1	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm.					*
23.2	Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1)					*
24.1	Powers of Attorney (included on signature page)					*

† Confidential treatment has been granted as to certain portions, which portions have been omitted and filed separately with the Securities and Exchange Commission.

SIGNATURES

Pursuant to the requirements of the Securities Act, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the Town of Andover, Commonwealth of Massachusetts, on this 23rd day of April, 2018.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo

Jerry Guo

President, Chief Executive Officer and Chairman

SIGNATURES AND POWER OF ATTORNEY

We, the undersigned officers and directors of Casa Systems, Inc., hereby severally constitute and appoint Jerry Guo, Gary Hall and Todd Keebaugh, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him and in his name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement (and any other registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as full to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities held on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Jerry Guo</u> Jerry Guo	President, Chief Executive Officer and Chairman (Principal Executive Officer)	April 23, 2018
<u>/s/ Gary Hall</u> Gary Hall	Chief Financial Officer (Principal Financial and Accounting Officer)	April 23, 2018
<u>/s/ Lucy Xie</u> Lucy Xie	Senior Vice President of Operations and Director	April 23, 2018
<u>/s/ Weidong Chen</u> Weidong Chen	Chief Technology Officer and Director	April 23, 2018
<u>/s/ Bruce R. Evans</u> Bruce R. Evans	Director	April 23, 2018
<u>/s/ Daniel S. Mead</u> Daniel S. Mead	Director	April 23, 2018

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<u>Signature</u>		<u>Title</u>	<u>Date</u>
<div>/s/ Bill Styslinger</div> <div>Bill Styslinger</div>	Director		April 23, 2018
<div>/s/ Joseph S. Tibbetts, Jr.</div> <div>Joseph S. Tibbetts, Jr.</div>	Director		April 23, 2018

[•] Shares

CASA SYSTEMS, INC.

COMMON STOCK, PAR VALUE \$0.001 PER SHARE

UNDERWRITING AGREEMENT

[•], 2018

Morgan Stanley & Co. LLC
Barclays Capital Inc.

c/o Morgan Stanley & Co. LLC
1585 Broadway
New York, New York 10036

c/o Barclays Capital Inc.
745 Seventh Avenue
New York, New York 10019

Ladies and Gentlemen:

Certain stockholders of Casa Systems, Inc., a Delaware corporation (the “**Company**”) named in Schedule I hereto (the “**Selling Stockholders**” or the “**Sellers**”) severally propose to sell to the several Underwriters named in Schedule II hereto (the “**Underwriters**”), an aggregate of [•] shares of the common stock, par value \$0.001 per share of the Company (the “**Firm Shares**”), each Selling Stockholder selling the amount set forth opposite such Selling Stockholder’s name in Schedule I hereto under the heading “Firm Shares.”

The Selling Stockholders, severally and not jointly, also propose to sell to the several Underwriters not more than an additional [•] shares of the common stock, par value \$0.001 per share, of the Company (the “**Additional Shares**”) if and to the extent that you, as managers of the offering, shall have determined to exercise, on behalf of the Underwriters, the right to purchase such shares of common stock granted to the Underwriters in Section 3 hereof, each Seller selling such number of Additional Shares equal to the product obtained by multiplying (i) the total number of Additional Shares for which the Underwriters exercise their option pursuant to Section 3 hereof and (ii) a fraction, the numerator of which is the number of Additional Shares set forth opposite such Seller’s name in Schedule I hereto under the heading “Additional Shares” and the denominator of which is the total number of Additional Shares. The Firm Shares and the Additional Shares are hereinafter collectively referred to as the “**Shares**.” The shares of common stock, par value \$0.001 per share of the Company are hereinafter referred to as the “**Common Stock**.”

The Company has filed with the Securities and Exchange Commission (the “**Commission**”) a registration statement, including a prospectus, relating to the Shares. The registration statement as amended at the time it becomes effective, including the information (if any) deemed to be part of the registration statement at the time of effectiveness pursuant to Rule 430A under the Securities Act of 1933, as amended (the “**Securities Act**”), is hereinafter referred to as the “**Registration Statement**”; the prospectus in the form first used to confirm sales of Shares (or in the form first made available to the Underwriters by the Company to meet requests of purchasers pursuant to Rule 173 under the Securities Act) is hereinafter referred to as the “**Prospectus**.” If the Company has filed an abbreviated registration statement to register additional shares of Common Stock pursuant to Rule 462(b) under the Securities Act (the “**Rule 462 Registration Statement**”), then any reference herein to the term “**Registration Statement**” shall be deemed to include such Rule 462 Registration Statement.

For purposes of this Underwriting Agreement (this “**Agreement**”), “**free writing prospectus**” has the meaning set forth in Rule 405 under the Securities Act, “**Time of Sale Prospectus**” means the preliminary prospectus contained in the Registration Statement at the time of its effectiveness, together with the documents, orally communicated or written pricing information and free writing prospectuses, if any, set forth in Schedule III hereto, and “**broadly available road show**” means a “bona fide electronic road show” as defined in Rule 433(h)(5) under the Securities Act that has been made available without restriction to any person. As used herein, the terms “Registration Statement,” “preliminary prospectus,” “Time of Sale Prospectus” and “Prospectus” shall include the documents, if any, incorporated by reference therein as of the date hereof.

1. *Representations and Warranties of the Company.* The Company represents and warrants to and agrees with each of the Underwriters that:

(a) The Registration Statement has become effective; no stop order suspending the effectiveness of the Registration Statement is in effect, and no proceedings for such purpose are pending before or, to the knowledge of the Company, threatened by the Commission.

(b) (i) The Registration Statement, when it became effective, did not contain and, as amended or supplemented, if applicable, will not, as of the date of such amendment or supplement, contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading, (ii) the Registration Statement and the Prospectus comply and, as amended or supplemented, if applicable, will comply as of the date of such amendment or supplement, in all material respects with the Securities Act and the applicable rules and regulations of the Commission thereunder, (iii) the Time of Sale Prospectus does not, and at the time of each sale of the Shares in connection with the offering when the Prospectus is not yet available to prospective purchasers and at the Closing Date (as defined in Section 5), the Time of Sale Prospectus, as then amended or supplemented by the Company, if applicable, will not, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, (iv) each broadly available road show, if any, when considered together with the Time of Sale Prospectus, does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading and (v) the Prospectus does not contain and, as amended or supplemented, if applicable, will not, as of the date of such amendment or supplement, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, except that the representations and warranties set forth in this paragraph do not apply to statements or omissions in the Registration Statement, the Time of Sale Prospectus or the Prospectus based upon information relating to any Underwriter furnished to the Company in writing by such Underwriter through you expressly for use therein (the “**Underwriter Information**”).

(c) The Company is not an “ineligible issuer” in connection with the offering pursuant to Rules 164, 405 and 433 under the Securities Act. Any free writing prospectus that the Company is required to file pursuant to Rule 433(d) under the Securities Act has been, or will be, filed with the Commission in accordance with the requirements of the Securities Act and the applicable rules and regulations of the Commission thereunder. Each free writing prospectus that the Company has filed, or is required to file, pursuant to Rule 433(d) under the Securities Act or that was prepared by or on behalf of or used or referred to by the Company complies or will comply in all material respects with the requirements of the Securities Act and the applicable rules and regulations of the Commission thereunder. Except for the free writing prospectuses, if any, identified in Schedule III hereto, and electronic road shows, if any, each furnished to you before first use, the Company has not prepared, used or referred to, and will not, without your prior consent, prepare, use or refer to, any free writing prospectus.

(d) The Company has been duly incorporated, is validly existing as a corporation in good standing under the laws of the State of Delaware, has the corporate power and authority to own its property and to conduct its business as described in the Time of Sale Prospectus and the Prospectus and is duly qualified to transact business and is in good standing in each jurisdiction in which the conduct of its business or its ownership or leasing of property requires such qualification, except to the extent that the failure to be so qualified or be in good standing would not have a material adverse effect on the Company and its subsidiaries, taken as a whole.

(e) Each subsidiary of the Company has been duly incorporated, is validly existing as a corporation in good standing under the laws of the jurisdiction of its organization (to the extent that such concepts are applicable under such laws), has the corporate power and authority to own its property and to conduct its business as described in the Time of Sale Prospectus and the Prospectus and is duly qualified to transact business and is in good standing in each jurisdiction in which the conduct of its business or its ownership or leasing of property requires such qualification (to the extent that such concepts are applicable under such laws), except where the failure to be so qualified or be in good standing would not have a material adverse effect on the Company and its subsidiaries, taken as a whole; all of the issued shares of capital stock of each subsidiary of the Company have been duly and validly authorized and issued, are fully paid and non-assessable and are owned directly by the Company, free and clear of all liens, encumbrances, equities or claims.

(f) This Agreement has been duly authorized, executed and delivered by the Company.

(g) The authorized capital stock of the Company conforms as to legal matters to the description thereof contained in each of the Time of Sale Prospectus and the Prospectus.

(h) The shares of Common Stock (including the Shares to be sold by the Selling Stockholders) outstanding prior to the issuance of the Shares to be sold by the Sellers have been duly authorized and are validly issued, fully paid and non-assessable, and the transfer of the Shares by the Selling Stockholders will not be subject to any preemptive or similar rights. The Shares to be issued pursuant to the exercise of vested stock options granted to certain Selling Stockholders have been duly authorized and, when issued, delivered and paid for in accordance with the terms applicable to such stock options, will be validly issued, fully paid and non-assessable, and the issuance to or transfer by the Selling Stockholders of such Shares will not be subject to any preemptive or similar rights.

(i) The execution and delivery by the Company of, and the performance by the Company of its obligations under, this Agreement will not contravene any provision of applicable law or the certificate of incorporation or by-laws of the Company or any agreement or other instrument binding upon the Company or any of its subsidiaries that is material to the Company and its subsidiaries, taken as a whole, or any judgment, order or decree of any governmental body, agency or court having jurisdiction over the Company or any subsidiary, and no consent, approval, authorization or order of, or qualification with, any governmental body or agency is required for the performance by the Company of its obligations under this Agreement, except such as may be required by the securities or Blue Sky laws of the various states in connection with the offer and sale of the Shares, or except where the failure to obtain such consent, approval, authorization or order would not have a material adverse effect on the Company's ability to consummate the transactions contemplated by this Agreement.

(j) There has not occurred any material adverse change, or any development involving a prospective material adverse change, in the condition, financial or otherwise, or in the earnings, business, properties or operations of the Company and its subsidiaries, taken as a whole, from that set forth in the Time of Sale Prospectus.

(k) There are no legal or governmental proceedings pending or, to the knowledge of the Company, threatened to which the Company or any of its subsidiaries is a party or to which any of the properties of the Company or any of its subsidiaries is subject (i) other than proceedings accurately described in all material respects in the Time of Sale Prospectus and the Prospectus and proceedings that would not have a material adverse effect on the Company and its subsidiaries, taken as a whole, or on the power or ability of the Company to perform its obligations under this Agreement or to consummate the transactions contemplated by the Time of Sale Prospectus and the Prospectus or (ii) that are required to be described in the Registration Statement or the Prospectus and are not so described in all material respects; and there are no statutes, regulations, contracts or other documents that are required to be described in the Registration Statement or the Prospectus or to be filed as exhibits to the Registration Statement that are not described in all material respects or filed as required.

(l) Each preliminary prospectus filed as part of the Registration Statement as originally filed or as part of any amendment thereto, or filed pursuant to Rule 424 under the Securities Act, complied when so filed in all material respects with the Securities Act and the applicable rules and regulations of the Commission thereunder.

(m) The Company is not, and after giving effect to the offering and sale of the Shares and the application of the proceeds thereof as described in the Time of Sale Prospectus and the Prospectus will not be, required to register as an “investment company” as such term is defined in the Investment Company Act of 1940, as amended.

(n) The Company and its subsidiaries (i) are in compliance with any and all applicable foreign, federal, state and local laws and regulations relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants (“**Environmental Laws**”), (ii) have received all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses and (iii) are in compliance with all terms and conditions of any such permit, license or approval, except where such noncompliance with Environmental Laws, failure to receive required permits, licenses or other approvals or failure to comply with the terms and conditions of such permits, licenses or approvals would not, singly or in the aggregate, have a material adverse effect on the Company and its subsidiaries, taken as a whole.

(o) There are no costs or liabilities associated with Environmental Laws (including, without limitation, any capital or operating expenditures required for clean-up, closure of properties or compliance with Environmental Laws or any permit, license or approval, any related constraints on operating activities and any potential liabilities to third parties) which would, singly or in the aggregate, have a material adverse effect on the Company and its subsidiaries, taken as a whole.

(p) Except as described in the Time of Sale Prospectus, there are no contracts, agreements or understandings between the Company and any person granting such person the right to require the Company to file a registration statement under the Securities Act with respect to any securities of the Company or to require the Company to include such securities with the Shares registered pursuant to the Registration Statement.

(q) (i) None of the Company or its subsidiaries or affiliates, or any director, officer, or employee thereof, or, to the Company’s knowledge, any agent or representative of the Company or of any of its subsidiaries or affiliates, has taken or will take any action in furtherance of an offer, payment, promise to pay, or authorization or approval of the payment, giving or receipt of money, property, gifts, entertainment or anything else of value, directly or indirectly, to any government official (including any officer or employee of a government or government-owned or controlled entity or of a public international organization, or any person acting in an official capacity for or on behalf of any of the foregoing, or any political party or party official or candidate for political office) (“**Government Official**”) in order to influence official action, or to any person in violation of any applicable anti-corruption laws; (ii) the Company and its subsidiaries and affiliates have conducted their businesses in compliance with applicable anti-corruption and anti-bribery laws and have instituted, maintained and enforced and

will continue to maintain and enforce policies and procedures reasonably designed to promote and achieve compliance with such laws and with the representations and warranties contained herein; (iii) the Company and its subsidiaries and affiliates have not violated and are not in violation of any provision of the Foreign Corrupt Practices Act of 1977, as amended, any applicable law or regulation implementing the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions or the Bribery Act 2010 of the United Kingdom or any other applicable anti-bribery or anti-corruption law; (iv) the Company and its subsidiaries and affiliates have not made, offered, or taken an act in furtherance of any bribe, unlawful rebate, payoff, influence payment, kickback or other unlawful payment; and (v) neither the Company nor its subsidiaries will use, directly or indirectly, the proceeds of the offering in furtherance of an offer, payment, promise to pay, or authorization of the payment or giving of money, or anything else of value, to any person in violation of any applicable anti-corruption or anti-bribery laws.

(r) The operations of the Company and its subsidiaries are and have been conducted at all times in compliance in all material respects with all applicable financial recordkeeping and reporting requirements, including those of the Bank Secrecy Act, as amended by Title III of the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 (USA PATRIOT Act), and the applicable anti-money laundering statutes of jurisdictions where the Company and its subsidiaries conduct business, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “**Anti-Money Laundering Laws**”), and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Anti-Money Laundering Laws is pending or, to the best knowledge of the Company, threatened.

(s) (i) None of the Company, any of its subsidiaries, or any director, officer, or employee thereof, or, to the Company’s knowledge, any agent, affiliate or representative of the Company or any of its subsidiaries, is an individual or entity (“**Person**”) that is, or is owned or controlled by one or more Persons that are:

(A) the subject of any sanctions administered or enforced by the U.S. Department of Treasury’s Office of Foreign Assets Control (“**OFAC**”), the United Nations Security Council (“**UNSC**”), the European Union (“**EU**”), Her Majesty’s Treasury (“**HMT**”), or other relevant sanctions authority (collectively, “**Sanctions**”), or

(B) located, organized or resident in a country or territory that is the subject of Sanctions (including, without limitation, Crimea, Cuba, Iran, North Korea and Syria).

(ii) The Company will not, directly or indirectly, use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other Person:

(A) to fund or facilitate any activities or business of or with any Person or in any country or territory that, at the time of such funding or facilitation, is the subject of Sanctions; or

(B) in any other manner that will result in a violation of Sanctions by any Person (including any Person participating in the offering, whether as underwriter, advisor, investor or otherwise).

(iii) For the past 5 years, the Company and its subsidiaries have not knowingly engaged in, are not now knowingly engaged in, and will not engage in, any dealings or transactions with any Person, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

(t) Subsequent to the respective dates as of which information is given in each of the Registration Statement, the Time of Sale Prospectus and the Prospectus, (i) the Company and its subsidiaries have not incurred any material liability or obligation, direct or contingent, nor entered into any material transaction; (ii) the Company has not purchased any of its outstanding capital stock (other than from its employees or other service providers in connection with the termination of their service pursuant to plans or agreements described in all material respects in each of the Registration Statement, the Time of Sale Prospectus and the Prospectus, respectively), nor declared, paid or otherwise made any dividend or distribution of any kind on its capital stock other than ordinary and customary dividends; and (iii) there has not been any material change in the capital stock (other than the exercise of equity awards or grants of equity awards or forfeiture of equity awards outstanding as of such respective dates as of which information is given in each of the Registration Statement, the Time of Sale Prospectus and the Prospectus, in each case granted pursuant to the equity compensation plans described in the Time of Sale Prospectus), short-term debt or long-term debt of the Company and its subsidiaries, except in each case as described in each of the Registration Statement, the Time of Sale Prospectus and the Prospectus, respectively.

(u) The Company and its subsidiaries have good and marketable title in fee simple to all real property and good and marketable title to all personal property owned by them which is material to the business of the Company and its subsidiaries, taken as a whole, in each case free and clear of all liens, encumbrances and defects except such as are described in the Time of Sale Prospectus or such as do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and its subsidiaries; and any real property and buildings held under lease by the Company and its subsidiaries are held by them under valid, subsisting and, to the Company's knowledge, enforceable leases with such exceptions as are not material and do not materially interfere with the use made and proposed to be made of such property and buildings by the Company and its subsidiaries.

(v) The Company and its subsidiaries own or possess, or can acquire on commercially reasonable terms, all material patents, patent rights, licenses, inventions, copyrights, know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures), trademarks, service marks and trade names currently employed by them in connection with the business now operated by them, except where the failure to own or possess or acquire any of the foregoing would not result in a material adverse effect on the Company and its subsidiaries, taken as a whole, and neither the Company nor any of its subsidiaries has received any written notice of infringement of or conflict with asserted rights of others with respect to any of the foregoing which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would have a material adverse effect on the Company and its subsidiaries, taken as a whole.

(w) No material labor dispute with the employees of the Company or any of its subsidiaries exists, or, to the knowledge of the Company, is imminent; and the Company is not aware of any existing, threatened or imminent labor disturbance by the employees of any of its principal suppliers, manufacturers or contractors that would have a material adverse effect on the Company and its subsidiaries, taken as a whole.

(x) The Company and its subsidiaries, taken as a whole, are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as are prudent and customary in the businesses in which they are engaged; neither the Company nor any of its subsidiaries has been refused any insurance coverage sought or applied for; and neither the Company nor any of its subsidiaries has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not have a material adverse effect on the Company and its subsidiaries, taken as a whole.

(y) The Company and its subsidiaries possess all certificates, authorizations and permits issued by the appropriate federal, state or foreign regulatory authorities necessary to conduct their respective businesses, except where the failure to obtain such certificates, authorizations or permits, individually or in the aggregate, would not have a material adverse effect on the Company and its subsidiaries, taken as a whole, and neither the Company nor any of its subsidiaries has received any notice of proceedings relating to the revocation or modification of any such certificate, authorization or permit which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would have a material adverse effect on the Company and its subsidiaries, taken as a whole.

(z) The Company and each of its subsidiaries maintain a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles in the United States ("U.S. GAAP") and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded

accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Since the end of the Company's most recent audited fiscal year, there has been (i) no material weakness in the Company's internal control over financial reporting (whether or not remediated) and (ii) no change in the Company's internal control over financial reporting that has materially adversely affected, or is reasonably likely to materially adversely affect, the Company's internal control over financial reporting.

(aa) Except as disclosed in "Risk Factors" in the Time of Sale Prospectus, the Company maintains an effective system of "disclosure controls and procedures" (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended (the "**Exchange Act**") that complies with the requirements of the Exchange Act and that has been designed to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Commission's rules and forms, including controls and procedures designed to ensure that such information is accumulated and communicated to the Company's management as appropriate to allow timely decisions regarding required disclosure. The Company has carried out evaluations of the effectiveness of its disclosure controls and procedures as required by Rule 13a-15 under the Exchange Act through December 31, 2017.

(bb) Except as described in the Time of Sale Prospectus, the Company has not sold, issued or distributed any shares of Common Stock during the six-month period preceding the date hereof, including any sales pursuant to Rule 144A under, or Regulation D or S of, the Securities Act, other than shares issued pursuant to employee benefit plans, qualified stock option plans or other employee compensation plans or pursuant to outstanding options, rights or warrants or in connection with the Company's initial public offering of Common Stock.

(cc) The Company and each of its subsidiaries have filed all federal, state, local and foreign tax returns required to be filed through the date of this Agreement or have requested extensions thereof (except where the failure to file would not, individually or in the aggregate, have a material adverse effect on the Company and its subsidiaries, taken as a whole) and have paid all taxes required to be paid thereon (except for cases in which the failure to file or pay would not have a material adverse effect on the Company and its subsidiaries, taken as a whole, or, except as currently being contested in good faith and for which reserves required by U.S. GAAP have been created in the financial statements of the Company), and no tax deficiency has been determined adversely to the Company or any of its subsidiaries which has had (nor does the Company nor any of its subsidiaries have any written notice or knowledge of any tax deficiency which could reasonably be expected to be determined adversely to the Company or its subsidiaries and which could reasonably be expected to have) a material adverse effect on the Company and its subsidiaries, taken as a whole.

(dd) From the time of initial confidential submission of the Registration Statement to the Commission (or, if earlier, the first date on which the Company engaged directly or through any person authorized to act on its behalf in any Testing-the-Waters Communication) through the date hereof, the Company has been and is an “emerging growth company,” as defined in Section 2(a) of the Securities Act (an “**Emerging Growth Company**”). “**Testing-the-Waters Communication**” means any oral or written communication with potential investors undertaken in reliance on Section 5(d) of the Securities Act.

(ee) The Company (i) has not alone engaged in any Testing-the-Waters Communication other than Testing-the-Waters Communications with the consent of Morgan Stanley & Co. LLC (“**Morgan Stanley**”) and (ii) has not authorized anyone other than Morgan Stanley to engage in Testing-the-Waters Communications. The Company reconfirms that Morgan Stanley has been authorized to act on its behalf in undertaking Testing-the-Waters Communications. The Company has not distributed any Written Testing-the-Waters Communications. “**Written Testing-the-Waters Communication**” means any Testing-the-Waters Communication that is a written communication within the meaning of Rule 405 under the Securities Act.

(ff) As of the time of each sale of the Shares in connection with the offering when the Prospectus is not yet available to prospective purchasers, none of (A) the Time of Sale Prospectus, (B) any free writing prospectus, when considered together with the Time of Sale Prospectus, and (C) any individual Written Testing-the-Waters Communication, when considered together with the Time of Sale Prospectus, included, includes or will include an untrue statement of a material fact or omitted, omits or will omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(gg) Nothing has come to the attention of the Company that has caused it to reasonably believe that the industry-related and market-related data included in the Time of Sale Prospectus and the Prospectus is not based on or derived from sources that are reliable and accurate in all material respects.

(hh) The financial statements (including the related notes thereto) of the Company and its consolidated subsidiaries included in the Registration Statement, the Time of Sale Prospectus and the Prospectus comply in all material respects with the applicable requirements of the Securities Act and present fairly in all material respects the financial position of the Company and its consolidated subsidiaries as of the dates indicated and the results of their operations and the changes in their cash flows for the periods specified; such financial statements have been prepared in conformity with U.S. GAAP applied on a consistent basis throughout the periods covered thereby; and the other financial information included in the Registration Statement, the Time of Sale Prospectus and the Prospectus has been derived from the accounting records of the Company and its consolidated subsidiaries and presents fairly in all material respects the information shown thereby.

(ii) No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) contained in the Registration Statement, the Time of Sale Prospectus or the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

(jj) PricewaterhouseCoopers LLP (“**PWC**”) who has certified certain financial statements of the Company and its subsidiaries, is an independent registered public accounting firm with respect to the Company and its subsidiaries within the applicable rules and regulations adopted by the Commission and the Public Company Accounting Oversight Board (United States) and as required by the Securities Act.

(kk) Except as described in the Time of Sale Prospectus, there are (and prior to the Closing Date, will be) no debt securities or preferred stock issued or guaranteed by the Company or any of its subsidiaries that are rated by a “nationally recognized statistical rating organization”, as such term is defined in Section 3(a)(62) of the Exchange Act.

(ll) With respect to the stock options (the “**Stock Options**”) granted pursuant to the stock-based compensation plans of the Company and its subsidiaries (each a “**Company Stock Plan**”), each grant of a Stock Option was made in compliance in all material respects in accordance with the terms of the applicable Company Stock Plan and all applicable laws and regulatory rules or requirements, including all federal securities laws.

(mm) There is and has been no failure on the part of the Company or any of the Company’s directors or officers, in their capacities as such, to comply with any applicable provision of the Sarbanes-Oxley Act of 2002, as amended and the rules and regulations promulgated in connection therewith (the “**Sarbanes-Oxley Act**”), including Section 402 related to loans.

2. *Representations and Warranties of the Selling Stockholders.* Each Selling Stockholder, severally and not jointly, represents and warrants to and agrees with each of the Underwriters that:

(a) This Agreement has been duly authorized, executed and delivered by or on behalf of such Selling Stockholder.

(b) The execution and delivery by such Selling Stockholder of, and the performance by such Selling Stockholder of its obligations under, this Agreement, any Custody Agreement signed by such Selling Stockholder and the Company, as such Selling Stockholder’s custodian, relating to the deposit of the Shares to be sold by such Selling Stockholder (the “**Custody Agreement**”) and any Power of Attorney appointing individuals as such Selling Stockholder’s attorneys-in-fact to the extent set forth therein, relating to the transactions contemplated hereby and by the Registration Statement (the “**Power of Attorney**”) (to the extent such Selling Stockholder is a party to a Custody Agreement and a Power of Attorney) will not contravene (i) any provision of applicable law, (ii) the certificate of incorporation or by-laws of such Selling Stockholder (if such Selling Stockholder is a corporation), (iii) any agreement or other instrument binding upon such Selling Stockholder or (iv) any judgment, order or decree of any governmental body, agency or court having jurisdiction over such Selling Stockholder and no consent, approval, authorization or order of, or qualification with, any governmental body or agency is required for the performance by such Selling Stockholder of its obligations

under this Agreement or the Custody Agreement or the Power of Attorney of such Selling Stockholder (to the extent such Selling Stockholder is a party to a Custody Agreement and a Power of Attorney), except such as may be required by the securities or Blue Sky laws of the various states in connection with the offer and sale of the Shares, and except, in the case of clauses (i), (iii) and (iv), for contraventions that would not adversely affect the ability of such Selling Stockholder to perform its obligations hereunder and under the Custody Agreement and the Power of Attorney (to the extent such Selling Stockholder is a party to a Custody Agreement and a Power of Attorney).

(c) Such Selling Stockholder has, and on the Closing Date will have, valid title to, or a valid “security entitlement” within the meaning of Section 8-501 of the New York Uniform Commercial Code (the “UCC”) in respect of, the Shares to be sold by such Selling Stockholder free and clear of all security interests, claims, liens, equities or other encumbrances and the legal right and power, and all authorization and approval required by law, to enter into this Agreement, the Custody Agreement and the Power of Attorney (to the extent such Selling Stockholder is a party to a Custody Agreement and a Power of Attorney) and to sell, transfer and deliver the Shares to be sold by such Selling Stockholder or a security entitlement in respect of such Shares.

(d) The Custody Agreement and the Power of Attorney have been duly authorized, executed and delivered by such Selling Stockholder and are valid and binding agreements of such Selling Stockholder (to the extent such Selling Stockholder is a party to a Custody Agreement and a Power of Attorney).

(e) Upon payment for the Shares to be sold by such Selling Stockholder pursuant to this Agreement, delivery of such Shares, as directed by the Underwriters, to Cede & Co. (“Cede”) or such other nominee as may be designated by The Depository Trust Company (“DTC”), registration of such Shares in the name of Cede or such other nominee and the crediting of such Shares on the books of DTC to securities accounts of the Underwriters (assuming that neither DTC nor any such Underwriter has notice of any adverse claim (within the meaning of Section 8-105 of the UCC) to such Shares), (A) DTC shall be a “protected purchaser” of such Shares within the meaning of Section 8-303 of the UCC, (B) under Section 8-501 of the UCC, the Underwriters will acquire a valid security entitlement in respect of such Shares and (C) no action based on any “adverse claim”, within the meaning of Section 8-102 of the UCC, to such Shares may be asserted against the Underwriters with respect to such security entitlement; for purposes of this representation, such Selling Stockholder may assume that when such payment, delivery and crediting occur, (x) such Shares will have been registered in the name of Cede or another nominee designated by DTC, in each case on the Company’s share registry in accordance with its certificate of incorporation, bylaws and applicable law, (y) DTC will be registered as a “clearing corporation” within the meaning of Section 8-102 of the UCC and (z) appropriate entries to the accounts of the several Underwriters on the records of DTC will have been made pursuant to the UCC.

(f) Such Selling Stockholder is not prompted by any material information concerning the Company or its subsidiaries which is not set forth in the Time of Sale Prospectus and the Prospectus to sell its Shares pursuant to this Agreement.

(g) (i) The Registration Statement, when it became effective, did not contain and, as amended or supplemented, if applicable, will not, as of the date of such amendment or supplement, contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading, (ii) the Time of Sale Prospectus does not, and at the time of each sale of the Shares in connection with the offering when the Prospectus is not yet available to prospective purchasers and at the Closing Date (as defined in Section 5), the Time of Sale Prospectus, as then amended or supplemented by the Company, if applicable, will not, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, and (iii) the Prospectus does not contain and, as amended or supplemented, if applicable, will not contain, as of the date of such amendment or supplement, any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, except that the representations and warranties set forth in this paragraph 2(g) apply only to statements or omissions in the Registration Statement, Time of Sale Prospectus or the Prospectus made in reliance upon and in conformity with information relating to such Selling Stockholder furnished to the Company in writing by or on behalf of such Selling Stockholder expressly for use therein, it being understood and agreed that the only information furnished by such Selling Stockholder consists of the name of such Selling Stockholder, the number of Shares offered by such Selling Stockholder, address of such Selling Stockholder, other information with respect to such Selling Stockholder (excluding percentages) which appears in the Registration Statement, Time of Sale Prospectus or the Prospectus in the table (and corresponding footnotes) under the caption “Principal and Selling Stockholders”, and the terms of any expected disgorgement of profits pursuant to Section 16(b) of the Exchange Act by such Selling Stockholder (such Selling Stockholder’s “**Selling Stockholder Information**”).

(j) Such Selling Stockholder represents and warrants that it is not (i) an employee benefit plan subject to Title I of the Employee Retirement Income Security Act of 1974, as amended (“**ERISA**”), (ii) a plan or account subject to Section 4975 of the Internal Revenue Code of 1986, as amended, or (iii) an entity deemed to hold “plan assets” of any such plan or account under Section 3(42) of ERISA, 29 C.F.R. 2510.3-101, or otherwise.

3. *Agreements to Sell and Purchase.* Each Seller, severally and not jointly, hereby agrees to sell to the several Underwriters, and each Underwriter, upon the basis of the representations and warranties herein contained, but subject to the conditions hereinafter stated, agrees, severally and not jointly, to purchase from such Seller at \$[•] a share (the “**Purchase Price**”) the number of Firm Shares (subject to such adjustments to eliminate fractional shares as you may determine) that bears the same proportion to the number of Firm Shares to be sold by such Seller as the number of Firm Shares set forth in Schedule II hereto opposite the name of such Underwriter bears to the total number of Firm Shares.

(a) On the basis of the representations and warranties contained in this Agreement, and subject to its terms and conditions, the Selling Stockholders, severally and not jointly, agree to sell to the Underwriters up to such number of Additional Shares, set forth opposite the Seller's name in Schedule I hereto under the heading "Additional Shares" (each Seller selling such number of Additional Shares equal to the product obtained by multiplying (i) the total number of Additional Shares for which the Underwriters exercise their option pursuant to this Section 3 and (ii) a fraction, the numerator of which is the number of Additional Shares set forth opposite such Seller's name in Schedule I hereto under the heading "Additional Shares" and the denominator of which is the total number of Additional Shares) and the Underwriters shall have the right to purchase, severally and not jointly, up to an aggregate of [\bullet] Additional Shares at the Purchase Price, provided, however, that the amount paid by the Underwriters for any Additional Shares shall be reduced by an amount per share equal to any dividends declared by the Company and payable on the Firm Shares but not payable on such Additional Shares. You may exercise this right on behalf of the Underwriters in whole or from time to time in part by giving written notice to the Company and the Selling Stockholders not later than 30 days after the date of this Agreement. Any exercise notice shall specify the number of Additional Shares to be purchased by the Underwriters and the date on which such shares are to be purchased. Each purchase date must be at least one business day after the written notice is given and may not be earlier than the Closing Date nor later than ten business days after the date of such notice. On each day, if any, that Additional Shares are to be purchased (an "**Option Closing Date**"), each Underwriter agrees, severally and not jointly, to purchase the number of Additional Shares (subject to such adjustments to eliminate fractional shares as you may determine) that bears the same proportion to the total number of Additional Shares to be purchased on such Option Closing Date as the number of Firm Shares set forth in Schedule II hereto opposite the name of such Underwriter bears to the total number of Firm Shares.

(b) The Company hereby agrees that, without the prior written consent of Morgan Stanley on behalf of the Underwriters, it will not, during the period ending 90 days after the date of the Prospectus (the "**Restricted Period**"), (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock beneficially owned (as such term is used in Rule 13d-3 under the Exchange Act) or any other securities so owned convertible into or exercisable or exchangeable for Common Stock, or publicly disclose the intention to make any offer, sale, pledge or disposition, or (2) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Common Stock, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise or (3) file any registration statement with the Commission relating to the offering of any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock.

(c) The restrictions contained in the preceding paragraph shall not apply to (a) the Shares to be sold hereunder, (b) the issuance by the Company of shares of Common Stock upon the conversion of a security outstanding on the date hereof or the exercise of an option or warrant (or other issuance of shares) pursuant to equity plans

disclosed in the Time of Sale Prospectus, (c) the issuance by the Company of shares or options to purchase shares of Common Stock (or the grant of restricted stock units or other rights to acquire shares) pursuant to the Company's equity plans disclosed in the Time of Sale Prospectus, (d) the filing by the Company of a registration statement on Form S-8 or a successor form thereto pursuant to equity plans disclosed in the Time of Sale Prospectus, (e) the entry into an agreement providing for the issuance by the Company of shares of Common Stock or any security convertible into or exercisable for shares of Common Stock in connection with the acquisition by the Company or any of its subsidiaries of the securities, business, property or other assets of another person or entity or pursuant to an employee benefit plan assumed by the Company in connection with such acquisition, and the issuance of any such securities pursuant to any such agreement; provided that in the case of clause (e), the aggregate number of shares of Common Stock that the Company may sell or issue pursuant to clause (e) shall not exceed 10% of the total number of shares of the Company's Common Stock issued and outstanding immediately following the completion of the transactions contemplated by this agreement and each recipient enters into a lock-up agreement substantially in the form attached as **Exhibit A** hereto, (f) the repurchase by the Company of shares of Common Stock issued pursuant to an employee benefit plan disclosed in the Time of Sale Prospectus or pursuant to agreements pursuant to which such Shares were issued as disclosed in the Time of Sale Prospectus or (g) the establishment or amendment by the Company of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of Common Stock, *provided that* (i) such plan does not provide for the transfer of Common Stock during the Restricted Period and (ii) to the extent a public announcement or filing under the Exchange Act, if any, is required of or voluntarily made by or on behalf of the Selling Stockholder or the Company regarding the establishment of such plan, such announcement or filing shall include a statement to the effect that no transfer of Common Stock may be made under such plan during the Restricted Period.

4. *Terms of Public Offering.* The Sellers are advised by you that the Underwriters propose to make a public offering of their respective portions of the Shares as soon after the Registration Statement and this Agreement have become effective as in your judgment is advisable. The Sellers are further advised by you that the Shares are to be offered to the public initially at \$[•] a share (the "**Public Offering Price**") and to certain dealers selected by you at a price that represents a concession not in excess of \$[•] a share under the Public Offering Price.

5. *Payment and Delivery.* Payment for the Firm Shares to be sold by each Seller shall be made to such Seller in Federal or other funds immediately available in New York City against delivery of such Firm Shares for the respective accounts of the several Underwriters at 10:00 a.m., New York City time, on [•], 2018, or at such other time on the same or such other date, not later than [•], as shall be designated in writing by you. The time and date of such payment are hereinafter referred to as the "**Closing Date**."

Payment for any Additional Shares to be sold by each Seller shall be made to such Seller in Federal or other funds immediately available in New York City against delivery of such Additional Shares for the respective accounts of the several Underwriters at 10:00 a.m., New York City time, on the date specified in the corresponding notice described in Section 3 or at such other time on the same or on such other date, in any event not later than [•], 2018, as shall be designated in writing by you.

The Firm Shares and Additional Shares shall be registered in such names and in such denominations as you shall request in writing not later than one full business day prior to the Closing Date or the applicable Option Closing Date, as the case may be. The Firm Shares and Additional Shares shall be delivered to you on the Closing Date or an Option Closing Date, as the case may be, for the respective accounts of the several Underwriters. The Purchase Price payable by the Underwriters shall be reduced by (i) any transfer taxes paid by, or on behalf of, the Underwriters in connection with the transfer of the Shares to the Underwriters duly paid and (ii) any withholding required by law.

6. *Conditions to the Underwriters' Obligations.* The several obligations of the Sellers to sell the Shares to the Underwriters and the several obligations of the Underwriters to purchase and pay for the Shares on the Closing Date (and the Option Closing Date, if applicable) are subject to the condition that the Registration Statement shall have become effective not later than [•:•] [A./P.]M. (New York City time) on the date hereof.

The several obligations of the Underwriters are subject to the following further conditions:

(a) Subsequent to the execution and delivery of this Agreement and prior to the Closing Date:

(i) no order suspending the effectiveness of the Registration Statement shall be in effect, and no proceeding for such purpose or pursuant to Section 8A under the Securities Act shall be pending before or threatened by the Commission; the Prospectus and each issuer free writing prospectus shall have been timely filed with the Commission under the Securities Act (in the case of an issuer free writing prospectus, to the extent required by Rule 433 under the Securities Act) and in accordance with Section 6(a) hereof; and all requests by the Commission for additional information shall have been complied with to the reasonable satisfaction of Morgan Stanley and Barclays Capital Inc. (“**Barclays**” and together with Morgan Stanley, the “**Representatives**”);

(ii) the representations and warranties of the Company contained herein shall be true and correct on the date hereof and on and as of the Closing Date; and the statements of the Company and its officers made in any certificates delivered pursuant to this Agreement shall be true and correct on and as of the Closing Date;

(iii) the representations and warranties of the Selling Stockholders contained in this Agreement shall be true and correct in all material respects as of the Closing Date and the Selling Stockholders shall have complied in all material respects with all of the agreements and satisfied in all material respects all of the conditions on their part to be performed or satisfied hereunder on or before the Closing Date;

(iv) there shall not have occurred any downgrading, nor shall any notice have been given of any intended or potential downgrading or of any review for a possible change that does not indicate the direction of the possible change, in the rating accorded any of the securities of the Company or any of its subsidiaries by any “nationally recognized statistical rating organization,” as such term is defined in Section 3(a)(62) of the Exchange Act; and

(v) there shall not have occurred any change, or any development involving a prospective change, in the condition, financial or otherwise, or in the earnings, business, properties or operations of the Company and its subsidiaries, taken as a whole, from that set forth in the Time of Sale Prospectus that, in your judgment, is material and adverse and that makes it, in your judgment, impracticable to market the Shares on the terms and in the manner contemplated in the Time of Sale Prospectus.

(b) The Underwriters shall have received on the Closing Date a certificate, dated the Closing Date and signed by an executive officer of the Company, to the effect set forth in Section 6(a)(i) above and to the effect that the representations and warranties of the Company contained in this Agreement are true and correct as of the Closing Date and that the Company has complied with all of the agreements and satisfied all of the conditions on its part to be performed or satisfied hereunder on or before the Closing Date.

The officer signing and delivering such certificate may rely upon the best of his or her knowledge as to proceedings threatened.

(c) The Underwriters shall have received on the Closing Date an opinion of Wilmer Cutler Pickering Hale and Dorr LLP (“**WilmerHale**”), outside counsel for the Company, dated the Closing Date, in form and substance satisfactory to Morgan Stanley and Barclays.

(d) The Underwriters shall have received on the Closing Date an opinion of Arthur Cox (“**Arthur Cox**”), special Irish counsel for the Company dated the Closing Date, in form and substance satisfactory to Morgan Stanley and Barclays.

(e) The Underwriters shall have received on the Closing Date an opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation (“**WSGR**”), counsel for the Underwriters, dated the Closing Date, in form and substance satisfactory to Morgan Stanley and Barclays.

(f) The Underwriters shall have received on the Closing Date an opinion of Van Doorne N.V. (“**Van Doorne**”), special Dutch counsel for the Company dated the Closing Date, in form and substance satisfactory to Morgan Stanley and Barclays.

(g) The Underwriters shall have received on the Closing Date opinions of the respective counsel for each of the Selling Stockholders, as identified in Schedule I hereto (the “**Selling Stockholder Counsel**”), dated the Closing Date, in form and substance satisfactory to Morgan Stanley and Barclays.

With respect to Section 6(c) and 6(e), WilmerHale and WSGR, may state that their opinions and beliefs are based upon their participation in the preparation of the Registration Statement, the Time of Sale Prospectus and the Prospectus and any amendments or supplements thereto and review and discussion of the contents thereof, but are without independent check or verification, except as specified. With respect to Section 6(g) above, the Selling Stockholder Counsel may rely upon an opinion or opinions of counsel for any Selling Stockholders and, with respect to factual matters and to the extent such counsel deems appropriate, upon the representations of each Selling Stockholder contained herein and in the Custody Agreement and Power of Attorney of such Selling Stockholder (to the extent such Selling Stockholder is a party to a Custody Agreement and a Power of Attorney) and in other documents and instruments; *provided* that (A) each such counsel for the Selling Stockholders is satisfactory to your counsel, (B) a copy of each opinion so relied upon is delivered to you and is in form and substance satisfactory to your counsel, (C) copies of such Custody Agreements and Powers of Attorneys (to the extent such Selling Stockholders are parties to Custody Agreements and Powers of Attorney) shall be delivered to you and shall be in form and substance satisfactory to your counsel and (D) the Selling Stockholder Counsel shall state in their respective opinions that they are justified in relying on each such other opinion.

The opinions of WilmerHale, Arthur Cox, Van Doorne, and the Selling Stockholder Counsel described in Sections 6(c), 6(d), 6(f) and 6(g) above shall be rendered to the Underwriters at the request of the Company or one or more of the Selling Stockholders, as the case may be, and shall so state therein.

(h) The Underwriters shall have received, on each of the date hereof and the Closing Date, a letter dated the date hereof or the Closing Date, as the case may be, in form and substance satisfactory to the Underwriters, from PWC, independent public accountants, containing statements and information of the type ordinarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and certain financial information contained in the Registration Statement, the Time of Sale Prospectus and the Prospectus; *provided* that the letter delivered on the Closing Date shall use a "cut-off date" not earlier than the date hereof.

(i) The "lock-up" agreements, each substantially in the form of Exhibit A hereto, between you and certain stockholders, including all of the Selling Stockholders, optionholders, officers and directors of the Company relating to sales and certain other dispositions of shares of Common Stock or certain other securities, delivered to you on or before the date hereof, shall be in full force and effect on the Closing Date.

(j) The Underwriters shall have received, on each of the date hereof and the Closing Date, a certificate dated the date hereof or the Closing Date, as the case may be, in form and substance satisfactory to the Underwriters, signed by the Chief Financial Officer of the Company.

(k) The Underwriters shall have received on the Closing Date a certificate, dated the Closing Date and signed on behalf of the Selling Stockholders by their representative(s) or, if applicable, attorney(s)-in-fact, to the effect that the representations and warranties of the Selling Stockholders contained in this Agreement are true and

correct as of the Closing Date in all material respects (except to the extent already qualified by materiality, in which case such representations and warranties shall be subject to accuracy in all respects) and that the Selling Stockholders have complied in all material respects with all of the agreements and satisfied all of the conditions on their part to be performed or satisfied hereunder on or before the Closing Date.

(l) On or prior to the Closing Date, the Company shall have furnished to the Representatives such further certificates and documents as the Representatives may reasonably request.

(m) The several obligations of the Underwriters to purchase Additional Shares hereunder are subject to the delivery to you on the applicable Option Closing Date of the following:

(i) a certificate, dated the Option Closing Date and signed by an executive officer of the Company, confirming that the certificate delivered on the Closing Date pursuant to Section 6(b) hereof remains true and correct as of such Option Closing Date;

(ii) an opinion of WilmerHale, outside counsel for the Company, dated the Option Closing Date, relating to the Additional Shares to be purchased on such Option Closing Date and otherwise to the same effect as the opinion required by Section 6(c) hereof;

(iii) an opinion of Arthur Cox, special Irish counsel for the Company, dated the Option Closing Date, relating to the Additional Shares to be purchased on such Option Closing Date and otherwise to the same effect as the opinion required by Section 6(d) hereof;

(iv) an opinion of WSGR, counsel for the Underwriters, dated the Option Closing Date, relating to the Additional Shares to be purchased on such Option Closing Date and otherwise to the same effect as the opinion required by Section 6(e) hereof;

(v) an opinion of Van Doorne, special Dutch counsel for the Company, dated the Option Closing Date, relating to the Additional Shares to be purchased on such Option Closing Date and otherwise to the same effect as the opinion required by Section 6(f) hereof;

(vi) opinions of the Selling Stockholder Counsel, outside counsel for the Selling Stockholders, dated the Option Closing Date, relating to the Additional Shares to be purchased on such Option Closing Date and otherwise to the same effect as the opinion required by Section 6(g) hereof;

(vii) a letter dated the Option Closing Date, in form and substance satisfactory to the Underwriters, from PWC, independent public accountants, substantially in the same form and substance as the letter furnished to the Underwriters pursuant to Section 6(h) hereof; *provided* that the letter delivered on the Option Closing Date shall use a “**cut-off date**” not earlier than three business days prior to such Option Closing Date;

(viii) a certificate dated the Option Closing Date, substantially in the same form and substance as the certificate furnished to the Underwriters pursuant to Section 6(j) hereof, signed by the Chief Financial Officer of the Company;

(ix) a certificate, dated the Option Closing Date and signed on behalf of the Selling Stockholders by their representative(s) or, if applicable, attorney(s)-in-fact, confirming that the certificate delivered on the Closing Date pursuant to Section 6(k) hereof remains true and correct as of such Option Closing Date; and

(x) such other documents as the Representatives may reasonably request with respect to the good standing of the Company, the due authorization and issuance of the Additional Shares to be sold on such Option Closing Date and other matters related to the issuance of such Additional Shares.

7. *Covenants of the Company.* The Company covenants with each Underwriter as follows:

(a) To furnish to you, without charge, [•] signed copies of the Registration Statement (including exhibits thereto) and for delivery to each other Underwriter a conformed copy of the Registration Statement (without exhibits thereto) and to furnish to you in New York City, without charge, prior to 10:00 a.m. New York City time on the business day next succeeding the date of this Agreement and during the period mentioned in Section 7(e) or 7(f) below, as many copies of the Time of Sale Prospectus, the Prospectus and any supplements and amendments thereto or to the Registration Statement as you may reasonably request.

(b) Before amending or supplementing the Registration Statement, the Time of Sale Prospectus or the Prospectus, to furnish to you a copy of each such proposed amendment or supplement and not to file any such proposed amendment or supplement to which you reasonably object, and to file with the Commission within the applicable period specified in Rule 424(b) under the Securities Act any prospectus required to be filed pursuant to such Rule.

(c) To furnish to you a copy of each proposed free writing prospectus to be prepared by or on behalf of, used by, or referred to by the Company and not to use or refer to any proposed free writing prospectus to which you reasonably object.

(d) Not to take any action that would result in an Underwriter or the Company being required to file with the Commission pursuant to Rule 433(d) under the Securities Act a free writing prospectus prepared by or on behalf of the Underwriter that the Underwriter otherwise would not have been required to file thereunder.

(e) If the Time of Sale Prospectus is being used to solicit offers to buy the Shares at a time when the Prospectus is not yet available to prospective purchasers and any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Time of Sale Prospectus in order to make the statements therein, in the light of the circumstances, not misleading, or if any event shall occur or condition exist as a result of which the Time of Sale Prospectus conflicts with the information contained in the Registration Statement then on file, or if, in the opinion of counsel for the Underwriters, it is necessary to amend or supplement the Time of Sale Prospectus to comply with applicable law, forthwith to prepare, file with the Commission and furnish, at its own expense, to the Underwriters and to any dealer upon request, either amendments or supplements to the Time of Sale Prospectus so that the statements in the Time of Sale Prospectus as so amended or supplemented will not, in the light of the circumstances when the Time of Sale Prospectus is delivered to a prospective purchaser, be misleading or so that the Time of Sale Prospectus, as amended or supplemented, will no longer conflict with the Registration Statement, or so that the Time of Sale Prospectus, as amended or supplemented, will comply with applicable law.

(f) If, during such period after the first date of the public offering of the Shares as in the opinion of counsel for the Underwriters the Prospectus (or in lieu thereof the notice referred to in Rule 173(a) of the Securities Act) is required by law to be delivered in connection with sales by an Underwriter or dealer, any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Prospectus in order to make the statements therein, in the light of the circumstances when the Prospectus (or in lieu thereof the notice referred to in Rule 173(a) of the Securities Act) is delivered to a purchaser, not misleading, or if, in the opinion of counsel for the Underwriters, it is necessary to amend or supplement the Prospectus to comply with applicable law, forthwith to prepare, file with the Commission and furnish, at its own expense, to the Underwriters and to the dealers (whose names and addresses you will furnish to the Company) to which Shares may have been sold by you on behalf of the Underwriters and to any other dealers upon request, either amendments or supplements to the Prospectus so that the statements in the Prospectus as so amended or supplemented will not, in the light of the circumstances when the Prospectus (or in lieu thereof the notice referred to in Rule 173(a) of the Securities Act) is delivered to a purchaser, be misleading or so that the Prospectus, as amended or supplemented, will comply with applicable law.

(g) To endeavor to qualify the Shares for offer and sale under the securities or Blue Sky laws of such jurisdictions as you shall reasonably request; provided that the Company shall not be required to (i) qualify as a foreign corporation or other entity or as a dealer in securities in any such jurisdiction where it would not otherwise be required to so qualify, (ii) file any general consent to service of process in any such jurisdiction or (iii) subject itself to taxation in any such jurisdiction if it is not otherwise so subject.

(h) To make generally available to the Company's security holders and to you as soon as practicable an earnings statement covering a period of at least twelve months beginning with the first fiscal quarter of the Company occurring after the date of this Agreement which shall satisfy the provisions of Section 11(a) of the Securities Act and the rules and regulations of the Commission thereunder.

(i) The Company will promptly notify the Representatives if the Company ceases to be an Emerging Growth Company at any time prior to the later of (a) completion of the distribution of the Shares within the meaning of the Securities Act and (b) completion of the Restricted Period referred to in Section 3.

(j) If at any time following the distribution of any Written Testing-the-Waters Communication there occurred or occurs an event or development as a result of which such Written Testing-the-Waters Communication as then amended or supplemented included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing at that subsequent time, not misleading, the Company will promptly notify Morgan Stanley and will promptly amend or supplement, at its own expense, such Written Testing-the-Waters Communication to eliminate or correct such untrue statement or omission.

(k) The Company will not take, directly or indirectly, any action designed to or that would reasonably be expected to cause or result in any stabilization or manipulation of the price of the Shares.

(l) If any Selling Stockholder is not a U.S. person for U.S. federal income tax purposes, the Company will deliver to each Underwriter (or its agent), on or before the Closing Date, (i) a certificate with respect to the Company's status as a "United States real property holding corporation," dated not more than thirty (30) days prior to the Closing Date, as described in Treasury Regulations Sections 1.897-2(h) and 1.1445-2(c)(3), and (ii) proof of delivery to the Internal Revenue Service ("IRS") of the required notice, as described in Treasury Regulations 1.897-2(h)(2).

8. *Covenants of the Sellers.* Each Seller, severally and not jointly, covenants with each Underwriter as follows:

(a) Such Seller will deliver to each Underwriter (or its agent), prior to or at the Closing Date, a properly completed and executed IRS Form W-9 or an IRS Form W-8, as appropriate, together with all required attachments to such form.

(b) Such Seller will deliver a 'lock-up' agreement substantially in the form of Exhibit A.

(c) Such Seller will not take, directly or indirectly, any action designed to or that would reasonably be expected to cause or result in any stabilization or manipulation of the price of the Shares.

9. *Expenses.*

(a) Whether or not the transactions contemplated in this Agreement are consummated or this Agreement is terminated, the Company agrees to pay or cause to be paid all expenses incident to the performance of the Company's and Sellers' obligations under this Agreement, including: (i) the fees, disbursements and expenses of the Company's counsel, the Company's accountants in connection with the registration and delivery of the Shares

under the Securities Act and all other fees or expenses in connection with the preparation and filing of the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, the Prospectus, any free writing prospectus prepared by or on behalf of, used by, or referred to by the Company and amendments and supplements to any of the foregoing, including all printing costs associated therewith, and the mailing and delivering of copies thereof to the Underwriters and dealers, in the quantities hereinabove specified, (ii) all costs and expenses related to the transfer and delivery of the Shares to the Underwriters, including any transfer or other taxes payable thereon, (iii) the cost of printing or producing any Blue Sky or legal investment memorandum in connection with the offer and sale of the Shares under state securities laws and all expenses in connection with the qualification of the Shares for offer and sale under state securities laws as provided in Section 7(g) hereof, including filing fees and the reasonable fees and disbursements of counsel for the Underwriters in connection with such qualification and in connection with the Blue Sky or legal investment memorandum, (iv) all filing fees and the reasonable fees and disbursements of counsel to the Underwriters incurred in connection with the review and qualification of the offering of the Shares by the Financial Industry Regulatory Authority; provided that such fees and expenses payable by the Company pursuant to subsections (iii) and (iv) are not to exceed \$30,000, (v) the cost of printing certificates representing the Shares, (vi) the costs and charges of any transfer agent, registrar or depository, (vii) the costs and expenses of the Company relating to investor presentations on any "road show" undertaken in connection with the marketing of the offering of the Shares, including, without limitation, expenses associated with the preparation or dissemination of any electronic road show, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants engaged in connection with the road show presentations with the prior approval of the Company and travel and lodging expenses of the representatives and officers of the Company and any such consultants, (viii) the document production charges and expenses associated with printing this Agreement and (ix) all other costs and expenses incident to the performance of the obligations of the Company and the Sellers hereunder for which provision is not otherwise made in this Section. It is understood, however, that except as provided in this Section, Section 11 entitled "Indemnity and Contribution" and the last paragraph of Section 13 below, the Underwriters will pay all of their costs and expenses, including fees and disbursements of their counsel, stock transfer taxes payable on resale of any of the Shares by them and any advertising expenses connected with any offers they may make.

(b) Each Selling Stockholder, severally, agrees with the Company and the several Underwriters that such Selling Stockholder shall pay all underwriting discounts and commissions and all transfer taxes on the sale by the Selling Stockholders of the Shares to the Underwriters, the fees and disbursements of any counsel to such Selling Stockholder (other than the fees and expenses of one counsel for the Selling Stockholders to be paid for by the Company) and all other costs and expenses incident to the performance of the obligations of the Selling Stockholders hereunder for which provision is not otherwise made in this Section.

The provisions of this Section shall not supersede or otherwise affect any agreement that the Sellers and the Company may otherwise have for the allocation of such expenses among themselves.

10. *Covenants of the Underwriters.* Each Underwriter severally covenants with the Company not to take any action that would result in the Company being required to file with the Commission under Rule 433(d) a free writing prospectus prepared by or on behalf of such Underwriter that otherwise would not be required to be filed by the Company thereunder, but for the action of the Underwriter.

11. *Indemnity and Contribution.*

(a) The Company agrees to indemnify and hold harmless each Underwriter, its directors and officers and each person, if any, who controls any Underwriter within the meaning of either Section 15 of the Securities Act or Section 20 of the Exchange Act, and each affiliate of any Underwriter within the meaning of Rule 405 under the Securities Act from and against any and all losses, claims, damages and liabilities (including, without limitation, any legal or other expenses reasonably incurred in connection with defending or investigating any such action or claim) caused by any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or any amendment thereof, any preliminary prospectus, the Time of Sale Prospectus or any amendment or supplement thereto, any issuer free writing prospectus as defined in Rule 433(h) under the Securities Act, any Company information that the Company has filed, or is required to file, pursuant to Rule 433(d) under the Securities Act, any “road show” as defined in Rule 433(h) under the Securities Act (a “**road show**”), or the Prospectus or any amendment or supplement thereto, or any Written Testing-the-Waters Communication or caused by any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, except insofar as such losses, claims, damages or liabilities are caused by any such untrue statement or omission or alleged untrue statement or omission based upon any Underwriter Information.

(b) Each Selling Stockholder agrees, severally and not jointly, to indemnify and hold harmless each Underwriter, its directors and officers and each person, if any, who controls any Underwriter within the meaning of either Section 15 of the Securities Act or Section 20 of the Exchange Act, and each affiliate of any Underwriter within the meaning of Rule 405 under the Securities Act from and against any and all losses, claims, damages and liabilities (including, without limitation, any legal or other expenses reasonably incurred in connection with defending or investigating any such action or claim) caused by any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or any amendment thereof, any preliminary prospectus, the Time of Sale Prospectus or any amendment or supplement thereto, any issuer free writing prospectus as defined in Rule 433(h) under the Securities Act, any Company information that the Company has filed, or is required to file, pursuant to Rule 433(d) under the Securities Act, any road show, or the Prospectus or any amendment or supplement thereto, or any Written Testing-the-Waters Communication or caused by any omission or alleged omission to state therein a material fact required to be stated therein

or necessary to make the statements therein not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made therein in reliance upon and in conformity with such Selling Stockholder's Selling Stockholder Information.

(c) Each Underwriter agrees, severally and not jointly, to indemnify and hold harmless the Company, the Selling Stockholders, the directors of the Company, the officers of the Company who sign the Registration Statement and each person, if any, who controls the Company or any Selling Stockholder within the meaning of either Section 15 of the Securities Act or Section 20 of the Exchange Act from and against any and all losses, claims, damages and liabilities (including, without limitation, any legal or other expenses reasonably incurred in connection with defending or investigating any such action or claim) caused by any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or any amendment thereof, any preliminary prospectus, the Time of Sale Prospectus or any amendment or supplement thereto, any issuer free writing prospectus as defined in Rule 433(h) under the Securities Act, any Company information that the Company has filed, or is required to file, pursuant to Rule 433(d) under the Securities Act, any road show or the Prospectus or any amendment or supplement thereto, or caused by any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, but only with reference to information relating to such Underwriter furnished to the Company in writing by such Underwriter through you expressly for use in the Registration Statement, any preliminary prospectus, the Time of Sale Prospectus, any issuer free writing prospectus, road show, or the Prospectus or any amendment or supplement thereto.

(d) In case any proceeding (including any governmental investigation) shall be instituted involving any person in respect of which indemnity may be sought pursuant to Section 11(a), 11(b) or 11(c), such person (the "**indemnified party**") shall promptly notify the person against whom such indemnity may be sought (the "**indemnifying party**") in writing and the indemnifying party, upon request of the indemnified party, shall retain counsel reasonably satisfactory to the indemnified party to represent the indemnified party and any others the indemnifying party may designate in such proceeding and shall pay the reasonably incurred and documented fees and disbursements of such counsel related to such proceeding. In any such proceeding, any indemnified party shall have the right to retain its own counsel, but the fees and expenses of such counsel shall be at the expense of such indemnified party unless (i) the indemnifying party and the indemnified party shall have mutually agreed to the retention of such counsel; (ii) the indemnifying party has failed within a reasonable time to retain counsel reasonably satisfactory to the indemnified party; (iii) the indemnified party shall have reasonably concluded that there may be legal defenses available to it that are different from or in addition to those available to the indemnifying party; or (iv) the named parties to any such proceeding (including any impleaded parties) include both the indemnifying party and the indemnified party and representation of both parties by the same counsel would be inappropriate due to actual or potential differing interests between them. It is understood that the indemnifying party shall not, in respect of the legal expenses of any indemnified party in connection with any proceeding or related proceedings in the same

jurisdiction, be liable for (i) the fees and expenses of more than one separate firm (in addition to any local counsel) for all Underwriters and all persons, if any, who control any Underwriter within the meaning of either Section 15 of the Securities Act or Section 20 of the Exchange Act or who are affiliates of any Underwriter within the meaning of Rule 405 under the Securities Act, (ii) the fees and expenses of more than one separate firm (in addition to any local counsel) for the Company, its directors, its officers who sign the Registration Statement and each person, if any, who controls the Company within the meaning of either such Section and (iii) the fees and expenses of more than one separate firm (in addition to any local counsel) for all Selling Stockholders and all persons, if any, who control any Selling Stockholder within the meaning of either such Section. In the case of any such separate firm for the Underwriters and such control persons and affiliates of any Underwriters, such firm shall be designated in writing by the Representatives. In the case of any such separate firm for the Company, and such directors, officers and control persons of the Company, such firm shall be designated in writing by the Company. In the case of any such separate firm for the Selling Stockholders and such control persons of any Selling Stockholders, such firm shall be designated in writing by Selling Stockholders representing at least 75% of the Shares sold under this Agreement. The indemnifying party shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party from and against any loss or liability by reason of such settlement or judgment. Notwithstanding the foregoing sentence, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel as contemplated by the second and third sentences of this paragraph, the indemnifying party agrees that it shall be liable for any settlement of any proceeding effected without its written consent if (i) such settlement is entered into more than 30 days after receipt by such indemnifying party of the aforesaid request and (ii) such indemnifying party shall not have reimbursed the indemnified party in accordance with such request prior to the date of such settlement. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement of any pending or threatened proceeding in respect of which any indemnified party is or could have been a party and indemnity could have been sought hereunder by such indemnified party, unless such settlement (i) includes an unconditional release of such indemnified party in form and substance reasonably satisfactory to such indemnified party from all liability on claims that are the subject matter of such proceeding and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act, by or on behalf of any indemnified party.

(e) To the extent the indemnification provided for in Section 11(a), 11(b) or 11(c) is unavailable to an indemnified party or insufficient in respect of any losses, claims, damages or liabilities referred to therein, then each indemnifying party under such paragraph, in lieu of indemnifying such indemnified party thereunder, shall contribute to the amount paid or payable by such indemnified party as a result of such losses, claims, damages or liabilities (i) in such proportion as is appropriate to reflect the relative benefits received by the indemnifying party or parties on the one hand and the indemnified party or parties on the other hand from the offering of the Shares or (ii) if the allocation provided by clause 11(e)(i) above is not permitted by applicable law, in such

proportion as is appropriate to reflect not only the relative benefits referred to in clause 11(e)(i) above but also the relative fault of the indemnifying party or parties on the one hand and of the indemnified party or parties on the other hand in connection with the statements or omissions that resulted in such losses, claims, damages or liabilities, as well as any other relevant equitable considerations. The relative benefits received by the Sellers, the Company and the Underwriters in connection with the offering of the Shares shall be deemed to be in the same respective proportions as the net proceeds from the offering of the Shares (before deducting expenses) received by the Sellers and the Company, respectively, and the total underwriting discounts and commissions received by the Underwriters, in each case as set forth in the table on the cover of the Prospectus, bear to the aggregate Public Offering Price of the Shares. The relative fault of the Sellers, the Company and the Underwriters shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Sellers, by the Company or by the Underwriters and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission. The Underwriters' respective obligations to contribute pursuant to this Section 11 are several in proportion to the respective number of Shares they have purchased hereunder, and not joint.

(f) The Sellers, the Company and the Underwriters agree that it would not be just or equitable if contribution pursuant to this Section 11 were determined by *pro rata* allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation that does not take account of the equitable considerations referred to in Section 11(e). The amount paid or payable by an indemnified party as a result of the losses, claims, damages and liabilities referred to in Section 11(e) shall be deemed to include, subject to the limitations set forth above, any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim. Notwithstanding the provisions of this Section 11, no Underwriter shall be required to contribute any amount in excess of the amount by which the total price at which the Shares underwritten by it and distributed to the public were offered to the public exceeds the amount of any damages that such Underwriter has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. The remedies provided for in this Section 11 are not exclusive and shall not limit any rights or remedies which may otherwise be available to any indemnified party at law or in equity.

(g) The liability of each Selling Stockholder under the indemnity and contribution agreements contained in this Section 11 shall be limited to an amount equal to aggregate Public Offering Price (less underwriting commissions and discounts) of the Shares sold by such Selling Stockholder under this Agreement.

(h) The indemnity and contribution provisions contained in this Section 11 and the representations, warranties and other statements of the Company and the Selling Stockholders contained in this Agreement shall remain operative and in full force and effect regardless of (i) any termination of this Agreement, (ii) any investigation made by or on behalf of any Underwriter, any person controlling any Underwriter or any affiliate of any Underwriter, any Selling Stockholder or any person controlling any Selling Stockholder, or the Company, its officers or directors or any person controlling the Company and (iii) acceptance of and payment for any of the Shares.

12. *Termination.* The Underwriters may terminate this Agreement by notice given by you to the Company, the Selling Stockholders who are not parties to a Custody Agreement or Power of Attorney and the persons named as attorneys-in-fact for the Selling Stockholders under the Powers of Attorney, if after the execution and delivery of this Agreement and prior to the Closing Date (i) trading generally shall have been suspended or materially limited on, or by, as the case may be, any of the New York Stock Exchange, the NYSE MKT or the NASDAQ Global Market, (ii) trading of any securities of the Company shall have been suspended on any exchange or in any over-the-counter market, (iii) a material disruption in securities settlement, payment or clearance services in the United States shall have occurred, (iv) any moratorium on commercial banking activities shall have been declared by Federal or New York State authorities or (v) there shall have occurred any outbreak or escalation of hostilities, or any change in financial markets or any calamity or crisis that, in your judgment, is material and adverse and which, singly or together with any other event specified in this clause (v), makes it, in your judgment, impracticable or inadvisable to proceed with the offer, sale or delivery of the Shares on the terms and in the manner contemplated in the Time of Sale Prospectus or the Prospectus.

13. *Effectiveness; Defaulting Underwriters.* This Agreement shall become effective upon the execution and delivery hereof by the parties hereto.

If, on the Closing Date or an Option Closing Date, as the case may be, any one or more of the Underwriters shall fail or refuse to purchase Shares that it has or they have agreed to purchase hereunder on such date, and the aggregate number of Shares which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase is not more than one-tenth of the aggregate number of the Shares to be purchased on such date, the other Underwriters shall be obligated severally in the proportions that the number of Firm Shares set forth opposite their respective names in Schedule II bears to the aggregate number of Firm Shares set forth opposite the names of all such non-defaulting Underwriters, or in such other proportions as you may specify, to purchase the Shares which such defaulting Underwriter or Underwriters agreed but failed or refused to purchase on such date; *provided* that in no event shall the number of Shares that any Underwriter has agreed to purchase pursuant to this Agreement be increased pursuant to this Section 13 by an amount in excess of one-ninth of such number of Shares without the written consent of such Underwriter. If, on the Closing Date, any Underwriter or Underwriters shall fail or refuse to purchase Firm Shares and the aggregate number of Firm Shares with respect to which such default occurs is more than one-tenth of the aggregate number of Firm Shares to be purchased on such date, and arrangements satisfactory to you, the Company and the Selling Stockholders for the purchase of such Firm Shares are not made within 36 hours after such default, this Agreement shall terminate without liability on the part of any non-defaulting Underwriter, the Company or the Selling Stockholders. In any such case either you or the relevant Sellers shall have the right to postpone the Closing Date, but in no event for longer than seven days, in order that the required changes, if any, in the Registration Statement, in the Time

of Sale Prospectus, in the Prospectus or in any other documents or arrangements may be effected. If, on an Option Closing Date, any Underwriter or Underwriters shall fail or refuse to purchase Additional Shares and the aggregate number of Additional Shares with respect to which such default occurs is more than one-tenth of the aggregate number of Additional Shares to be purchased on such Option Closing Date, the non-defaulting Underwriters shall have the option to (i) terminate their obligation hereunder to purchase the Additional Shares to be sold on such Option Closing Date or (ii) purchase not less than the number of Additional Shares that such non-defaulting Underwriters would have been obligated to purchase in the absence of such default. Any action taken under this paragraph shall not relieve any defaulting Underwriter from liability in respect of any default of such Underwriter under this Agreement.

If this Agreement shall be terminated by the Underwriters, or any of them, because of any failure or refusal on the part of the Company or any Seller to comply with the terms or to fulfill any of the conditions of this Agreement, or if for any reason the Company or any Seller shall be unable to perform its obligations under this Agreement, the Company and the Sellers, jointly and severally, will reimburse the Underwriters or such Underwriters as have so terminated this Agreement with respect to themselves, severally, for all documented out-of-pocket expenses (including the fees and disbursements of their counsel) reasonably incurred by such Underwriters in connection with this Agreement or the offering contemplated hereunder. Notwithstanding the foregoing sentence, if, after the Closing Date but prior to any Option Closing Date with respect to the purchase of any Additional Shares pursuant to a notice delivered by the Representatives to the Company and the Selling Stockholders under Section 3 hereof, the Company or the Sellers fail or refuse to comply with the terms or to fulfill any of the conditions of the Agreement in connection with such Option Closing Date, the Company and the Sellers, jointly and severally, will reimburse the Underwriters severally for all documented out-of-pocket expenses (including the fees and disbursements of their counsel) reasonably incurred by such Underwriters in connection with the proposed purchase of any such Additional Shares pursuant to this Agreement.

14. Entire Agreement.

(a) This Agreement, together with any contemporaneous written agreements and any prior written agreements (to the extent not superseded by this Agreement) that relate to the offering of the Shares, represents the entire agreement between the Company, the Selling Stockholders, and the Underwriters, with respect to the preparation of any preliminary prospectus, the Time of Sale Prospectus, the Prospectus, the conduct of the offering, and the purchase and sale of the Shares.

(b) The Selling Stockholders and the Company acknowledge that in connection with the offering of the Shares: (i) the Underwriters have acted at arms-length, are not agents of, and owe no fiduciary duties to, the Selling Stockholders and the Company or any other person, (ii) the Underwriters owe the Selling Stockholders and the Company only those duties and obligations set forth in this Agreement and prior written agreements between the Company, the Selling Stockholders and the Underwriters (to the extent not superseded by this Agreement), if any, and (iii) the Underwriters may have interests that differ from those of the Company or the Selling Stockholders. The Selling Stockholders and the Company waive to the full extent permitted by applicable law any claims they may have against the Underwriters arising from an alleged breach of fiduciary duty in connection with the offering of the Shares.

15. *Counterparts.* This Agreement may be signed in two or more counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument.

16. *Applicable Law.* This Agreement and any claim, controversy or dispute arising under or related to this Agreement shall be governed by and construed in accordance with the internal laws of the State of New York.

17. *Headings.* The headings of the sections of this Agreement have been inserted for convenience of reference only and shall not be deemed a part of this Agreement.

18. *Notices.* All communications hereunder shall be in writing and effective only upon receipt and if to the Underwriters shall be delivered, mailed or sent to you in care of Morgan Stanley & Co. LLC, 1585 Broadway, New York, New York 10036, Attention: Equity Syndicate Desk; in care of Barclays Capital Inc., 745 Seventh Avenue, New York, New York 10019, Attention: Syndicate Registration, with a copy to the Legal Department, with a copy (which shall not constitute notice) to Wilson Sonsini Goodrich & Rosati, P.C., 1700 K Street NW, 5th Floor, Washington, DC 20006, Attention: Mark R. Fitzgerald and Michael C. Labriola; if to the Company shall be delivered, mailed or sent to Casa Systems, Inc., 100 Old River Road, Andover, Massachusetts 01810, Attention: Todd Keebaugh, with a copy (which shall not constitute notice) to Wilmer Cutler Pickering Hale & Dorr LLP, 60 State Street, Boston, MA 02109, Attention: David A. Westenberg; if to the Selling Stockholders affiliated with Summit Partners, L.P. shall be delivered, mailed or sent to c/o Summit Partners, L.P., 222 Berkeley Street, 18th Floor, Boston, Massachusetts 02116, Attention: Bruce R. Evans, with a copy (which shall not constitute notice) to Kirkland & Ellis LLP, 300 N. LaSalle, Chicago, Illinois 60654, Attention: James R. Rowe and Ana Sempertegui; if to Liberty Global Ventures Holding B.V., shall be delivered, mailed or sent to Boeing Avenue 53, 1119PE Schiphol-Rijk, The Netherlands; and if to any of the other Selling Stockholders shall be delivered, mailed or sent to Wilmer Cutler Pickering Hale & Dorr LLP, 60 State Street, Boston, MA 02109, Attention: David A. Westenberg.

19. *USA Patriot Act.* In accordance with the requirements of the USA Patriot Act (Title III of Pub. L. 107-56 (signed into law October 26, 2001)), the Underwriters are required to obtain, verify and record information that identifies their respective clients, including the Company, which information may include the name and address of their respective clients, as well as other information that will allow the Underwriters to properly identify their respective clients.

[signature pages follow]

Very truly yours,

CASA SYSTEMS, INC.

By: _____
Name:
Title:

The Selling Stockholders named in Schedule I hereto, acting severally

SUMMIT PARTNERS PRIVATE EQUITY FUND
VII-A, L.P.

By: Summit Partners PE VII, LP
Its: General Partner
By: Summit Partners PE VII, LLC
Its: General Partner
By: Summit Partners, L.P.
Its: Managing Member
By: Summit Master Company, LLC
Its: Managing Member

By: _____
Name: Robin W. Devereux
Title: Member

SUMMIT PARTNERS PRIVATE EQUITY FUND
VII-B, L.P.

By: Summit Partners PE VII, LP
Its: General Partner
By: Summit Partners PE VII, LLC
Its: General Partner
By: Summit Partners, L.P.
Its: Managing Member
By: Summit Master Company, LLC
Its: Managing Member

By: _____
Name: Robin W. Devereux
Title: Member

By: SUMMIT INVESTORS I, LLC
Summit Investors Management, LLC
Its: Manager
By: Summit Master Company, LLC
Its: Managing Member

By: _____
Name: Robin W. Devereux
Title: Member

By: SUMMIT INVESTORS I (UK), L.P.
Summit Investors Management, LLC
Its: General Partner
By: Summit Master Company, LLC
Its: Managing Member

By: _____
Name: Robin W. Devereux
Title: Member

Accepted as of the date hereof

Morgan Stanley & Co. LLC
Barclays Capital Inc.

Acting severally on behalf of themselves and the
several Underwriters named in Schedule II hereto

By: Morgan Stanley & Co. LLC

By: _____
Name:
Title:

By: Barclays Capital Inc.

By: _____
Name:
Title:

Selling Stockholder

[NAMES OF SELLING STOCKHOLDERS]

<u>Firm Shares</u>	<u>Additional Shares</u>

Total:

- (1) Selling Stockholder is represented by [Firm].
- (2) Selling Stockholder is represented by [Firm].
- (3) Selling Stockholder is represented by [Firm].

Underwriter	Number of Firm Shares To Be Purchased
Morgan Stanley & Co. LLC	
Barclays Capital Inc.	
Raymond James & Associates, Inc.	
Stifel, Nicolaus & Company, Incorporated	
Macquarie Capital (USA) Inc.	
Northland Securities, Inc.	
William Blair & Company, L.L.C.	
Total:	

Time of Sale Prospectus

- 1. Preliminary Prospectus issued [date]
- 2. [•]
- 3. [•]
- 4. [•]

FORM OF LOCK-UP LETTER

[•], 2018

Morgan Stanley & Co. LLC
Barclays Capital Inc.

c/o Morgan Stanley & Co. LLC
1585 Broadway
New York, NY 10036

Ladies and Gentlemen:

The undersigned understands that Morgan Stanley & Co. LLC (“**Morgan Stanley**”) and Barclays Capital Inc. (“**Barclays**”) propose to enter into an Underwriting Agreement (the “**Underwriting Agreement**”) with Casa Systems, Inc., a Delaware corporation (the “**Company**”), and the Selling Stockholders named in Schedule I to the Underwriting Agreement providing for the public offering (the “**Public Offering**”) by the several Underwriters named in Schedule II to the Underwriting Agreement, including Morgan Stanley and Barclays (the “**Underwriters**”), of shares (the “**Shares**”) of the common stock, par value \$0.001 of the Company (the “**Common Stock**”).

To induce the Underwriters that may participate in the Public Offering to continue their efforts in connection with the Public Offering, the undersigned hereby agrees that, without the prior written consent of Morgan Stanley (the “**Representative**”) on behalf of the Underwriters, it will not, during the period commencing on the date hereof and ending 90 days after the date of the final prospectus (the “**Restricted Period**”) relating to the Public Offering (the “**Prospectus**”), (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock beneficially owned (as such term is used in Rule 13d-3 of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”)), by the undersigned or any other securities so owned convertible into or exercisable or exchangeable for Common Stock or (2) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Common Stock, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise. The foregoing sentence shall not apply to:

- (a) the sale of securities pursuant to the terms of the Underwriting Agreement;
- (b) transactions relating to shares of Common Stock or other securities acquired in open market transactions after the completion of the Public Offering;
- (c) transfers of shares of Common Stock or any security convertible into Common Stock as a bona fide gift;

(d) transfers of shares of Common Stock or any security convertible into or exercisable or exchangeable for Common Stock to a trust, or other entity formed for estate planning purposes, formed for the benefit of the spouse, domestic partner, parent, sibling, child or grandchild of the undersigned or any other person with whom the undersigned has a relationship by blood, marriage or adoption not more remote than first cousin;

(e) if the undersigned is a corporation, partnership (whether general, limited or otherwise), limited liability company, trust or other business entity (i) transfers to another corporation, partnership, limited liability company, trust or other business entity that controls, is controlled by or is under common control with the undersigned or (ii) distributions of shares of Common Stock or any security convertible into or exercisable for Common Stock to partners, limited liability company members or stockholders of the undersigned;

(f) transfers by will or intestate succession upon the death of the undersigned;

(g) transfers in connection with the “net” or “cashless” exercise or settlement of stock options, restricted stock units or other equity awards pursuant to an employee benefit plan disclosed in the final prospectus used for the Public Offering (and any transfer necessary to generate such amount of cash needed for the payment of taxes, including estimated taxes, due as a result of such settlement or exercise whether by means of a “net settlement” or otherwise);

(h) transfers to the Company in connection with the Company’s repurchase of shares of Common Stock issued pursuant to an employee benefit plan disclosed in the final prospectus used for the Public Offering or pursuant to the agreements pursuant to which such shares were issued as disclosed in the final prospectus used for the Public Offering;

(i) the establishment or amendment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of Common Stock, provided that (i) such plan does not provide for the transfer of Common Stock during the Restricted Period and (ii) to the extent a public announcement or filing under the Exchange Act, if any, is required of or voluntarily made by or on behalf of the undersigned or the Company regarding the establishment or amendment of such plan, such announcement or filing shall include a statement to the effect that no transfer of Common Stock may be made under such plan during the Restricted Period;

(j) the transfer of shares of Common Stock or any security convertible into or exercisable or exchangeable for Common Stock pursuant to a qualified domestic order or in connection with a divorce settlement;

(k) the transfer of shares of Common Stock or any security convertible into or exercisable or exchangeable for Common Stock following the date of the Prospectus pursuant to a bona fide third party tender offer, merger, consolidation or other similar transaction involving a Change of Control (defined below) of the Company approved by the Company’s board of directors, provided that in the event that the tender offer, merger,

consolidation or other such transaction is not completed, the Common Stock owned by the undersigned shall remain subject to the restrictions contained in this agreement;

provided that in the case of any transfer or distribution pursuant to clauses (c) through (g) or (j) above, each donee or distributee shall sign and deliver a lock-up letter substantially in the form of this letter.

In addition, (x) with respect to clauses (b) through (d) and (f) above, it shall be a condition to such transfer that no filing under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock shall be required or voluntarily made during the Restricted Period (other than, with respect to clauses (c) and (f) only, any required Form 5 filings, provided that such Form 5 filings clearly indicate in the footnotes thereto an explanation of the type of transaction giving rise to the change in ownership), (y) with respect to clause (e) such transfers and distributions shall not involve a disposition for value and any filings made under Section 16(a) of the Exchange Act in connection therewith clearly indicate in the footnotes thereto an explanation of the type of transaction giving rise to the change in ownership, and (z) with respect to clauses (g) and (j), it shall be a condition to such transfer that no public reports, including but not limited to filings under Section 16 of the Exchange Act, will be required to be filed or will be voluntarily made by the undersigned within 30 days after the date of the Prospectus, and after such 30th day, any public report or filing under Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock, shall clearly indicate in the footnotes thereto the nature and conditions of such transfer.

For purposes of this agreement, “Change of Control” shall mean the transfer (whether by tender offer, merger, consolidation or other similar transaction), in one transaction or a series of related transactions, to a person or group of affiliated persons (other than an Underwriter pursuant to the Public Offering), of the Company’s voting securities if, after such transfer, such person or group of affiliated persons would hold more than 50% of the outstanding voting securities of the Company (or the surviving entity).

In addition, the undersigned agrees that, without the prior written consent of the Representative on behalf of the Underwriters, it will not, during the Restricted Period, make any demand for or exercise any right with respect to, the registration of any shares of Common Stock or any security convertible into or exercisable or exchangeable for Common Stock. The undersigned also agrees and consents to the entry of stop transfer instructions with the Company’s transfer agent and registrar against the transfer of the undersigned’s shares of Common Stock except in compliance with the foregoing restrictions.

The undersigned understands that the Company and the Underwriters are relying upon this agreement in proceeding toward consummation of the Public Offering. The undersigned further understands that this agreement is irrevocable and shall be binding upon the undersigned’s heirs, legal representatives, successors and assigns.

Whether or not the Public Offering actually occurs depends on a number of factors, including market conditions. Any Public Offering will only be made pursuant to an

Underwriting Agreement, the terms of which are subject to negotiation among the Company, the Selling Stockholders and the Underwriters.

This agreement and any claim, controversy or dispute arising under or related to this agreement shall be governed by and construed in accordance with the laws of the State of New York, without regard to the conflict of laws principles thereof.

Notwithstanding anything to the contrary contained herein, this Lock-Up Agreement will automatically terminate and the undersigned will be released from all of his, her or its obligations hereunder upon the earliest to occur, if any, of (i) prior to the execution of the Underwriting Agreement, either the Company on the one hand, or the Representative on the other hand, advises the other in writing that it has determined not to proceed with the Public Offering, (ii) the withdrawal of the Registration Statement on Form S-1 related to the Public Offering, (iii) the Underwriting Agreement is executed but is terminated (other than the provisions thereof which survive termination) prior to payment for and delivery of the Shares to be sold thereunder, or (iv) June 12, 2018, in the event that the Underwriting Agreement has not been executed by such date.

[Signature Page Follows]

<hr/>	
IF AN INDIVIDUAL:	Very truly yours,
	IF AN ENTITY:
By: <hr/>	<hr/>
<i>(duly authorized signature)</i>	<i>(please print complete name of entity)</i>
Name: <hr/>	By: <hr/>
<i>(please print full name)</i>	<i>(duly authorized signature)</i>
	Name: <hr/>
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	Title: <hr/>
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Email: <hr/>	Email: <hr/>

WILMERHALE

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April 23, 2018

Casa Systems, Inc.
100 Old River Road
Andover, Massachusetts 01810

Registration Statement on Form S-1

Ladies and Gentlemen:

This opinion is furnished to you in connection with a Registration Statement on Form S-1 (the “Registration Statement”) filed with the Securities and Exchange Commission (the “Commission”) under the Securities Act of 1933, as amended (the “Securities Act”), for the registration of 8,452,500 shares of Common Stock, \$0.001 par value per share (the “Shares”), of Casa Systems, Inc., a Delaware corporation (the “Company”), all of which Shares will be sold by certain stockholders of the Company (the “Selling Stockholders”), including 1,102,500 Shares to be sold upon exercise of an option granted by the Selling Stockholders to the several underwriters named in the Underwriting Agreement (as defined below).

The Shares are to be sold by the Selling Stockholders pursuant to an underwriting agreement (the “Underwriting Agreement”) to be entered into by and among the Company, the Selling Stockholders, and Morgan Stanley & Co. LLC and Barclays Capital Inc., as representatives of the several underwriters named in the Underwriting Agreement, the form of which has been filed as Exhibit 1.1 to the Registration Statement.

We are acting as counsel for the Company in connection with the sale by the Selling Stockholders of the Shares. We have examined signed copies of the Registration Statement as filed with the Commission. We have also examined and relied upon the Underwriting Agreement, minutes of meetings (and written consents in lieu of meetings) of the stockholders and the Board of Directors of the Company as provided to us by the Company, the certificate of incorporation and by-laws of the Company, each as restated and/or amended to date, and such other documents as we have deemed necessary for purposes of rendering the opinions hereinafter set forth.

Wilmer Cutler Pickering Hale and Dorr LLP, 60 State Street, Boston, Massachusetts 02109

Beijing Berlin Boston Brussels Denver Frankfurt London Los Angeles New York Oxford Palo Alto Washington

April 23, 2018

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In our examination of the foregoing documents, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as copies, the authenticity of the originals of such latter documents and the legal competence of all signatories to such documents.

We express no opinion herein as to the laws of any state or jurisdiction other than the state laws of the Commonwealth of Massachusetts, the General Corporation Law of the State of Delaware and the federal laws of the United States of America.

Our opinion below, insofar as it relates to the Shares being fully paid, is based solely on a certificate of the Chief Financial Officer of the Company confirming the Company's receipt of the consideration called for by the applicable resolutions authorizing the issuance of such shares.

Based upon and subject to the foregoing, we are of the opinion that the Shares have been duly authorized and are validly issued, fully paid and nonassessable.

Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act and to the use of our name therein and in the related Prospectus under the caption "Legal Matters." In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission.

Very truly yours,

WILMER CUTLER PICKERING HALE AND DORR LLP

By: /s/ David A. Westenberg

David A. Westenberg, a Partner

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the use in this Registration Statement on Form S-1 of Casa Systems, Inc. of our report dated March 6, 2018 relating to the financial statements of Casa Systems, Inc., which appears in this Registration Statement. We also consent to the reference to us under the heading “Experts” in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
April 23, 2018