

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

AMENDMENT NO. 1
TO
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)

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President, Chief Executive Officer and Chairman
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(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 ☐
Non-accelerated filer ☒
(Do not check if a smaller reporting company)

Accelerated filer ☐
Smaller reporting company ☐
Emerging growth company ☒

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

CALCULATION OF REGISTRATION FEE

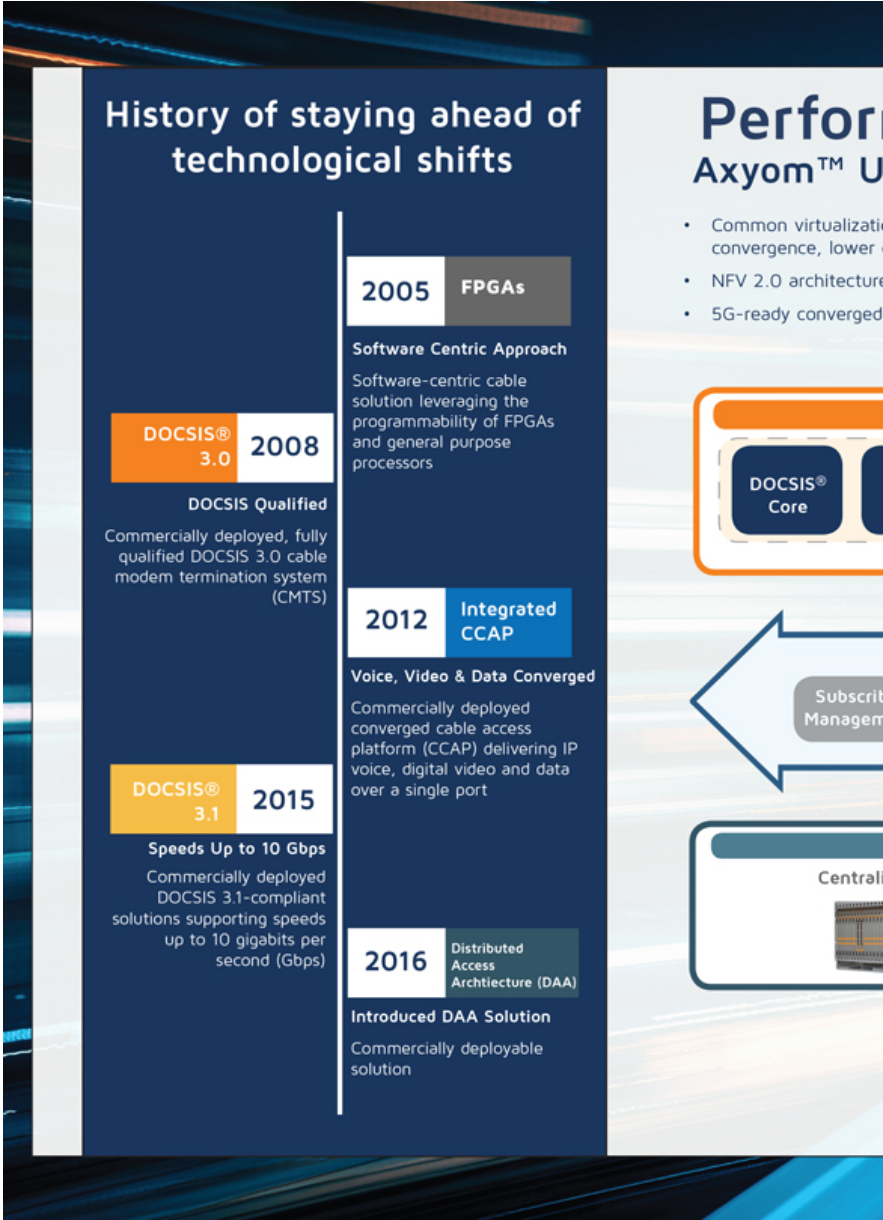
Title of Each Class of Securities To Be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price Per Share(2)	Proposed Maximum Aggregate Offering Price(2)	Amount of Registration Fee(3)(4)
Common Stock, \$0.001 par value per share	9,660,000	\$17.00	\$164,220,000	\$20,445.39

- (1) Includes 1,260,000 shares of common stock the underwriters have the option to purchase.
(2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(a) under the Securities Act of 1933, as amended.
(3) Calculated pursuant to Rule 457(a) based on an estimate of the proposed maximum aggregate offering price.
(4) A registration fee of \$18,675.00 was previously paid in connection with the Registration Statement, and the additional amount of \$1,770.39 is being paid herewith.

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.

, 2017





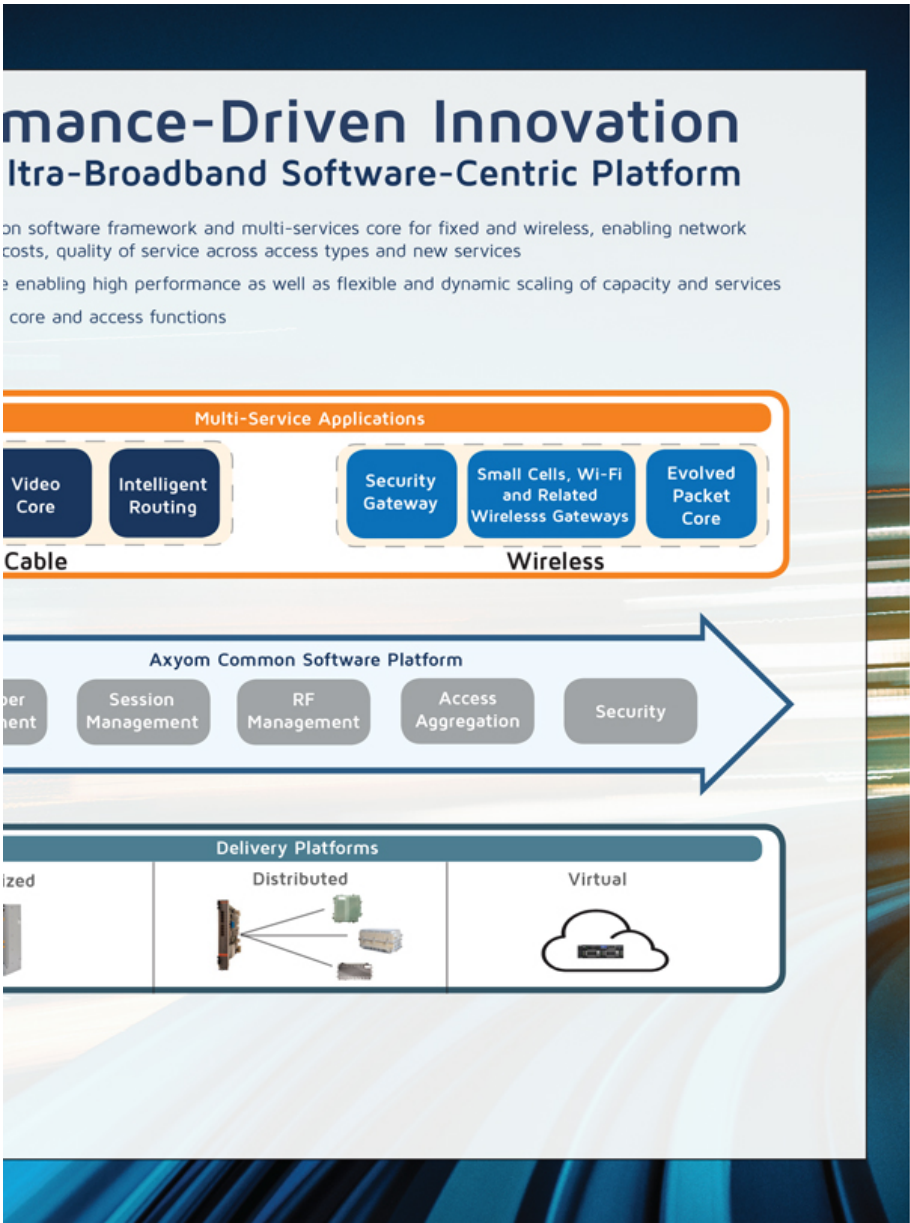


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You should rely only on the information contained in this prospectus or in any free writing prospectus we file with the Securities and Exchange Commission, or SEC. We and the underwriters have not authorized anyone to provide you with additional information or information different from that contained in this prospectus or any free writing prospectus. We 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.

Through and including _____, 2018 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

For investors outside the United States: Neither we nor the underwriters have done anything that would permit our initial public 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 12, 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 provide 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. In addition, we offer solutions for next-generation distributed and virtualized architectures in cable operator, fixed telecom 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.

We focus our development efforts on innovation and being the first to market with new products at each generational shift in cable network technology. 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 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 cable 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 400 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 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 and Beijing Gehua CATV Networks in Asia-Pacific.

One of our largest customers, Time Warner Cable, launched its flagship "TWC Maxx" initiative in the New York City metropolitan area in 2014 using our solution. By deploying our C100G CCAP solution, Time Warner Cable was able to triple the maximum speed offered to its customers and reduce power consumption by nearly 30%, or approximately 11GWh per year, which we estimate is enough power for over 1,800 residential homes. Our solution also enabled Time Warner Cable to reduce facility space and remove over 140 miles of coaxial copper cable.

We have achieved significant growth and profitability. For the year ended December 31, 2015, we generated revenue of \$272.5 million, net income of \$67.9 million and adjusted EBITDA¹ of \$115.5 million, representing increases of 29.0%, 13.8% and 22.1%, respectively, from the corresponding amounts for the year ended December 31, 2014. For the year ended December 31, 2016, we generated revenue of \$316.1 million, net income of \$88.7 million and adjusted EBITDA of \$129.1 million, representing increases of 16.0%, 30.5% and 11.7%, respectively, from the corresponding amounts for the year ended December 31, 2015. For the nine months ended September 30, 2017, we generated revenue of \$233.6 million, net income of \$59.6 million and adjusted EBITDA of \$93.3 million, representing increases of 7.7%, 22.2% and 25.2%, respectively, from the corresponding amounts for the nine months ended September 30, 2016.

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 Adjusted EBITDA is a non-GAAP financial measure. Please see "Selected Consolidated Financial Data—Non-GAAP Financial Measures" for information regarding the limitations of using adjusted EBITDA and for a reconciliation of 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 allows us to leverage the programmability of FPGAs and general purpose processors in our solutions. 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.
- **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 October 31, 2017, approximately 85% 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 400 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 network convergence presents us with a compelling market opportunity. We believe the global CCAP market, which currently accounts for the majority of our revenue, is \$2.0 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 12 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.

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	8,400,000 shares
Common stock to be outstanding after this offering	82,497,475 shares
Option to purchase additional shares	We have granted the underwriters an option, exercisable for 30 days after the date of this prospectus, to purchase up to an additional 1,260,000 shares from us.
Use of proceeds	<p>The principal purposes of this offering are to create a public market for our common stock, facilitate access to the public equity markets, increase our visibility in the marketplace and obtain additional capital.</p> <p>We estimate that we will receive net proceeds from this offering of \$121.3 million, based upon an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds from this offering for working capital and general corporate purposes. In addition, we believe that opportunities may exist from time to time to expand our current business through acquisitions of or investments in complementary products, technologies or businesses. While we have no agreements, commitments or understandings for any specific acquisitions at this time, we may use a portion of our net proceeds for these purposes. See “Use of Proceeds” for more information.</p>
Dividend policy	Although we have declared and paid a special dividend on four separate occasions since our inception and have declared an additional special dividend of \$43.0 million that is contingent upon, and payable following, the closing of this offering to the holders of record of our stock as of November 30, 2017, and approved further cash payments of \$7.0 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments in connection with this dividend in the event that it is paid, we do not anticipate declaring cash dividends following this offering. 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.
Proposed Nasdaq Global Select Market symbol	“CASA”

The number of shares of our common stock to be outstanding after this offering is based on 33,715,505 shares of common stock outstanding as of October 31, 2017 and 40,381,970 additional shares of our common stock issuable upon the automatic conversion of all outstanding shares of our convertible preferred stock upon the closing of this offering and excludes:

- 145,830 shares of common stock issuable upon the exercise of stock options outstanding under our 2003 Stock Incentive Plan as of October 31, 2017, with a weighted-average exercise price of \$0.25 per share;
- 14,899,160 shares of common stock issuable upon the exercise of stock options outstanding under our 2011 Stock Incentive Plan as of October 31, 2017, with a weighted-average exercise price of \$4.23 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 October 31, 2017;
- 2,839,315 shares of common stock reserved for future issuance under our 2011 Stock Incentive Plan as of October 31, 2017, which plan will terminate as to new awards upon the closing of this offering; and
- 7,160,685 additional shares of common stock that will become available for issuance in connection with this offering under our 2017 Stock Incentive Plan, of which we expect to grant options to purchase an aggregate of 625,000 shares, with an exercise price per share equal to the initial public offering price in this offering, to certain of our employees and restricted stock units for an aggregate of 28,125 shares, based upon an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, to one of our non-employee directors, in each case upon the commencement of trading of our common stock on the Nasdaq Global Select Market.

Except as otherwise noted, all information in this prospectus assumes:

- the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 40,381,970 shares of our common stock upon the closing of this offering;
- no exercise by the underwriters of their option to purchase up to an additional 1,260,000 shares; and
- a five-for-one forward stock split of our common stock effected on December 1, 2017.

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, 2014, 2015 and 2016 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. The summary consolidated statement of operations data for the nine months ended September 30, 2016 and 2017 and the summary consolidated balance sheet data as of September 30, 2017 have been derived from our unaudited condensed consolidated financial statements included elsewhere in this prospectus and have been prepared on a basis consistent with our audited consolidated financial statements. In the opinion of management, the unaudited data reflect all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of the financial information in those statements. Our historical results are not necessarily indicative of the results to be expected in the future, and the results for any interim period are not necessarily indicative of results to be expected in any full year. 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,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
(in thousands, except per share amounts)					
Consolidated Statement of Operations Data:					
Revenue:					
Product	\$ 194,358	\$ 247,588	\$ 279,223	\$ 191,763	\$ 205,155
Service	16,920	24,862	36,905	25,139	28,458
Total revenue	211,278	272,450	316,128	216,902	233,613
Cost of revenue(1):					
Product	59,088	74,349	89,340	68,793	62,865
Service	5,917	5,265	8,477	5,983	3,637
Total cost of revenue	65,005	79,614	97,817	74,776	66,502
Gross profit	146,273	192,836	218,311	142,126	167,111
Operating expenses:					
Research and development(1)	25,481	37,155	49,210	37,213	43,912
Sales and marketing(1)	21,409	36,157	36,114	27,289	26,983
General and administrative(1)	10,346	16,453	18,215	13,532	14,387
Total operating expenses	57,236	89,765	103,539	78,034	85,282
Income from operations	89,037	103,071	114,772	64,092	81,829
Other income (expense), net	(2,942)	(1,408)	921	953	(9,858)
Income before provision for income taxes	86,095	101,663	115,693	65,045	71,971
Provision for income taxes	26,387	33,742	27,025	16,228	12,334
Net income	\$ 59,708	\$ 67,921	\$ 88,668	\$ 48,817	\$ 59,637
Cash dividends declared per common share or common share equivalent	\$ 0.3835	\$ —	\$ 2.9197	\$ 0.5891	\$ 1.1774
Net income (loss) attributable to common stockholders(2):					
Basic	\$ 23,287	\$ 27,302	\$ (35,119)	\$ 19,928	\$ 7,689
Diluted	\$ 23,843	\$ 30,402	\$ (35,119)	\$ 20,006	\$ 7,689

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
(in thousands, except per share amounts)					
Net income (loss) per share attributable to common stockholders(2):					
Basic	\$ 0.78	\$ 0.86	\$ (1.07)	\$ 0.61	\$ 0.23
Diluted	\$ 0.73	\$ 0.78	\$ (1.07)	\$ 0.47	\$ 0.18
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders(2):					
Basic	29,983	31,740	32,864	32,822	33,657
Diluted	32,683	38,809	32,864	42,137	43,198
Pro forma net income per share attributable to common stockholders (unaudited)(2):					
Basic			\$ 1.09		\$ 0.72
Diluted			\$ 0.97		\$ 0.65
Weighted-average shares used to compute pro forma net income per share attributable to common stockholders (unaudited)(2):					
Basic			81,646		82,439
Diluted			91,333		91,979
Other Financial Data:					
Non-GAAP net income(3)	\$ 62,145	\$ 72,812	\$ 95,032	\$ 53,301	\$ 64,520
Adjusted EBITDA(3)	\$ 94,632	\$ 115,541	\$ 129,084	\$ 74,517	\$ 93,298

(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,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
(in thousands)					
Cost of revenue	\$ 161	\$ 143	\$ 237	\$ 178	\$ 202
Research and development expense	852	1,843	2,306	1,637	1,535
Sales and marketing expense	598	775	1,147	846	801
General and administrative expense	380	4,560	4,614	3,313	3,355
Total stock-based compensation expense	\$1,991	\$7,321	\$8,304	\$ 5,974	\$ 5,893

- (2) See Note 14 to our audited consolidated financial statements and Note 12 to our unaudited condensed consolidated financial statements, both included elsewhere in this prospectus, for an explanation of the calculations of basic and diluted net income (loss) per share attributable to common stockholders and pro forma basic and diluted net income 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 September 30, 2017		
	Actual	Pro Forma(2) (in thousands)	Pro Forma As Adjusted(3)
Consolidated Balance Sheet Data:			
Cash and cash equivalents	\$ 183,519	\$ 183,519	\$ 306,878
Working capital(1)	247,182	197,184	320,628
Total assets	392,235	392,235	513,482
Long-term debt, including current portion, net of unamortized debt issuance costs	298,147	298,147	298,147
Total liabilities	402,962	452,960	452,875
Convertible preferred stock	97,479	—	—
Total stockholders' equity (deficit)	(108,206)	(60,725)	60,607

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

(2) The pro forma balance sheet data gives effect to (i) the automatic conversion of all outstanding shares of our convertible preferred stock into 40,381,970 shares of common stock upon the closing of this offering and (ii) the accrual of an additional special dividend of \$43.0 million, which was declared by our board of directors on November 30, 2017, contingent upon, and to be payable following, the closing of this offering to the holders of record of our stock as of November 30, 2017, and cash payments of \$7.0 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments approved by our board of directors for payment in connection with the additional special dividend in the event that it is paid.

(3) The pro forma as adjusted balance sheet data gives further effect to our sale of 8,400,000 shares of common stock in this offering at an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

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 Time Warner Cable accounted for 41%, 14%, 23% and 36% of our revenue for the years ended December 31, 2014, 2015 and 2016 and the nine months ended September 30, 2017, respectively; sales to Liberty Global accounted for 17%, 10% and 11% of our revenue for the years ended December 31, 2015 and 2016 and the nine months ended September 30, 2017, respectively; sales to Rogers accounted for 19% of our revenue for the year ended December 31, 2016; and sales to SCSK Corporation accounted for 13% of our revenue for the year ended December 31, 2014. 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, and 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, 2014, 2015 and 2016 and the nine months ended September 30, 2017, our research and development expenses were \$25.5 million, or approximately 12.1% of our revenue, \$37.2 million, or approximately 13.6% of our revenue, \$49.2 million, or approximately 15.6% of our revenue, and \$43.9 million, or approximately 18.8% 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 2016 to 2017. 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 revenue. We cannot guarantee that these investments, or any of our other investments in research and development will ever generate 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 and Cisco. As we seek to enter the wireless market, we expect to encounter additional competition from large, established providers of wireless communication networks, including 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 organization 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, 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 the 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 and 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 internationally 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 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;
- greater risk of unexpected changes in regulatory practices, tariffs and tax laws and treaties;
- 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, 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 29.0% from the year ended December 31, 2014 to the year ended December 31, 2015, grew 16.0% from the year ended December 31, 2015 to the year ended December 31, 2016 and grew 7.7% from the nine months ended September 30, 2016 to the nine months ended September 30, 2017. 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.

The majority of the growth in our revenue and income from operations has occurred since 2013, making it 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, making it 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.

Additionally, errors, failures or bugs in our products 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 addition, 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, the prices we are charged for manufacturing services could be increased on short notice and we may not be able to develop alternate or second contract manufacturers in a timely manner. 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 \$211.3 million for the year ended December 31, 2014 to \$272.5 million for the year

ended December 31, 2015 to \$316.1 million for the year ended December 31, 2016 and from \$216.9 million for the nine months ended September 30, 2016 to \$233.6 million for the nine months ended September 30, 2017. To handle this growth and increase in demand, we have significantly expanded our headcount, from 352 as of December 31, 2014 to 604 as of December 31, 2016 and to 664 as of October 31, 2017, and 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 67 as of December 31, 2014 to 116 as of October 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, or of the systems hosting our website, or our other networks and systems, 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. 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. 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 trade secrets and 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 trade secrets and proprietary information, 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 trade secret and 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 us, 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 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 and 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.

Current U.S. tax laws could impact the tax treatment of our foreign earnings by creating limits on the ability of taxpayers to claim and utilize foreign tax credits and deferring certain tax deductions until earnings outside of the United States are repatriated to the United States. Due to our existing, and anticipated expansion of, our international business activities, any changes in the U.S. 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, together with our net proceeds from this offering, 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. Our indebtedness increases the possibility that 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 and this Offering

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 develop, and you may not be able to resell your shares of our common stock at or above the initial offering price.

Before this offering, there was no public trading market for our common stock. If a market for our common stock does not develop or is not sustained, it may be difficult for you to sell your shares of common stock at an attractive price, at the time that you would like to sell them, or at all. The initial public offering price of our common stock was determined through negotiations between us and the underwriters. This initial public offering price may not be indicative of the market price of our common stock after the offering. We cannot predict the prices at which our common stock will trade. It is possible that in one or more future periods our results of operations may be below the expectations of public market analysts and investors and, as a result of these and other factors, the price of our common stock may fall.

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

The market price of our common stock could be subject to significant fluctuations after this offering, and it may decline below the initial public offering price. Some of the factors that may cause the market price of our common stock to fluctuate include:

- price and volume fluctuations in the overall stock market from time to time;

- volatility in the market price and trading volume of comparable companies;
- actual or anticipated changes in our earnings or fluctuations in our results of operations or in the expectations of securities analysts;
- 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 will have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Our management will have broad discretion to use the net proceeds from this offering, and you will be relying on the judgment of our management regarding the application of these proceeds. We intend to use the net proceeds from this offering for working capital and general corporate purposes. Because we will have broad discretion in the application of the net proceeds from this offering, our management may fail to apply these funds effectively, which could adversely affect our ability to operate and grow our business. You will not have the opportunity to influence our decisions on how to use our net proceeds from this offering.

If securities or industry analysts do not publish, or 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. We do not currently have and may never obtain research coverage by industry or financial analysts. If no analysts or few analysts commence coverage of us, the trading price of our stock would likely decrease. Even if we do obtain analyst coverage, if one or more of the 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 as a result of this offering.

If you purchase common stock in this offering, you will incur immediate and substantial dilution of \$15.27 per share, representing the difference between the assumed initial public offering price of \$16.00 per share,

which is the midpoint of the price range set forth on the cover page of this prospectus, and our pro forma as adjusted net tangible book value per share after giving effect to this offering and the other adjustments described in detail under “Dilution”. Moreover, to the extent outstanding options are exercised, you will incur further dilution. See “Dilution”.

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

Although we have paid special dividends in the past, you should not rely on an investment in our common stock to provide dividend income. Following this offering, we do not anticipate that we will declare any cash dividends to holders of our common stock in the foreseeable future. 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 will continue to have substantial control over us after this offering, which could limit your ability to influence the outcome of key transactions, including a change of control.

After this offering, our directors and executive officers and their affiliates will beneficially own, in the aggregate, approximately 75.3% of our outstanding common stock, assuming no exercise of the underwriters’ option to purchase additional shares of our common stock in this offering. 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. This concentration of ownership may have the effect of delaying or preventing a change in control of our company and might affect the market price of our common stock.

Some of these persons or entities may have interests different than yours. For example, because many of these stockholders purchased their shares at prices substantially below the price at which shares are being sold in this offering and have held their shares for a longer period, they may be more interested in selling our company to an acquirer than other investors or may want us to pursue strategies that deviate from the interests of other stockholders.

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 substantial number of shares of our common stock in the public market could occur at any time after the expiration of the lock-up agreements described in the “Underwriters” section of this prospectus. 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. After this offering and after giving effect to the conversion of all outstanding shares of our convertible preferred stock into 40,381,970 shares of our common stock upon the closing of this offering, we will have 82,497,475 shares of common stock outstanding based on the number of shares outstanding as of October 31, 2017. This includes the 8,400,000 shares that we are selling in this offering, which may be resold in the public market immediately. The remaining 74,097,475 shares, or 89.8% of our outstanding shares after this offering, are currently, and will be following the closing of this offering, restricted as a result of securities laws or lock-up agreements but will be able to be sold, subject to any applicable volume limitations under federal securities laws with respect to affiliate sales, in the near future as described in the “Shares Eligible for Future Sale” and “Underwriters” sections of this prospectus.

In addition, as of October 31, 2017, there were 15,044,990 shares subject to outstanding options, 861,740 shares subject to outstanding restricted stock unit awards, or RSUs, and an additional 2,839,315 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. Moreover, after this offering, holders of an aggregate of approximately 33,715,505 shares of our common stock as of October 31, 2017, will have rights, subject to 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. We also intend to register all shares of common stock that we may issue under our equity incentive plans. 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 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 of America 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 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. 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 this 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 this 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 will not immediately be 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 this 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 at the time of this offering, (2) a majority of independent members of each committee within 90 days of the date of this offering and (3) all independent members of each committee within one year of the date of this offering. As of the date of this offering, only two members of our board of directors have been determined to be independent, only one member of our audit committee has been determined to be independent and only one member of our compensation committee has 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 will be 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.

Within the initial twelve months of becoming a publicly traded company, 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. 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;
- 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 proceeds from this offering.

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 estimate that the net proceeds from the sale of our common stock in this offering will be approximately \$121.3 million, based upon an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriters fully exercise their option to purchase additional shares in this offering, we estimate that our net proceeds will be approximately \$140.1 million.

Each \$1.00 increase (decrease) in the assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the net proceeds from this offering by \$7.8 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions. Similarly, each 1,000,000 share increase (decrease) in the number of shares offered by us would increase (decrease) the net proceeds from this offering by \$14.9 million, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions.

The principal purposes of this offering are to create a public market for our common stock, facilitate access to the public equity markets, increase our visibility in the marketplace and obtain additional capital.

We intend to use the net proceeds from this offering for working capital and general corporate purposes. In addition, we believe that opportunities may exist from time to time to expand our current business through acquisitions of or investments in complementary products, technologies or businesses. While we have no agreements, commitments or understandings for any specific acquisitions at this time, we may use a portion of the net proceeds from this offering for these purposes. We do not intend to use any of the net proceeds from this offering to pay the special dividend of \$43.0 million declared by our board of directors that is contingent upon, and payable following, the closing of this offering to the holders of record of our stock as of November 30, 2017, or the further cash payments of \$7.0 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments approved by our board of directors for payment in connection with this dividend in the event that it is paid.

Our management will have broad discretion in the application of the net proceeds from this offering, and investors will be relying on the judgment of our management regarding the application of the net proceeds. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations, the anticipated growth of our business, and the availability and terms of alternative financing sources to fund our growth. Pending use of the net proceeds as described above, we intend to invest the proceeds in short-term, interest-bearing obligations, investment-grade securities, certificates of deposit or direct or guaranteed obligations of the U.S. government. The goal with respect to the investment of these net proceeds will be capital preservation and liquidity so that these funds are readily available to fund our operations.

DIVIDEND POLICY

We declared special dividends in November 2014, June 2016, December 2016 and May 2017. 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.

Although we have declared and paid the special dividends described above and have declared an additional special dividend of \$43.0 million that is contingent upon, and payable following, the closing of this offering to the holders of record of our stock as of November 30, 2017, and approved further cash payments of \$7.0 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments in connection with this dividend in the event that it is paid, we do not anticipate declaring cash dividends following this offering. 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 September 30, 2017:

- on an actual basis;
- on a pro forma basis, giving effect to:
 - the automatic conversion of all outstanding shares of our convertible preferred stock into 40,381,970 shares of common stock upon the closing of this offering;
 - the accrual of an additional special dividend of \$43.0 million, which was declared by our board of directors on November 30, 2017, contingent upon, and to be payable following, the closing of this offering to the holders of record of our stock as of November 30, 2017, and cash payments of \$7.0 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments approved by our board of directors for payment in connection with the additional special dividend in the event that it is paid; and
 - the filing and effectiveness of our restated certificate of incorporation; and
- on a pro forma as adjusted basis, giving further effect to our sale of 8,400,000 shares of common stock in this offering at an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma as adjusted information set forth in the table below is illustrative only and will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing. 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 September 30, 2017		
	Actual	Pro Forma	Pro Forma
	(in thousands, except share and per share amounts)		
Cash and cash equivalents	\$ 183,519	\$ 183,519	\$ 306,878
Long-term debt, including current portion, net of unamortized debt issuance costs	\$ 298,147	\$ 298,147	\$ 298,147
Convertible preferred stock (Series A, B and C), \$0.001 par value; 6,000,000 shares authorized, 4,038,197 shares issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	97,479	—	—
Stockholders’ equity (deficit):			
Preferred stock, \$0.001 par value; no shares authorized, issued or outstanding, actual; 5,000,000 shares authorized, no shares issued or outstanding, pro forma and pro forma as adjusted	—	—	—
Common stock, \$0.001 par value; 100,000,000 shares authorized, 33,701,135 shares issued and outstanding, actual; 500,000,000 shares authorized, 74,083,105 shares issued and outstanding, pro forma; 500,000,000 shares authorized, 82,483,105 shares issued and outstanding, pro forma as adjusted	34	74	82
Additional paid-in capital	—	47,441	168,765
Accumulated other comprehensive loss	(460)	(460)	(460)
Accumulated deficit	(107,780)	(107,780)	(107,780)
Total stockholders’ equity (deficit)	(108,206)	(60,725)	60,607
Total capitalization	\$ 287,420	\$ 237,422	\$ 358,754

Each \$1.00 increase (decrease) in the assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by \$7.8 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions. Similarly, each 1,000,000 share increase (decrease) in the number of shares offered by us would increase (decrease) the pro forma as adjusted amount of cash and cash equivalents, additional paid-in capital, total stockholders' equity and total capitalization by \$14.9 million, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions.

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 September 30, 2017, with a weighted-average exercise price of \$0.25 per share;
- 14,970,580 shares of common stock issuable upon the exercise of stock options outstanding under our 2011 Stock Incentive Plan as of September 30, 2017, with a weighted-average exercise price of \$4.25 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 September 30, 2017;
- 2,782,265 shares of common stock reserved for future issuance under our 2011 Stock Incentive Plan as of September 30, 2017, which plan will terminate as to new awards upon the closing of this offering; and
- 7,160,685 additional shares of common stock that will become available for issuance in connection with this offering under our 2017 Stock Incentive Plan, of which we expect to grant options to purchase an aggregate of 625,000 shares, with an exercise price per share equal to the initial public offering price in this offering, to certain of our employees and restricted stock units for an aggregate of 28,125 shares, based upon an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, to one of our non-employee directors, in each case upon the commencement of trading of our common stock on the Nasdaq Global Select Market.

DILUTION

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 initial public offering price per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock immediately after this offering.

Our historical net tangible book value (deficit) as of September 30, 2017 was \$(110.3) million, or \$(3.27) per share of our common stock. Our historical net tangible book value (deficit) is the amount of our total tangible assets less our total liabilities and convertible preferred stock, which is not included within our stockholders' deficit. Historical net tangible book value (deficit) per share represents historical net tangible book value (deficit) divided by the 33,701,135 shares of our common stock outstanding as of September 30, 2017.

Our pro forma net tangible book value (deficit) as of September 30, 2017 was \$(62.8) million, or \$(0.85) per share of our common stock. Pro forma net tangible book value (deficit) represents the amount of our total tangible assets less our total liabilities, after giving effect to (i) the automatic conversion of all outstanding shares of our convertible preferred stock into 40,381,970 shares of our common stock upon the closing of this offering and (ii) the accrual of an additional special dividend of \$43.0 million, which was declared by our board of directors on November 30, 2017, contingent upon, and to be payable following, the closing of this offering to the holders of record of our stock as of November 30, 2017, and cash payments of \$7.0 million to be made to holders of our stock options, stock appreciation rights and restricted stock units as equitable adjustments approved by our board of directors for payment in connection with the additional special dividend in the event that it is paid. Pro forma net tangible book value (deficit) per share represents our pro forma net tangible book value divided by the total number of shares outstanding as of September 30, 2017, after giving effect to the automatic conversion of all outstanding shares of convertible preferred stock upon the closing of this offering.

After giving further effect to our sale of 8,400,000 shares of common stock in this offering at an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of September 30, 2017 would have been \$60.6 million, or \$0.73 per share. This represents an immediate increase in pro forma as adjusted net tangible book value per share of \$1.58 to existing stockholders and immediate dilution per share of \$15.27 to new investors purchasing common stock in this offering. Dilution per share to new investors is determined by subtracting pro forma as adjusted net tangible book value per share after this offering from the assumed initial public offering price per share paid by new investors. The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share	\$16.00
Historical net tangible book value (deficit) per share as of September 30, 2017	\$(3.27)
Increase per share attributable to the pro forma adjustments described above	2.42
Pro forma net tangible book value (deficit) per share as of September 30, 2017	(0.85)
Increase in pro forma as adjusted net tangible book value per share attributable to new investors purchasing common stock in this offering	1.58
Pro forma as adjusted net tangible book value per share after this offering	0.73
Dilution per share to new investors purchasing common stock in this offering	<u>\$15.27</u>

Each \$1.00 increase (decrease) in the assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase (decrease) our pro forma as adjusted net tangible book value by \$7.8 million, our pro forma as adjusted net tangible book value per share after this offering by \$0.09 and the dilution per share to new investors purchasing shares in this offering by \$0.91, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions. An increase of

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1,000,000 shares in the number of shares offered by us would increase our pro forma as adjusted net tangible book value per share after this offering by \$0.17 and decrease the dilution per share to new investors participating in this offering by \$0.17, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions. A decrease of 1,000,000 shares in the number of shares offered by us would decrease our pro forma as adjusted net tangible book value per share after this offering by \$0.17 and increase the dilution per share to new investors by \$0.17, assuming no change in the assumed initial public offering price per share and after deducting estimated underwriting discounts and commissions.

If the underwriters fully exercise their option to purchase additional shares of common stock in this offering, our pro forma as adjusted net tangible book value per share after this offering would be \$0.95 per share, and the dilution per share to new investors purchasing common stock in this offering would be \$15.05 per share, in each case assuming an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The following table summarizes, on the pro forma as adjusted basis described above, the total number of shares of common stock purchased from us after giving effect to the conversion of our convertible preferred stock into common stock, the total consideration paid or to be paid, and the average price per share paid or to be paid by existing stockholders and by new investors in this offering at an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, before deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percent	Amount	Percent	
Existing stockholders	74,083,105	89.8%	\$ 105,850,268	44.1%	\$ 1.43
New investors	8,400,000	10.2	134,400,000	55.9	\$ 16.00
Total	82,483,105	100.0%	\$ 240,250,268	100.0%	

The table above assumes no exercise of the underwriters' option to purchase additional shares in this offering. If the underwriters fully exercise their option to purchase additional shares in this offering, the number of shares of our common stock held by new investors purchasing common stock in this offering would be increased to 11.5% of the total number of shares of common stock outstanding after this offering, and the number of shares held by existing stockholders would be reduced to 88.5% of the total number of shares of common stock outstanding after this offering.

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 September 30, 2017, with a weighted-average exercise price of \$0.25 per share;
- 14,970,580 shares of common stock issuable upon the exercise of stock options outstanding under our 2011 Stock Incentive Plan as of September 30, 2017, with a weighted-average exercise price of \$4.25 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 September 30, 2017;
- 2,782,265 shares of common stock reserved for future issuance under our 2011 Stock Incentive Plan as of September 30, 2017, which plan will terminate as to new awards upon the closing of this offering; and

- 7,160,685 additional shares of common stock that will become available for issuance in connection with this offering under our 2017 Stock Incentive Plan, of which we expect to grant options to purchase an aggregate of 625,000 shares, with an exercise price per share equal to the initial public offering price in this offering, to certain of our employees and restricted stock units for an aggregate of 28,125 shares, based upon an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, to one of our non-employee directors, in each case upon the commencement of trading of our common stock on the Nasdaq Global Select Market.

To the extent any of the outstanding options are exercised, you will experience further dilution, which may be significant. To the extent all of such outstanding options had been exercised as of September 30, 2017, the pro forma as adjusted net tangible book value per share after this offering would be \$1.27, and the total dilution per share to new investors purchasing common stock in this offering would be \$14.73.

In addition, we may choose to raise additional capital due to market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or securities convertible into equity, the issuance of these securities may result in further dilution to our stockholders.

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, 2014, 2015 and 2016 and the selected consolidated balance sheet data as of December 31, 2015 and 2016 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. The selected consolidated balance sheet data as of December 31, 2014 have been derived from our audited consolidated financial statements not included in this prospectus. The selected consolidated statement of operations data for the nine months ended September 30, 2016 and 2017 and the selected consolidated balance sheet data as of September 30, 2017 have been derived from our unaudited condensed consolidated financial statements included elsewhere in this prospectus and have been prepared on a basis consistent with our audited consolidated financial statements. In the opinion of management, the unaudited data reflect all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of the financial information in those statements. Our historical results are not necessarily indicative of the results to be expected in any future period, and the results for any interim period are not necessarily indicative of results to be expected in any full year. 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,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
(in thousands, except per share amounts)					
Consolidated Statement of Operations Data:					
Revenue:					
Product	\$ 194,358	\$ 247,588	\$ 279,223	\$ 191,763	\$ 205,155
Service	16,920	24,862	36,905	25,139	28,458
Total revenue	<u>211,278</u>	<u>272,450</u>	<u>316,128</u>	<u>216,902</u>	<u>233,613</u>
Cost of revenue(1):					
Product	59,088	74,349	89,340	68,793	62,865
Service	5,917	5,265	8,477	5,983	3,637
Total cost of revenue	<u>65,005</u>	<u>79,614</u>	<u>97,817</u>	<u>74,776</u>	<u>66,502</u>
Gross profit	<u>146,273</u>	<u>192,836</u>	<u>218,311</u>	<u>142,126</u>	<u>167,111</u>
Operating expenses:					
Research and development(1)	25,481	37,155	49,210	37,213	43,912
Sales and marketing(1)	21,409	36,157	36,114	27,289	26,983
General and administrative(1)	10,346	16,453	18,215	13,532	14,387
Total operating expenses	<u>57,236</u>	<u>89,765</u>	<u>103,539</u>	<u>78,034</u>	<u>85,282</u>
Income from operations	89,037	103,071	114,772	64,092	81,829
Other income (expense), net	(2,942)	(1,408)	921	953	(9,858)
Income before provision for income taxes	86,095	101,663	115,693	65,045	71,971
Provision for income taxes	26,387	33,742	27,025	16,228	12,334
Net income	<u>\$ 59,708</u>	<u>\$ 67,921</u>	<u>\$ 88,668</u>	<u>\$ 48,817</u>	<u>\$ 59,637</u>
Cash dividends declared per common share or common share equivalent	<u>\$ 0.3835</u>	<u>\$ —</u>	<u>\$ 2.9197</u>	<u>\$ 0.5891</u>	<u>\$ 1.1774</u>
Net income (loss) attributable to common stockholders(2):					
Basic	<u>\$ 23,287</u>	<u>\$ 27,302</u>	<u>\$ (35,119)</u>	<u>\$ 19,928</u>	<u>\$ 7,689</u>
Diluted	<u>\$ 23,843</u>	<u>\$ 30,402</u>	<u>\$ (35,119)</u>	<u>\$ 20,006</u>	<u>\$ 7,689</u>

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	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
(in thousands, except per share amounts)					
Net income (loss) per share attributable to common stockholders(2):					
Basic	\$ 0.78	\$ 0.86	\$ (1.07)	\$ 0.61	\$ 0.23
Diluted	\$ 0.73	\$ 0.78	\$ (1.07)	\$ 0.47	\$ 0.18
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders(2):					
Basic	29,983	31,740	32,864	32,822	33,657
Diluted	32,683	38,809	32,864	42,137	43,198
Pro forma net income per share attributable to common stockholders (unaudited)(2):					
Basic			\$ 1.09		\$ 0.72
Diluted			\$ 0.97		\$ 0.65
Weighted-average shares used to compute pro forma net income per share attributable to common stockholders (unaudited)(2):					
Basic			81,646		82,439
Diluted			91,333		91,979
Other Financial Data:					
Non-GAAP net income(3)	\$ 62,145	\$ 72,812	\$ 95,032	\$ 53,301	\$ 64,520
Adjusted EBITDA(3)	\$ 94,632	\$ 115,541	\$ 129,084	\$ 74,517	\$ 93,298

(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,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
(in thousands)					
Cost of revenue	\$ 161	\$ 143	\$ 237	\$ 178	\$ 202
Research and development expense	852	1,843	2,306	1,637	1,535
Sales and marketing expense	598	775	1,147	846	801
General and administrative expense	380	4,560	4,614	3,313	3,355
Total stock-based compensation expense	<u>\$1,991</u>	<u>\$7,321</u>	<u>\$8,304</u>	<u>\$ 5,974</u>	<u>\$ 5,893</u>

(2) See Note 14 to our audited consolidated financial statements and Note 12 to our unaudited condensed consolidated financial statements, both included elsewhere in this prospectus, for an explanation of the calculations of basic and diluted net income (loss) per share attributable to common stockholders and pro forma basic and diluted net income per share attributable to common stockholders.

(3) See “—Non-GAAP Financial Measures” for information regarding our use of these non-GAAP financial measures and a reconciliation of such measures to comparable financial measures calculated and presented in accordance with GAAP.

	As of December 31,			As of
	2014	2015	2016	September 30,
	(in thousands)			2017
Consolidated Balance Sheet Data:				
Cash, cash equivalents and marketable securities	\$ 77,155	\$ 92,496	\$ 343,946	\$ 183,519
Working capital ⁽¹⁾	99,237	162,981	286,652	247,182
Total assets	230,815	283,097	583,035	392,235
Long-term debt, including current portion, net of unamortized debt issuance costs	—	7,795	299,751	298,147
Total liabilities	124,636	103,160	557,259	402,962
Convertible preferred stock	97,479	97,479	97,479	97,479
Total stockholders' equity (deficit)	8,700	82,458	(71,703)	(108,206)

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

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 the warrant liability, both of which are non-cash charges, and the tax effect on those excluded items applied using our effective income tax rate for the period. 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; other income (expense), net, which includes changes in the fair value of the warrant liability; 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.

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 net income, which is the most directly comparable financial measure calculated and presented in accordance with GAAP. Some of these limitations are:

- we exclude stock-based compensation expense from each of our non-GAAP financial measures 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;

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- we exclude the changes in the fair value of a 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;
- 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; and
- the expenses and other items that we exclude in our calculations of non-GAAP net income and adjusted EBITDA may differ from the expenses and other items, if any, that other companies may exclude from non-GAAP net income and adjusted EBITDA when they report their operating results.

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,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands)				
Reconciliation of Net Income to Non-GAAP Net Income:					
Net income	\$ 59,708	\$ 67,921	\$ 88,668	\$ 48,817	\$ 59,637
Stock-based compensation	1,991	7,321	8,304	5,974	5,893
Change in fair value of warrant liability	1,523	—	—	—	—
Tax effect of excluded items	(1,077)	(2,430)	(1,940)	(1,490)	(1,010)
Non-GAAP net income	<u>\$ 62,145</u>	<u>\$ 72,812</u>	<u>\$ 95,032</u>	<u>\$ 53,301</u>	<u>\$ 64,520</u>
	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands)				
Reconciliation of Net Income to Adjusted EBITDA:					
Net income	\$ 59,708	\$ 67,921	\$ 88,668	\$ 48,817	\$ 59,637
Stock-based compensation	1,991	7,321	8,304	5,974	5,893
Depreciation and amortization	3,604	5,149	6,008	4,451	5,576
Other income (expense), net	2,942	1,408	(921)	(953)	9,858
Provision for income taxes	26,387	33,742	27,025	16,228	12,334
Adjusted EBITDA	<u>\$ 94,632</u>	<u>\$ 115,541</u>	<u>\$ 129,084</u>	<u>\$ 74,517</u>	<u>\$ 93,298</u>

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 provide 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. In addition, we offer solutions for next-generation distributed and virtualized architectures in cable operator, fixed telecom 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.

We were founded in 2003 with the vision of enabling consumers and enterprises to enjoy ultra-fast speeds and enhanced digital content experiences through their phones, tablets, TVs and other connected devices at home or on the go with ubiquitous and seamless access, regardless of how the user is accessing the Internet. 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:

- the first to market (2005) with a software-centric cable solution leveraging the programmability of field programmable gate arrays, or FPGAs, and general purpose processors;
- the first to market (2008) with a commercially deployed, fully qualified Data Over Cable Service Interface Specification, or DOCSIS, 3.0 cable modem termination system;
- the 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;
- the first to market (2015) with commercially deployed DOCSIS 3.1-compliant solutions supporting speeds of up to 10 gigabits per second; and
- the first to market (2016) with a commercially deployable remote-PHY, or R-PHY, solution.

Our introduction of our CCAP products created substantial growth. For example, our revenue and income from operations were only \$67.0 million and \$10.0 million, respectively, for the year ended December 31, 2013 as compared to \$316.1 million and \$114.8 million, respectively, for the year ended December 31, 2016. Our solutions are commercially deployed in more than 70 countries by more than 400 customers, including regional service providers as well as some of the world's largest Tier 1 broadband service providers, serving millions of subscribers.

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 and profitability. For the year ended December 31, 2015, we generated revenue of \$272.5 million, net income of \$67.9 million and adjusted EBITDA of \$115.5 million, representing increases of 29.0%, 13.8% and 22.1%, respectively, from the corresponding amounts for the year ended December 31, 2014. For the year ended December 31, 2016, we generated revenue of \$316.1 million, net income of \$88.7 million and adjusted EBITDA of \$129.1 million, representing increases of 16.0%, 30.5% and 11.7%, respectively, from the corresponding amounts for the year ended December 31, 2015. For the nine months ended September 30, 2017, we generated revenue of \$233.6 million, net income of \$59.6 million and adjusted EBITDA of \$93.3 million, representing increases of 7.7%, 22.2% and 25.2%, respectively, from the corresponding amounts for the nine months ended September 30, 2016.

Our Business Model

We derive revenue from sales of our products and services. We generate product revenue primarily from sales of our broadband products. The majority of our product revenue is derived from sales of our CCAP solutions, particularly our C100G CCAP. 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 DOCSIS 3.1 capabilities in 2015, both of which run on our Axyom software platform.

We offer a scalable broadband 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. For example, our CCAP solutions converge delivery of voice, video and data services over a single port, resulting in increased capacity and scalability, reduced space and energy consumption and simplified operations and engineering, and the DOCSIS 3.1 capabilities of our CCAP solutions further improve network capacity and throughput by utilizing RF modulation techniques that leverage existing broadband spectrum more efficiently, freeing up spectrum on our customers' networks for other potential revenue-generating services. 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, such as DOCSIS 3.1, 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 cable 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. Our top 20 customers over the period from 2013 to September 30, 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 54% of all customers that have made initial purchases from us since January 1, 2013 have made additional purchases from us after the initial quarter of purchase. These customers purchased on average 3.6 times, 6.2 times, 9.9 times and 14.2 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 since January 1, 2013, the 20 largest, as measured by their total purchases from us, purchased on average 4.0 times, 7.3 times, 11.7 times and 23.5 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 400 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, 2014, 2015 and 2016 and the nine months ended September 30, 2017, sales to existing customers represented 78%, 63%, 74% and 98% 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,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
Revenue by geographic region:					
North America	50.8%	20.0%	58.2%	59.2%	53.7%
Latin America	14.2%	32.1%	15.0%	15.2%	13.5%
Europe, Middle East and Africa	15.3%	27.8%	14.3%	12.6%	19.2%
Asia-Pacific	19.7%	20.1%	12.5%	13.0%	13.6%
Total	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

Non-GAAP Financial Measures

In addition to the measures presented in our consolidated financial statements, we use the following non-GAAP financial measures to evaluate our operating performance, to identify trends affecting our business, and to establish budgets and develop operational goals for managing our business.

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
			(in thousands)		
Non-GAAP net income	\$62,145	\$ 72,812	\$ 95,032	\$ 53,301	\$ 64,520
Adjusted EBITDA	\$94,632	\$115,541	\$129,084	\$ 74,517	\$ 93,298

These financial measures are non-GAAP financial measures. Please see “Selected Consolidated Financial Data—Non-GAAP Financial Measures” for information regarding the limitations of using these financial measures and for reconciliations of non-GAAP net income and adjusted EBITDA to net income, the most directly comparable financial measure calculated and presented in accordance with GAAP.

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.

Our product revenue consisted of the following:

	Year Ended December 31,								
	2014			2015			2016		
	Sales of Broadband Products	Capacity Expansions	Total Product Revenue	Sales of Broadband Products	Capacity Expansions	Total Product Revenue	Sales of Broadband Products	Capacity Expansions	Total Product Revenue
						(dollars in thousands)			
Product revenue	<u>\$ 187,218</u>	<u>\$ 7,140</u>	<u>\$194,358</u>	<u>\$ 226,703</u>	<u>\$ 20,885</u>	<u>\$247,588</u>	<u>\$ 209,751</u>	<u>\$ 69,472</u>	<u>\$279,223</u>
Percentage of product revenue	96.3%	3.7%	100.0%	91.6%	8.4%	100.0%	75.1%	24.9%	100.0%

	Nine Months Ended September 30,					
	2016			2017		
	Sales of Broadband Products	Capacity Expansions	Total Product Revenue	Sales of Broadband Products	Capacity Expansions	Total Product Revenue
	(dollars in thousands)					
Product revenue	\$ 160,711	\$ 31,052	\$ 191,763	\$ 141,799	\$ 63,356	\$ 205,155
Percentage of product revenue	83.8%	16.2%	100.0%	69.1%	30.9%	100.0%

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 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.

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 of compliance 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.

We classified warrants for the purchase of shares of our common stock as a liability on our consolidated balance sheets due to the anti-dilution provisions in those warrants. The warrants were initially recorded at fair value on date of issuance and were subsequently remeasured to fair value at each balance sheet date. Changes in

fair value of these warrants were recognized as a component of other income (expense), net in our consolidated statements of operations and comprehensive income, and we continued to adjust the liability for changes in fair value until the warrants were exercised on March 31, 2014.

We expect that our other income (expense), net for 2017 will include approximately \$16.2 million of additional interest expense as compared to 2016 attributable to borrowings under our term loan facility entered into in December 2016. As a result of this expected increase, we expect that interest expense for 2017 will be higher than for 2016 both in absolute dollars and as a percentage of revenue.

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.

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 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 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,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands)				
Revenue:					
Product	\$ 194,358	\$ 247,588	\$ 279,223	\$ 191,763	\$ 205,155
Service	16,920	24,862	36,905	25,139	28,458
Total revenue	211,278	272,450	316,128	216,902	233,613
Cost of revenue(1):					
Product	59,088	74,349	89,340	68,793	62,865
Service	5,917	5,265	8,477	5,983	3,637
Total cost of revenue	65,005	79,614	97,817	74,776	66,502
Gross profit	146,273	192,836	218,311	142,126	167,111
Operating expenses:					
Research and development(1)	25,481	37,155	49,210	37,213	43,912
Sales and marketing(1)	21,409	36,157	36,114	27,289	26,983
General and administrative(1)	10,346	16,453	18,215	13,532	14,387
Total operating expenses	57,236	89,765	103,539	78,034	85,282
Income from operations	89,037	103,071	114,772	64,092	81,829
Other income (expense), net	(2,942)	(1,408)	921	953	(9,858)
Income before provision for income taxes	86,095	101,663	115,693	65,045	71,971
Provision for income taxes	26,387	33,742	27,025	16,228	12,334
Net income	\$ 59,708	\$ 67,921	\$ 88,668	\$ 48,817	\$ 59,637

(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,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands)				
Cost of revenue	\$ 161	\$ 143	\$ 237	\$ 178	\$ 202
Research and development expense	852	1,843	2,306	1,637	1,535
Sales and marketing expense	598	775	1,147	846	801
General and administrative expense	380	4,560	4,614	3,313	3,355
Total stock-based compensation expense	\$1,991	\$7,321	\$8,304	\$ 5,974	\$ 5,893

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	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(as a percentage of total revenue)				
Revenue:					
Product	92%	91%	88%	88%	88%
Service	8	9	12	12	12
Total revenue	100	100	100	100	100
Cost of revenue:					
Product	28	27	28	32	27
Service	3	2	3	3	2
Total cost of revenue	31	29	31	34	28
Gross profit	69	71	69	66	72
Operating expenses:					
Research and development	12	14	16	17	19
Sales and marketing	10	13	11	13	12
General and administrative	5	6	6	6	6
Total operating expenses	27	33	33	36	37
Income from operations	42	38	36	30	35
Other income (expense), net	(1)	(1)	—	—	(4)
Income before provision for income taxes	41	37	37	30	31
Provision for income taxes	12	12	9	7	5
Net income	28%	25%	28%	23%	26%

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

Nine Months Ended September 30, 2016 Compared to Nine Months Ended September 30, 2017

	Nine Months Ended September 30,				Change	
	2016		2017		Amount	%
	Amount	% of Total	Amount	% of Total		
	(dollars in thousands)					
Revenue:						
Product	\$ 191,763	88.4%	\$ 205,155	87.8%	\$ 13,392	7.0%
Service	25,139	11.6%	28,458	12.2%	3,319	13.2%
Total revenue	<u>\$ 216,902</u>	<u>100.0%</u>	<u>\$ 233,613</u>	<u>100.0%</u>	<u>\$ 16,711</u>	<u>7.7%</u>
Revenue by geographic region:						
North America	\$ 128,298	59.2%	\$ 125,396	53.7%	\$ (2,902)	(2.3)%
Latin America	33,043	15.2%	31,423	13.5%	(1,620)	(4.9)%
Europe, Middle East and Africa	27,377	12.6%	44,906	19.2%	17,529	64.0%
Asia-Pacific	28,184	13.0%	31,888	13.6%	3,704	13.1%
Total revenue	<u>\$ 216,902</u>	<u>100.0%</u>	<u>\$ 233,613</u>	<u>100.0%</u>	<u>\$ 16,711</u>	<u>7.7%</u>

The increase in product revenue was due to an increase in sales of our software-centric broadband products in Europe, Middle East and Africa primarily due to an increase of \$14.3 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, and an increase of \$2.0 million in sales to new customers, which predominantly deployed our CCAP solution that includes DOCSIS 3.1 capabilities. These increases were partially offset by an

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aggregate decrease of \$2.9 million in product sales in all other regions resulting primarily from decreases in purchases by existing customers in those regions, 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 \$4.4 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

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	%
(dollars in thousands)				
Cost of revenue:				
Product	\$68,793	\$62,865	\$(5,928)	(8.6)%
Service	5,983	3,637	(2,346)	(39.2)%
Total cost of revenue	<u>\$74,776</u>	<u>\$66,502</u>	<u>\$(8,274)</u>	(11.1)%

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 \$1.5 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 and a \$1.0 million decrease in subcontracted professional services.

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	Gross Margin (bps)
(dollars in thousands)				
Gross profit:				
Product	\$ 122,970	\$ 142,290	\$ 19,320	530
Service	19,156	24,821	5,665	1,100
Total gross profit	<u>\$ 142,126</u>	<u>\$ 167,111</u>	<u>\$ 24,985</u>	600

The increase in product gross margin was primarily due to lower cost of goods sold as a result of an increase in sales of software-based capacity expansions and a decrease in sales of our hardware-based broadband products.

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

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	%
(dollars in thousands)				
Research and development	\$37,213	\$43,912	\$6,699	18.0%
Percentage of revenue	17.2%	18.8%		

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The increase in research and development expense was due to a \$5.1 million increase in personnel-related costs (including the effect of a \$0.1 million decrease in stock-based compensation expense) as a result of the increase in the headcount of our research and development personnel from 321 to 381 to support the development of our new wireless and software-centric broadband products and to enhance our existing software-centric broadband products, a \$1.0 million increase in depreciation expense for research and development related assets, a \$0.5 million increase in facilities and infrastructure expenses and a \$0.1 million increase in prototype development costs for new broadband products.

Sales and Marketing

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	%
	(dollars in thousands)			
Sales and marketing	\$27,289	\$26,983	\$ (306)	(1.1)%
Percentage of revenue	12.6%	11.6%		

The slight decrease in sales and marketing expense was due to a \$0.9 million decrease in marketing costs related to trade shows and events to promote our solutions, a \$0.5 million decrease in personnel-related costs and a \$0.1 million decrease in facilities and infrastructure expenses, all partially offset by a \$1.2 million increase in sales agent commissions.

General and Administrative

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	%
	(dollars in thousands)			
General and administrative	\$13,532	\$14,387	\$ 855	6.3%
Percentage of revenue	6.2%	6.2%		

The increase in general and administrative expense was primarily due to a \$0.6 million increase in personnel-related costs to support the continued growth in our business, a \$0.2 million increase in professional service fees and a \$0.1 million increase in facilities and infrastructure expenses.

Other Income (Expense), Net

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	%
	(dollars in thousands)			
Other income (expense), net	\$ 953	\$(9,858)	\$ (10,811)	(1,134.4)%
Percentage of revenue	0.4%	(4.2)%		

The change from a net other income of \$1.0 million to a net other expense of \$9.9 million was primarily due to a \$12.7 million increase in interest expense attributable to our term loan facility entered into in December 2016, partially offset by a \$0.9 million increase in interest income due to an increase in interest rates and an increase in our portfolio of cash equivalents and a \$0.8 million increase in foreign currency gains due to appreciation of the Euro and the impact thereof on our foreign-denominated cash and receivables.

Provision for Income Taxes

	Nine Months Ended September 30,		Change	
	2016	2017	Amount	%
	(dollars in thousands)			
Provision for income taxes	\$16,228	\$12,334	\$ (3,894)	(24.0)%
Effective tax rate	24.9%	17.1%		

The 7.8% decrease in our effective tax rate resulted from the tax benefits of equitable adjustment payments to holders of our stock-based awards and the favorable benefit of the foreign rate differential due to the restructuring of our international operations.

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

Revenue

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

Cost of Revenue and Gross Profit

	Year Ended December 31,		Change	
	2015	2016	Amount	%
	(dollars in thousands)			
Cost of revenue:				
Product	\$74,349	\$89,340	\$14,991	20.2%
Service	5,265	8,477	3,212	61.0%
Total cost of revenue	<u>\$79,614</u>	<u>\$97,817</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	
	2015	2016	Amount	Gross Margin (bps)
	Amount	Amount		
	(dollars in thousands)			
Gross profit:				
Product	\$ 173,239	\$ 189,883	\$ 16,644	(200)
Service	19,597	28,428	8,831	(180)
Total gross profit	<u>\$ 192,836</u>	<u>\$ 218,311</u>	<u>\$ 25,475</u>	(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	
	2015	2016	Amount	%
	(dollars in thousands)			
Research and development	\$37,155	\$49,210	\$12,055	32.4%
Percentage of revenue	13.6%	15.6%		

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

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

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

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

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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.

Year Ended December 31, 2014 Compared to Year Ended December 31, 2015

Revenue

	Year Ended December 31,				Change	
	2014		2015			
	Amount	% of Total	Amount	% of Total	Amount	%
(dollars in thousands)						
Revenue:						
Product	\$ 194,358	92.0%	\$ 247,588	90.9%	\$ 53,230	27.4%
Service	16,920	8.0%	24,862	9.1%	7,942	46.9%
Total revenue	<u>\$ 211,278</u>	<u>100.0%</u>	<u>\$ 272,450</u>	<u>100.0%</u>	<u>\$ 61,172</u>	29.0%
Revenue by geographic region:						
North America	\$ 107,376	50.8%	\$ 54,518	20.0%	\$ (52,858)	(49.2)%
Latin America	29,915	14.2%	87,382	32.1%	57,467	192.1%
Europe, Middle East and Africa	32,407	15.3%	75,767	27.8%	43,360	133.8%
Asia-Pacific	41,580	19.7%	54,783	20.1%	13,203	31.8%
Total revenue	<u>\$ 211,278</u>	<u>100.0%</u>	<u>\$ 272,450</u>	<u>100.0%</u>	<u>\$ 61,172</u>	29.0%

The increase in product revenue was primarily due to product sales to new customers that deployed our CCAP solution of \$42.4 million in Latin America, \$16.8 million in Europe, Middle East and Africa, and \$13.8 million in Asia-Pacific; an increase in product sales of \$8.9 million to existing customers in such regions; and recognition of previously deferred revenue of \$23.1 million upon the product acceptance by a new customer in Europe that deployed our CCAP solution. These increases were partially offset by a decrease in product sales in North America of \$51.9 million resulting primarily from decreases in purchases by customers in North America 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 \$12.7 million increase in maintenance and support services revenue as a result of an increase in our installed base of customers through the addition of new customers and from customers renewing their maintenance and support service contracts, which was partially offset by a \$4.7 million decrease in professional services revenue, which was primarily due to revenue recognized in 2014 in connection with one major professional services engagement.

Cost of Revenue and Gross Profit

	Year Ended December 31,		Change	
	2014	2015		
	Amount	Amount	Amount	%
(dollars in thousands)				
Cost of revenue:				
Product	\$59,088	\$74,349	\$15,261	25.8%
Service	5,917	5,265	(652)	(11.0)%
Total cost of revenue	<u>\$65,005</u>	<u>\$79,614</u>	<u>\$14,609</u>	<u>22.5%</u>

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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 decrease in cost of service revenue was primarily due to a \$1.8 million decrease in subcontracted professional services related to new customer deployments of our CCAP solution, partially offset by a \$0.9 million increase in personnel-related costs resulting from hiring additional employees.

	Year Ended December 31,				Change	
	2014		2015		Amount	Gross Margin (bps)
	Amount	Gross Margin	Amount	Gross Margin		
	(dollars in thousands)					
Gross profit:						
Product	\$ 135,270	69.6%	\$ 173,239	70.0%	\$ 37,969	40
Service	11,003	65.0%	19,597	78.8%	8,594	1,380
Total gross profit	<u>\$ 146,273</u>	69.2%	<u>\$ 192,836</u>	70.8%	<u>\$ 46,563</u>	160

The slight increase in product gross margin was primarily due to an increase in sales of software-based capacity expansions during the year ended December 31, 2015.

The increase in service gross margin was due to a decrease in sales of lower-margin professional services related to new customer deployments of our CCAP solution during 2015 as compared to 2014.

Research and Development

	Year Ended December 31,		Change	
	2014	2015	Amount	%
	(dollars in thousands)			
Research and development	\$25,481	\$37,155	\$11,674	45.8%
Percentage of revenue	12.1%	13.6%		

The increase in research and development expense was due to a \$8.9 million increase in personnel-related costs (including a \$1.0 million increase in stock-based compensation expense) as a result of the increase in headcount of our research and development personnel from 187 to 256 to support the development of our new wireless and software-centric broadband products and to enhance our existing software-centric broadband products, a \$1.5 million increase in facilities and infrastructure expenses and a \$1.1 million increase in hardware prototype development costs for new broadband products.

Sales and Marketing

	Year Ended December 31,		Change	
	2014	2015	Amount	%
	(dollars in thousands)			
Sales and marketing	\$21,409	\$36,157	\$14,748	68.9%
Percentage of revenue	10.1%	13.3%		

The increase in sales and marketing expense was due to a \$7.5 million increase in sales agent commissions related to an increase in sales in Latin America, a \$5.7 million increase in personnel-related costs (including a \$0.2 million increase in stock-based compensation expense) as a result of the increase in the headcount of our

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sales and marketing personnel from 67 to 94 in order to increase the sales force associated with our software-centric broadband products and to start the development of a new sales force assigned to our new wireless solutions, a \$0.8 million increase in facilities and infrastructure expenses and a \$0.5 million increase in marketing costs related to trade shows and events to promote our solutions.

General and Administrative

	Year Ended December 31,		Change	
	2014	2015	Amount	%
	(dollars in thousands)			
General and administrative	\$10,346	\$16,453	\$6,107	59.0%
Percentage of revenue	4.9%	6.0%		

The increase in general and administrative expense was primarily due to a \$4.0 million increase in stock-based compensation expense, a \$1.3 million increase in personnel-related costs due to an increase in the headcount of personnel in our general and administrative functions due to the growth in our business and a \$0.7 million increase in professional fees.

Other Income (Expense), Net

	Year Ended December 31,		Change	
	2014	2015	Amount	%
	(dollars in thousands)			
Other income (expense), net	\$(2,942)	\$(1,408)	\$1,534	52.1%
Percentage of revenue	1.4%	0.5%		

The change from a net other expense of \$2.9 million to a net other expense of \$1.4 million was due to a \$1.5 million decrease in other expense associated with our revaluation in 2014 of a liability for a common stock warrant, which was exercised on March 31, 2014.

Provision for Income Taxes

	Year Ended December 31,		Change	
	2014	2015	Amount	%
	(dollars in thousands)			
Provision for income taxes	\$26,387	\$33,742	\$7,355	27.9%
Effective tax rate	30.6%	33.2%		

The increase in the effective tax rate of 2.6% primarily resulted from a decrease in the benefit of the foreign tax rate differential.

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 eleven fiscal quarters in the period ended September 30, 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.

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	Three Months Ended										
	Mar. 31, 2015	June 30, 2015	Sept. 30, 2015	Dec. 31, 2015	Mar. 31, 2016	June 30, 2016	Sept. 30, 2016	Dec. 31, 2016	Mar. 31, 2017	June 30, 2017	Sept. 30, 2017
	(in thousands)										
Revenue:											
Product	\$ 55,884	\$ 68,276	\$ 42,007	\$ 81,421	\$ 76,433	\$ 56,777	\$ 58,553	\$ 87,460	\$ 65,209	\$ 55,750	\$ 84,196
Service	3,505	6,814	6,057	8,486	6,996	8,148	9,995	11,766	7,520	10,875	10,063
Total revenue	59,389	75,090	48,064	89,907	83,429	64,925	68,548	99,226	72,729	66,625	94,259
Cost of revenue:											
Product	16,379	18,783	13,322	25,865	27,103	22,427	19,263	20,547	19,132	19,909	23,824
Services	1,141	1,233	1,278	1,613	1,408	1,997	2,578	2,494	1,257	938	1,442
Total cost of revenue	17,520	20,016	14,600	27,478	28,511	24,424	21,841	23,041	20,389	20,847	25,266
Gross profit	41,869	55,074	33,464	62,429	54,918	40,501	46,707	76,185	52,340	45,778	68,993
Operating expenses:											
Research and development	8,270	9,284	9,854	9,747	12,189	12,573	12,451	11,997	14,468	14,227	15,217
Sales and marketing	7,129	7,155	9,592	12,281	8,644	9,125	9,520	8,825	10,080	8,156	8,747
General and administrative	3,600	4,671	4,287	3,895	4,347	4,665	4,520	4,683	4,995	4,526	4,866
Total operating expenses	18,999	21,110	23,733	25,923	25,180	26,363	26,491	25,505	29,543	26,909	28,830
Income from operations	22,870	33,964	9,731	36,506	29,738	14,138	20,216	50,680	22,797	18,869	40,163
Other income (expense), net	(3,464)	2,016	(113)	153	319	278	356	(32)	(3,540)	(2,766)	(3,552)
Income before provision for (benefit from) income taxes	19,406	35,980	9,618	36,659	30,057	14,416	20,572	50,648	19,257	16,103	36,611
Provision for (benefit from) income taxes	6,757	13,278	3,370	10,337	8,345	2,412	5,471	10,797	1,103	(1,057)	12,288
Net income	\$ 12,649	\$ 22,702	\$ 6,248	\$ 26,322	\$ 21,712	\$ 12,004	\$ 15,101	\$ 39,851	\$ 18,154	\$ 17,160	\$ 24,323

	Three Months Ended										
	Mar. 31, 2015	June 30, 2015	Sept. 30, 2015	Dec. 31, 2015	Mar. 31, 2016	June 30, 2016	Sept. 30, 2016	Dec. 31, 2016	Mar. 31, 2017	June 30, 2017	Sept. 30, 2017
	(as a percentage of total revenue)										
Revenue:											
Product	94%	91%	87%	91%	92%	87%	85%	88%	90%	84%	89%
Service	6	9	13	9	8	13	15	12	10	16	11
Total revenue	100	100	100	100	100	100	100	100	100	100	100
Cost of revenue:											
Product	28	25	28	29	32	35	28	21	26	30	25
Service	2	2	3	2	2	3	4	3	2	1	2
Total cost of revenue	30	27	30	31	34	38	32	23	28	31	27
Gross profit	70	73	70	69	66	62	68	77	72	69	73
Operating expenses:											
Research and development	14	12	21	11	15	19	18	12	20	21	16
Sales and marketing	12	10	20	14	10	14	14	9	14	12	9
General and administrative	6	6	9	4	5	7	7	5	7	7	5
Total operating expenses	32	28	49	29	30	41	39	26	41	40	31
Income from operations	39	45	20	41	36	22	29	51	31	28	43
Other income (expense), net	(6)	3	—	—	—	—	1	—	(5)	(4)	(4)
Income before provision for (benefit from) income taxes	33	48	20	41	36	22	30	51	26	24	39
Provision for (benefit from) income taxes	11	18	7	11	10	4	8	11	2	(2)	13
Net income	21%	30%	13%	29%	26%	18%	22%	40%	25%	26%	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.

Product revenue during the three months ended June 30, 2015 included the recognition of previously deferred product revenue of \$23.1 million upon the product acceptance by a new customer in Europe that deployed our CCAP solution. The cost of product revenue for the same period also included the recognition of previously deferred inventory costs related to this product acceptance. The increase in product revenue for 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 March 31, 2016 and June 30, 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, 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 352, 481, 604 and 652 as of December 31, 2014, 2015 and 2016 and September 30, 2017, 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.

Sales and marketing expenses during the three months ended September 30, 2015, December 31, 2015 and March 31, 2017 included sales agent commissions of \$3.5 million, \$4.4 million and \$2.2 million, respectively, related to sales to certain customers in the Latin America and Asia-Pacific regions.

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, 2016 and September 30, 2017, the interest rate for the term loan facility was 5.00% and 5.33% per annum, respectively, which was based on a one-month Eurodollar rate at the applicable floor of 1.00% and the three-month Eurodollar rate of 1.33% per annum, respectively, plus the applicable margin of 4.00% per annum.

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for Eurodollar rate loans. Other income (expense), net for the three months ended December 31, 2016, March 31, 2017, June 30, 2017 and September 30, 2017 included interest expense of \$0.5 million, \$4.0 million, \$4.1 million and \$4.3 million, respectively, related to the term loan facility.

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, 2015 and 2016 and September 30, 2017 as well as our net cash flows for the years ended December 31, 2014, 2015 and 2016 and for the nine months ended September 30, 2016 and 2017:

	As of December 31,		As of
	2015	2016	September 30,
	(in thousands)		
Consolidated Balance Sheet Data:			
Cash, cash equivalents and marketable securities	\$ 92,496	\$ 343,946	\$ 183,519
Working capital	162,981	286,652	247,182

	Year Ended December 31,			Nine Months Ended September 30,	
	2014	2015	2016	2016	2017
	(in thousands)				
Consolidated Cash Flow Data:					
Net cash provided by operating activities	\$ 60,348	\$ 24,602	\$ 110,780	\$ 124,069	\$ 49,054
Net cash provided by (used in) investing activities	(4,030)	(15,503)	(21,811)	(6,159)	9,886
Net cash provided by (used in) financing activities	(21,695)	7,304	149,368	(48,146)	(205,750)

As of September 30, 2017, we had cash and cash equivalents of \$183.5 million and net accounts receivable of \$103.1 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 September 30, 2017.

Of our total cash and cash equivalents of \$183.5 million as of September 30, 2017, \$32.7 million was held by our foreign subsidiaries. We intend to utilize the cash and cash equivalents held by our foreign subsidiaries to support our business growth in the regions in which they operate. If we were to repatriate to the U.S. the cash and cash equivalents held by these foreign subsidiaries, we would need to accrue and pay U.S. income taxes on the cash amounts repatriated.

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 September 30, 2017, our board of directors has declared a special dividend on four 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 \$27.3 million, \$0.3 million, \$137.4 million and \$164.3 million in the years ended December 31, 2014, 2015 and 2016 and the nine months ended September 30, 2017, respectively. The equitable adjustment payments totaled \$1.6 million, \$0.4 million, \$4.9 million and \$33.9 million in the years ended December 31, 2014, 2015 and 2016 and the nine months ended September 30, 2017, respectively. As of September 30, 2017, there were \$9.2 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 following the closing of this offering. 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 nine months ended September 30, 2017, cash provided by operating activities was \$49.1 million, primarily resulting from our net income of \$59.6 million, net non-cash charges of \$13.5 million and net cash used by changes in our operating assets and liabilities of \$24.1 million. The net cash used by changes in our operating assets and liabilities during the nine months ended September 30, 2017 was primarily due to a \$16.7 million decrease in accounts payable primarily attributable to timing of our payments for purchases of inventory; a \$15.3 million decrease in deferred revenue primarily due to recognition of \$8.5 million of revenue upon the expiration of trade-in rights for an existing customer in North America and recognition of \$5.5 million of revenue upon the product acceptance of an existing customer in the Asia-Pacific region; a \$4.6 million decrease in accrued income taxes due to the timing of tax payments; and a \$2.3 million decrease in accrued expenses and other current liabilities. These uses of cash were partially offset by a \$13.1 million decrease in inventory due to shipments of inventory to customers and a \$1.7 million decrease in prepaid expenses and other current assets.

During the nine months ended September 30, 2016, cash provided by operating activities was \$124.1 million, primarily resulting from our net income of \$48.8 million, net non-cash charges of \$6.4 million and net cash provided by changes in our operating assets and liabilities of \$68.8 million. The net cash provided by changes in our operating assets and liabilities during the nine months ended September 30, 2016 was primarily due to a \$24.6 million decrease in accounts receivable due to the timing of billings and collections during the period and a higher proportion of our sales in geographic regions with shorter payment terms, a \$22.3 million increase in deferred revenue due to the deferral of the revenue recognition for certain sales transactions resulting from the customer acceptance provisions of those arrangements and an increase in sales of maintenance and support service contracts as a result of an increase in our installed base, a \$15.6 million increase in accounts payable primarily attributable to the timing of our payments for the purchases of inventory and a \$11.5 million increase in accrued expenses and other current liabilities, which included an increase of \$13.9 million for accrued customer incentives, all partially offset by a \$4.9 million decrease in accrued income taxes.

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.

During the year ended December 31, 2014, cash provided by operating activities was \$60.3 million, primarily resulting from our net income of \$59.7 million and net cash provided by changes in our operating assets and liabilities of \$1.9 million, both partially offset by net non-cash gains of \$1.2 million. The net cash provided by changes in our net operating assets and liabilities during the year ended December 31, 2014 was primarily due to a \$59.4 million increase in deferred revenue due primarily to the deferral of the revenue recognition for several sales transactions resulting from the customer acceptance provisions of those arrangements, a \$13.9 million increase in accrued income taxes and an \$8.0 million increase in accrued expenses and other current liabilities, which included an increase of \$6.6 million for personnel-related accrued liabilities, such as accrued salaries and bonuses, due to the growth in our headcount. These sources of cash were partially offset by a \$46.6 million increase in accounts receivable as a result of an increase in sales and the timing of the related collections, a \$22.1 million increase in inventory due to anticipated growth in our business, and a \$6.6 million decrease in accounts payable primarily attributable to the timing of our payments for the purchases of inventory.

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 nine months ended September 30, 2017 was \$9.9 million and consisted of \$14.6 million of proceeds from maturities of marketable securities, partially offset by \$4.7 million for purchases of property and equipment.

Net cash used in investing activities during the nine months ended September 30, 2016 was \$6.2 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.

Net cash used in investing activities during year ended December 31, 2014 was \$4.0 million for purchases of property and equipment.

Financing Activities

Net cash used in financing activities during the nine months ended September 30, 2017 was \$205.8 million and consisted of dividend and equitable adjustment payments of \$198.2 million, employee taxes paid related to net share settlement of restricted stock units of \$3.8 million, principal repayments of debt of \$2.5 million and initial public offering costs of \$1.5 million, all partially offset by proceeds from the exercise of stock options of \$0.2 million.

Net cash used in financing activities during the nine months ended September 30, 2016 was \$48.1 million and consisted primarily of dividend payments of \$47.8 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.

Net cash used in financing activities during the year ended December 31, 2014 was \$21.7 million and primarily consisted of dividend and equitable adjustment payments of \$28.9 million, partially offset by proceeds from the exercise of stock options and a common stock warrant totaling \$6.7 million.

Working Capital Facility and Commercial Mortgage

In April 2014, we entered into a revolving credit agreement with Bank of America, which, as amended in 2016, provided for borrowings of up to \$25.0 million, subject to certain limitations. Borrowings under the revolver accrued interest, at our election, at either (1) the bank's prime rate or (2) LIBOR plus two percentage points, due quarterly in arrears. We were required to pay a fee of 0.20% per year, payable quarterly in arrears, on the unused amount of the revolver. The revolver was scheduled to mature on June 30, 2019 but was earlier terminated by us on December 20, 2016.

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, 2016 and September 30, 2017. As of December 31, 2016 and September 30, 2017, the outstanding principal amount under the mortgage loan was \$7.6 million and \$7.3 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, 2016 and September 30, 2017, we had borrowings of \$300.0 million and \$297.8 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. The applicable margin for borrowings under the revolving credit facility is 2.00% per annum for Eurodollar rate loans and 1.00% per annum for base rate loans, subject to reduction based on various factors, including our completion of this offering and 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, 2016 and September 30, 2017, the interest rate on the term loans was 5.00% and 5.33%, respectively, per annum, which was based on a one-month Eurodollar rate at the applicable floor of 1.00% and the three-month Eurodollar rate of 1.33%, respectively, 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.

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, 2016 and September 30, 2017. As of December 31, 2016 and September 30, 2017, 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, 2016.

	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⁾	\$ 402,903	\$ 18,150	\$ 35,846	\$ 35,278	\$ 313,629
Debt obligations—Commercial mortgage ⁽²⁾	8,448	556	1,112	6,780	—
Operating leases ⁽³⁾	2,574	561	1,222	791	—
Total	<u>\$ 413,925</u>	<u>\$ 19,267</u>	<u>\$ 38,180</u>	<u>\$ 42,849</u>	<u>\$ 313,629</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 5.00% per annum, which was the interest rate in effect as of December 31, 2016.
- (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 and Ireland under operating leases that expire at various dates through 2026, with a right to terminate in 2021. In addition, in February 2017, we entered into a lease for office space in Spain under a non-cancelable operating lease that expires in January 2022. The minimum lease payments due under the lease are approximately \$42,700 during the year ending December 31, 2017, \$102,500 in total during the years ending December 31, 2018 and 2019, \$102,500 in total during the years ending December 31, 2020 and 2021, and \$4,300 thereafter. Such amounts are not reflected in the table.

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.

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.

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 Accounting Standards Codification, or 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 BESP, 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 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 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 September 30, 2017, we had foreign currency forward contracts outstanding with notional amounts totaling 3.3 million euros maturing in the fourth quarter of 2017 and first quarter of 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 and September 30, 2017, we recorded an asset of \$0.1 million and \$5,000, respectively, and a liability of \$0.1 million and \$12,000, 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.

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.

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.

Valuation of Common Stock

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 has been 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.

The third-party valuations were performed at various dates, which resulted in valuations of our common stock of \$8.39 per share as of October 23, 2015, \$10.84 per share as of April 30, 2016, \$12.24 per share as of October 31, 2016 (in the case of the valuation as of October 31, 2016, giving pro forma effect to our borrowing in December 2016 of \$300.0 million under our term loan facility as well as the special dividend of \$171.4 million declared by our board of directors in December 2016 and cash payments of \$28.6 million to holders of our stock options, SARs and RSUs approved by our board of directors as an equitable adjustment in connection with such dividend) and \$11.25 per share as of April 30, 2017 (in the case of the valuation as of April 30, 2017, giving pro forma effect to the special dividend of \$87.1 million declared by our board of directors in May 2017 and cash payments of \$12.9 million to holders of our stock options, SARs and RSUs approved by our board of directors as an equitable adjustment in connection with such dividend). In addition to considering the results of these third-party valuations, our board of directors considered various objective and subjective factors to determine the fair value of our common stock as of each grant date, which may be a date later than the most recent third-party valuation date, including:

- our historical operating and financial performance;

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- the market performance of comparable publicly traded companies within our industry;
- external market conditions affecting the networking industry, and trends within the networking industry;
- the identification and analysis of mergers and acquisitions of comparable companies;
- the prices, rights, preferences and privileges of our convertible preferred stock relative to the common stock;
- the likelihood of achieving a liquidity event such as an initial public offering or sale given prevailing market conditions and the nature and history of our business;
- any adjustments necessary to recognize a lack of marketability for our common stock;
- our financial position, including cash on hand, and our historical and forecasted performance and operating results; and
- U.S. and global economic market conditions.

The assumptions underlying these valuations represent management's best estimates. There are significant judgments and estimates inherent in the determination of the fair value of our common stock. These judgments and estimates include assumptions regarding our future operating performance, the timing of a potential IPO or other liquidity event and the determination of the appropriate valuation method at each valuation date. If we had made different assumptions, our stock-based compensation expense, net income and net income (loss) per share attributable to common stockholders could have been significantly different.

Once a public trading market for our common stock has been established in connection with the closing of this offering, it will no longer be necessary for our board of directors to estimate the fair value of our common stock in connection with our accounting for stock-based awards, as the fair value of our common stock will be its trading price in the public market.

Awards Granted

The following table summarizes by grant date the number of shares of common stock subject to stock options, RSUs and SARs granted from January 1, 2016 through the date of this prospectus, as well as the associated per share exercise price or reference price and the estimated fair value per share of our common stock on each grant date:

Grant Date	Type of Award	Number of Shares Underlying Awards	Per Share Exercise Price of Options or SARs	Per Share Fair Value of Common Stock on Grant Date	Per Share Estimated Fair Value of Awards
March 26, 2016	Options	827,315	\$ 8.39	\$ 8.39	\$ 3.36
March 26, 2016	RSUs	244,470	N/A	\$ 8.39	\$ 8.39
March 28, 2016	Options	302,500	\$ 8.39	\$ 8.39	\$ 3.42
July 7, 2016	Options	397,500	\$ 10.84	\$ 10.84	\$ 4.37
September 6, 2016	Options	251,700	\$ 10.84	\$ 10.84	\$ 4.17
September 6, 2016	SARs	30,000	\$ 10.84	\$ 10.84	\$ 4.10
January 13, 2017	Options	267,500	\$ 12.24	\$ 12.24	\$ 4.95
January 13, 2017	SARs	110,000	\$ 12.24	\$ 12.24	\$ 4.52
January 31, 2017	RSUs	176,090	N/A	\$ 12.24	\$ 12.24
January 31, 2017	Options	595,920	\$ 12.24	\$ 12.24	\$ 4.91
May 15, 2017	RSUs	15,000	N/A	\$ 11.25	\$ 11.25
May 15, 2017	Options	185,000	\$ 11.25	\$ 11.25	\$ 4.43
September 29, 2017	Options	212,500	\$ 11.25	\$ 11.25	\$ 4.19

Stock-Based Award Grants in Connection with Initial Public Offering

We expect that our board of directors will approve, 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 initial public offering price in this offering, to certain of our employees and restricted stock units for an aggregate of 28,125 shares of common stock, based upon an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, to one of our non-employee directors.

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, 2015 and 2016 and September 30, 2017, 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

We have reviewed all recently issued standards and have determined that, other than as disclosed in Note 2 to our audited consolidated financial statements and Note 2 to our unaudited condensed consolidated financial statements, both appearing at the end of this prospectus, such standards will not have a material impact on our consolidated financial statements or do not otherwise apply to our operations.

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 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, 2014, 2015 and 2016 and the nine months ended September 30, 2016 and 2017, we incurred foreign currency transaction gains (losses) of (\$3.2) million, (\$3.0) million, (\$0.3) million, \$45,000 and \$0.8 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

nine months ended September 30, 2017 that mature in the fourth quarter of 2017 and first 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 September 30, 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. 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. The applicable margin for borrowings under the revolving credit facility is 2.00% per annum for Eurodollar rate loans and 1.00% per annum for base rate loans, subject to reduction based on various factors, including our completion of this offering and our maintaining of specified net leverage ratios.

As of September 30, 2017, we had borrowings of \$297.8 million outstanding under the term loan facility, bearing interest at a rate of 5.33% per annum, which was based on a three-month Eurodollar rate of 1.33% 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 September 30, 2017, an increase of 10%, or approximately 13 basis points, in the three-month Eurodollar rate as of September 30, 2017 would cause pre-tax decreases to our earnings and cash flows of approximately \$0.4 million per year, assuming that such rate were to remain in effect for a year. A decrease of 10%, or approximately 13 basis points, in the three-month Eurodollar rate as of September 30, 2017 would cause pre-tax increases to our earnings and cash flows of approximately \$0.4 million, assuming that such rate were to remain in effect for a year.

As of September 30, 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 provide 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. In addition, we offer solutions for next-generation distributed and virtualized architectures in cable operator, fixed telecom 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.

We focus our development efforts on innovation and being the first to market with new products at each generational shift in cable network technology. 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 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 cable 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 400 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 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 and Beijing Gehua CATV Networks in Asia-Pacific.

One of our largest customers, Time Warner Cable, launched its flagship “TWC Maxx” initiative in the New York City metropolitan area in 2014 using our solution. By deploying our C100G CCAP solution, TimeWarner Cable was able to triple the maximum speed offered to its customers and reduce power consumption by nearly 30%, or approximately 11GWh per year, which we estimate is enough power for over 1,800 residential homes. Our solution also enabled Time Warner Cable to reduce facility space and remove over 140 miles of coaxial copper cable.

We have achieved significant growth and profitability. For the year ended December 31, 2015, we generated revenue of \$272.5 million, net income of \$67.9 million and adjusted EBITDA of \$115.5 million, representing increases of 29.0%, 13.8% and 22.1%, respectively, from the amounts for the year ended December 31, 2014. For the year ended December 31, 2016, we generated revenue of \$316.1 million, net income of \$88.7 million and adjusted EBITDA of \$129.1 million, representing increases of 16.0%, 30.5% and 11.7%, respectively, from the amounts for the year ended December 31, 2015. For the nine months ended September 30, 2017, we generated revenue of \$233.6 million, net income of \$59.6 million and adjusted EBITDA of \$93.3 million, representing increases of 7.7%, 22.2% and 25.2%, respectively, from the corresponding amounts for the nine months ended September 30, 2016.

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

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.

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 re-thinking 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 re-programmed 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 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 allows us to leverage the programmability of FPGAs and general purpose processors in our solutions. 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.

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 September 30, 2017, approximately 85% 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 400 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. In addition, our wireless solutions are currently in over 30 trials with over 25 prospective customers and we are in negotiations with several broadband service providers for commercial deployment of our small cell-related solutions.

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 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 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 \$2.0 billion in 2017 to \$2.7 billion in 2021, representing a 6% 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 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 \$4.3 billion in 2017 to \$6.5 billion in 2021, representing an 8% compound annual growth rate.¹ Our small cell-related solutions have been purchased by several customers, including Tier 1 mobile operators.
- According to ABI Research, the evolved packet core market is expected to grow from \$2.4 billion in 2017 to \$8.7 billion in 2021, representing a 29% compound annual growth rate.
- According to S&P Global Market Intelligence, the cable service provider PON market is projected to grow from \$0.5 billion in 2017 to \$0.8 billion in 2021, representing an 8% compounded annual growth rate.

Our small cell-related solutions, components of our evolved 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, 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

¹ Source: Gartner, Forecast: Communications Service Provider Operational Technology, Worldwide, 2015-2021, 3Q17 Update, 29 September 2017 (the “Gartner Report”). 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.

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 34 customers in the nine months ended September 30, 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

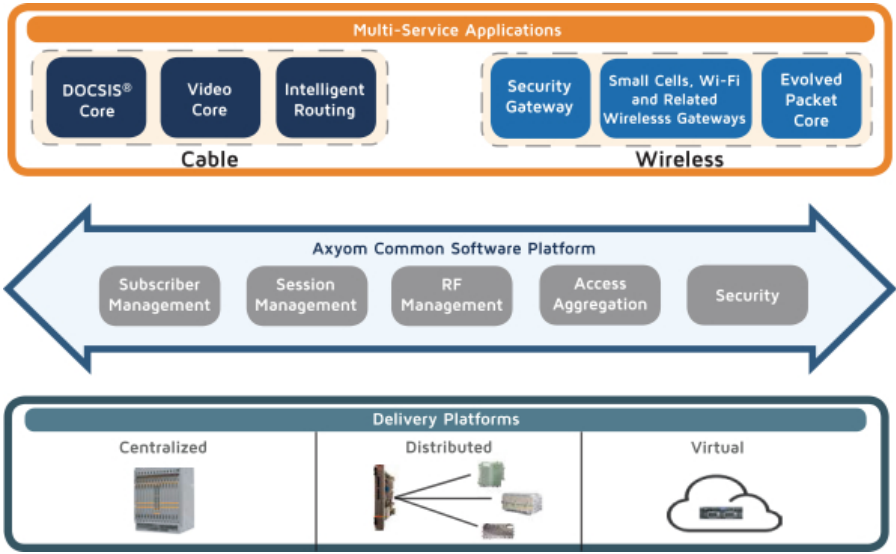
While we initially focused on providing solutions for cable service providers due to our founders' experience in the cable industry, the commonalities between fixed and wireless network architectures have allowed us to expand our solutions into the wireless market as cable service providers have increasingly sought to add wireless capabilities to their service offerings. Our wireless solutions have been purchased by several customers, including Tier 1 mobile operators. In addition, our wireless solutions are currently in over 30 trials with over 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 either 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 Cable Modem Termination System, or 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 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 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 400 customers, including some of the world's largest Tier 1 broadband service providers:

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

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.

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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 and Cisco. As we seek to enter the wireless market, we expect to encounter additional competition from large, established providers of wireless communication networks, including 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 against us, including greater name recognition, longer operating histories, and substantially greater financial, technical, research and development or other resources.

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 October 31, 2017, our research and development organization consisted of 386 employees worldwide, including both software and hardware engineers. Our research and development expense totaled \$25.5 million, \$37.2 million, \$49.2 million and \$43.9 million for the years ended December 31, 2014, 2015 and 2016 and the nine months ended September 30, 2017, 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 September 30, 2016 and 2017, we had backlog of \$26.9 million and \$26.0 million, respectively. The decrease in backlog over that period was due principally to the timing of shipments of our software-centric broadband products. Of the amount of backlog as of September 30, 2017, we expect that approximately \$24.3 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 October 31, 2017, we employed 664 full-time employees, of which 347 were located in the United States and 317 were located outside the United States. Our workforce as of October 31, 2017, consisted of 386 employees in engineering and research and development, 116 employees in sales and marketing, 66 employees in general and administrative, 60 employees in manufacturing and 36 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, 2016 and September 30, 2017. As of December 31, 2016 and September 30, 2017, outstanding borrowings under the mortgage loan were \$7.6 million and \$7.3 million, respectively.

We lease additional facilities in Lawrence, Massachusetts and Limerick, Ireland that we use for manufacturing, testing, logistics, research and development 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 October 31, 2017:

<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 ⁽¹⁾	51	Senior Vice President of Operations and Director
Abraham Pucheril	51	Senior Vice President of Worldwide Sales
Bruce Evans ⁽¹⁾⁽²⁾	58	Director
Bill Styslinger ⁽²⁾	71	Director
Joe Tibbetts ⁽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 since 2015. 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 worldwide sales since August 2012. 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 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 a Managing Director and the Chairman of Summit Partners' Board of Managers. He is also currently a director of Analog Devices, a public company which designs and manufactures high-performance semiconductor products, as well as several private companies. Mr. Evans previously served as a director of more than a dozen public companies, including, from May 2012 to November 2014, FleetCor Technologies, a provider of fuel cards and workforce payment products and services. 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 as a director of our company 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.

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 November 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.

Joe Tibbetts has been a director of our company since November 2017. Since March 2017, Mr. Tibbetts has served as the interim chief financial officer of Acquia Corporation, 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 Solar, Inc., a provider of smart home technology, and several private companies. Mr. Tibbetts holds a B.S. 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 six members. The current members of our board of directors were elected pursuant to a voting agreement among certain of our preferred and common stockholders. The agreement will terminate upon the closing of this offering, at which time there will be no further contractual obligations regarding the election of our directors. 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, each of which will become effective upon the closing of this offering, our board of directors will be divided into three classes, each of whose members will serve for staggered three year terms. Upon the closing of this offering, the members of the classes will be divided as follows:

- the class I directors will be Messrs. Chen and Guo, and their term will expire at the first annual meeting of stockholders held after the closing of this offering;
- the class II directors will be Messrs. Evans and Tibbetts, and their term will expire at the second annual meeting of stockholders held after the closing of this offering; and
- the class III directors will be Mr. Styslinger and Ms. Xie, and their term will expire at the third annual meeting of stockholders held after the closing of this offering.

Our restated certificate of incorporation that will become effective upon the closing of this offering 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 that will become effective upon the closing of this offering 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, 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).

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 has determined that each of Messrs. Evans and Tibbetts 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 member 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 completing their initial public offering.

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 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 will operate under a charter to be approved by our board of directors prior to this offering. Following this offering, a copy of each committee’s charter will be posted on the corporate governance section of our website, 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.

Audit Committee

The audit committee’s responsibilities will 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 will be required to be approved in advance by our audit committee.

Effective upon the effectiveness of the registration statement of which this prospectus is a part, the members of our audit committee will be Messrs. Evans and Tibbetts and Ms. Xie. Mr. Tibbetts will be the chair of our audit committee. Our board of directors has determined that Mr. Tibbetts is 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.

We expect to satisfy the member 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 completing their initial public offering.

Compensation Committee

The compensation committee’s responsibilities will 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.

Effective upon the effectiveness of the registration statement of which this prospectus is a part, the members of our compensation committee will be Messrs. Evans and Styslinger and Mr. Evans will be the chair of our compensation committee. Our board of directors has determined that Mr. Evans is independent within the meaning of Rule 10C-1 under the Exchange Act.

We expect to satisfy the member 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 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 on our website, *www.casa-systems.com*. In addition, we intend 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 year ended December 31, 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 <i>President, Chief Executive Officer and Chairman</i>	2016	664,566(3)	1,613,825(4)	1,065,115	1,989,328	7,950	5,340,784
Lucy Xie <i>Senior Vice President of Operations and Director</i>	2016	402,721(5)	538,337(4)	628,081	502,724	7,950	2,079,813
Weidong Chen <i>Chief Technology Officer and Director</i>	2016	378,206(6)	538,337(4)	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 in the fiscal year ended December 31, 2016, 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 \$16,554 of cash paid in lieu of vacation earned in 2016 and paid in 2017.
- (4) Consists of a discretionary bonus for 2016 performance that was determined and paid in early 2017.
- (5) Includes \$42,449 of cash paid in lieu of vacation earned in 2016 and paid in 2017.
- (6) 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, 2016 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)	517,495	562,500	4.18	1/23/2025		
	1/23/2015(3)					578,570	9,257,120
	1/23/2015(4)					173,575	2,777,200
	3/26/2016(5)	—	592,160	8.39	3/25/2026		
	3/26/2016(6)					126,890	2,030,240
Lucy Xie	1/23/2015(2)	108,980	118,460	4.18	1/23/2025		
	1/23/2015(3)					170,580	2,729,280
	1/23/2015(4)					85,290	1,364,640
	3/26/2016(5)	—	149,645	8.39	3/25/2026		
	3/26/2016(6)					74,825	1,197,200
Weidong Chen	5/25/2012	600,000	—	1.69	5/24/2022		
	1/23/2015(2)	62,270	67,695	4.18	1/23/2025		
	1/23/2015(3)					97,475	1,559,600
	1/23/2015(4)					48,740	779,840
	3/26/2016(5)	—	85,510	8.39	3/25/2026		
	3/26/2016(6)					42,755	684,080

- (1) Based on an assumed market price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus.
- (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) are scheduled to vest on January 1, 2018, subject to continued service with us through each applicable vesting date.
- (4) One-fourth (1/4) of these RSUs vested on each of January 1, 2016 and 2017, and one-fourth (1/4) are scheduled to vest each year thereafter, 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 January 1, 2017, 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 our 2011 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 both our 2003 Stock Incentive Plan and our 2011 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. The employment agreement also provides that Mr. Guo is eligible to participate in the 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. 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. 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, 2016, none of our directors received any cash compensation or stock-based awards for their service on our board of directors or committees of our board of directors. In December 2016, we approved, effective as of January 1, 2017, the payment to Bill Styslinger of 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 will terminate upon the closing of this offering. In addition, in connection with Mr. Tibbetts' appointment to our board of directors, we agreed to grant to Mr. Tibbetts restricted stock units for 18,750 and 9,375 shares, respectively, based upon an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, with the restricted stock unit for 18,750 shares vesting on a quarterly basis over a period of three years after the date of grant and the restricted stock unit for 9,375 shares vesting on the first anniversary of the date of grant, 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. We expect that our board of directors will grant these restricted stock units to Mr. Tibbetts upon the commencement of trading of our common stock on the Nasdaq Global Select Market. None of our other directors receives compensation for service on our board of directors or committees of our board of directors.

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, we approved a non-employee director compensation program to become effective upon the closing of this offering. Under this program, non-employee directors will receive the cash compensation set forth below, and an additional payment of \$150,000 annually, commencing with election or appointment to our board of directors, to be paid, at the discretion of our board of directors, in the form of cash or cash-settled or stock-settled 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 cash-settled or stock-settled restricted stock units will vest one year after the date of grant. In addition, new non-employee directors will also be eligible for an additional initial equity grant of cash-settled or stock-settled 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. Such cash-settled or stock-settled restricted stock units will vest on a quarterly basis, over a period of three years after the date of grant, subject to the non-employee director's continued service as a director, with full acceleration of vesting upon a change in control of our company.

Following the closing of this offering, each non-employee director will be 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:

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

Stock Option and Other Compensation Plans

Prior to this offering, we granted awards under our 2003 Stock Incentive Plan, as amended to date, and our 2011 Stock Incentive Plan, as amended to date. Following the effectiveness of the registration statement of which this prospectus is a part, we expect to grant awards under the 2017 Stock Incentive Plan.

2017 Stock Incentive Plan

In November 2017, our board of directors adopted, and our stockholders approved, the 2017 Stock Incentive Plan, which will become effective immediately prior to the effectiveness of the registration statement of which this prospectus is a part. 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. Upon effectiveness of the 2017 Stock Incentive Plan, the number of shares of our common stock that will be reserved for issuance under the 2017 Stock Incentive Plan will be 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 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, 2018 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 will be eligible to receive awards under the 2017 Stock Incentive Plan. Incentive stock options, however, may only be granted to our employees. We expect to grant under the 2017 Stock Incentive Plan options to purchase an aggregate of 625,000 shares to certain of our employees and restricted stock units for an aggregate of 28,125 shares, based upon an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, to one of our non-employee directors, in each case upon the commencement of trading of our common stock on the Nasdaq Global Select Market.

Pursuant to the terms of the 2017 Stock Incentive Plan, our board of directors (or a committee delegated by our board of directors) will administer 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 on or after the date that is ten years following the effectiveness of the registration statement of which this prospectus is a part. 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.

2011 Stock Incentive Plan

Our 2011 Stock Incentive Plan was adopted by our board of directors on August 2, 2011, approved by our stockholders on September 22, 2011 and subsequently amended on May 25, 2012, June 11, 2014, and June 29, 2015. The 2011 Stock Incentive Plan provides 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 are eligible to receive awards under our 2011 Stock Incentive Plan; however incentive stock options may only be granted to our employees. A maximum of 23,023,660 shares of our common stock are authorized for issuance under the 2011 Stock Incentive Plan. 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 selects the recipients of awards and determines:

- 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 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 October 31, 2017, options to purchase 14,899,160 shares of common stock were outstanding under the 2011 Stock Incentive Plan, at a weighted-average exercise price of \$4.23 per share, and options to purchase 3,093,500 shares of our common stock had been exercised. In addition, as of such date, 861,740 RSUs were outstanding under the 2011 Stock Incentive Plan.

No further awards will be made under our 2011 Stock Incentive Plan on or after the effectiveness of the registration statement of which this prospectus is a part; however, awards outstanding under our 2011 Stock Incentive Plan will continue to be governed by their existing terms. Our board of directors may amend, suspend or terminate the 2011 Stock Incentive Plan at any time and for any reason, except that any amendment of the 2011 Stock Incentive Plan that increases the number of shares of our common stock available for issuance under the 2011 Stock Incentive Plan or that materially changes the class of persons who are eligible for the grant of incentive stock options is subject to the approval of our stockholders.

2003 Stock Incentive Plan

Our 2003 Stock Incentive Plan was adopted by our board of directors on December 24, 2003, approved by our stockholders on December 24, 2003 and subsequently amended on April 26, 2004 and July 1, 2005. The 2003 Stock Incentive Plan provides 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 are eligible to receive awards under our 2003 Stock Incentive Plan; however incentive stock options may only be granted to our employees. A maximum of 31,610,000 shares of our common stock are authorized for issuance under the 2003 Stock Incentive Plan.

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 selects the recipients of awards and determines:

- 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 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 October 31, 2017, 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, which will become effective upon the closing of this offering, 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, which will become effective upon the closing of this offering, 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 certain of our executive officers and directors, and we intend to enter into similar indemnification agreements with each of our other directors and executive officers prior to the closing of this offering. 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.

RELATED PERSON TRANSACTIONS

Other than compensation arrangements for our executive officers which are described elsewhere in this prospectus, below we describe transactions since January 1, 2013 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.

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, 2013, 2014, 2015, 2016, and the nine months ended September 30, 2017, sales to these customers accounted for \$13.8 million, \$14.8 million, \$46.1 million, \$31.7 million and \$25.0 million, respectively, of our revenue.

We also issued 2,642,900 shares of our common stock to Liberty Global Ventures Holding B.V. on March 31, 2014, upon Liberty Global Ventures Holding B.V.'s exercise of outstanding warrants, for aggregate consideration of \$2.4 million.

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 \$240,000, \$453,600, \$542,430 and \$459,478 for his services in the years ended December 31, 2013, 2014, 2015 and 2016, 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 2014, June 2016, December 2016 and May 2017. 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 dividends declared in November 2014 and June 2016, we paid Mr. Styslinger \$59,753, \$11,954 and \$150,319 as equitable adjustments in the years ended December 31, 2014, 2015 and 2016, respectively. 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 dividend declared in May 2017, we paid Mr. Styslinger \$303,993 as an equitable adjustment in June 2017. In the event that this offering is consummated, we will be obligated to pay Mr. Styslinger an additional equitable adjustment payment of approximately \$155,573, in connection with the additional special dividend declared by our board of directors contingent upon, and payable following, the closing of this offering.

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 \$120,275, \$153,650, \$140,278, \$139,660 and \$138,912 in total compensation in the years ended December 31, 2013, 2014, 2015 and 2016 and the nine months ended September 30, 2017, 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 certain of our executive officers and directors, and we intend to enter into similar indemnification agreements with each of our other directors and executive officers prior to the closing of this offering. 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, which will become effective upon the closing of this offering, 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 will call 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 will also permit 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;
- a transaction that is specifically contemplated by provisions of our certificate of incorporation or bylaws;
- interests arising solely from indebtedness of a significant shareholder or an immediate family member of a significant shareholder 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 will provide that transactions involving compensation of executive officers shall be reviewed and approved by the compensation committee in the manner specified in its charter.

PRINCIPAL STOCKHOLDERS

The following table sets forth information with respect to the beneficial ownership of our common stock, as of October 31, 2017, 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; and
- all of our executive officers and directors as a group.

The column entitled “Shares Beneficially Owned Prior to Offering—Percentage” is based on a total of 74,097,475 shares of our common stock outstanding as of October 31, 2017, assuming the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 40,381,970 shares of our common stock upon the closing of this offering. The column entitled “Shares Beneficially Owned After Offering—Percentage” is based on shares of our common stock to be outstanding after this offering, including the 8,400,000 shares of our common stock that we are selling in this offering, but not including any additional shares issuable pursuant to the underwriters’ option to purchase additional shares in this offering or 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 October 31, 2017, 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		Shares Beneficially Owned After Offering	
	Number	Percentage	Number	Percentage
5% Stockholders				
Entities affiliated with Summit Partners ⁽¹⁾	38,592,000	52.1%	38,592,000	47.0%
Liberty Global Ventures Holding B.V. ⁽²⁾	4,432,870	6.0%	4,432,870	5.4%
Dragonfly 2012 Irrevocable Trust ⁽³⁾	4,000,000	5.4%	4,000,000	4.9%
Executive Officers and Directors				
Jerry Guo ⁽⁴⁾	11,969,805	15.9%	11,969,805	14.5%
Gary Hall ⁽⁵⁾	600,000	*	600,000	*
Weidong Chen ⁽⁶⁾	7,371,815	9.9%	7,371,815	8.9%
Lucy Xie ⁽⁷⁾	2,382,825	3.2%	2,382,825	2.9%
Abraham Pucheril ⁽⁸⁾	600,000	*	600,000	*
Bruce R. Evans ⁽⁹⁾	38,592,000	52.1%	38,592,000	47.0%
Bill Styslinger ⁽¹⁰⁾	600,000	*	600,000	*
Joe Tibbetts	—	—	—	—
All executive officers and directors as a group (8 persons) ⁽¹¹⁾	62,116,445	80.2%	62,116,445	75.3%

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- (1) Consists of 24,052,910 shares of common stock issuable upon the conversion of Series C Convertible Preferred Stock held by Summit Partners Private Equity Fund VII-A, L.P., 14,446,570 shares of common stock issuable upon the conversion of Series C Convertible Preferred Stock held by Summit Partners Private Equity Fund VII-B, L.P., 82,110 shares of common stock issuable upon the conversion of Series C Convertible Preferred Stock held by Summit Investors I, LLC and 10,410 shares of common stock issuable upon the conversion of Series C Convertible Preferred Stock held by Summit Investors I (UK), L.P. 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 Casa. Summit Partners, L.P., through a three-person investment committee responsible for voting and investment decisions with respect to Casa, 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.
 - (2) Consists of (i) 2,642,900 shares of common stock and (ii) 1,789,970 shares of common stock issuable upon the conversion of Series B Convertible Preferred 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.
 - (3) 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.
 - (4) Consists of (i) 10,898,570 shares of common stock held by Mr. Guo and (ii) options to purchase 1,071,235 shares of common stock that may be exercised within 60 days of October 31, 2017.
 - (5) Consists of options to purchase 600,000 shares of common stock held by Mr. Hall that may be exercised within 60 days of October 31, 2017.
 - (6) Consists of (i) 2,636,090 shares of common stock held by Mr. Chen, (ii) options to purchase 735,725 shares of common stock that may be exercised within 60 days of October 31, 2017 and (iii) the shares noted in note (3) above.
 - (7) Consists of (i) 2,145,285 shares of common stock held by Ms. Xie and (ii) options to purchase 237,540 shares of common stock that may be exercised within 60 days of October 31, 2017.
 - (8) Consists of 218,220 shares of common stock held by Mr. Pucheril and options to purchase 381,780 shares of common stock held by Mr. Pucheril that may be exercised within 60 days of October 31, 2017.
 - (9) Consists of the shares noted in note (1) above. Mr. Evans is a Managing Director at Summit Partners, the general partner of the Summit-affiliated entities listed in note (1), and may be deemed the indirect beneficial owner of such shares.
 - (10) 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 October 31, 2017.
 - (11) Includes (i) 16,198,165 shares of common stock held by our current directors and executive officers and (ii) options to purchase 3,326,280 shares of common stock that may be exercised within 60 days of October 31, 2017 by our current directors and executive officers.

DESCRIPTION OF CAPITAL STOCK

General

Following the closing of this offering, our authorized capital stock will consist 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 that will become effective upon the closing of this offering. Copies of these documents have been filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part. The description of our common stock reflects changes to our capital structure that will occur upon the closing of this offering.

As of October 31, 2017, we had issued and outstanding:

- 33,715,505 shares of our common stock held by 54 stockholders of record;
- 178,997 shares of our Series B convertible preferred stock held by one stockholder of record; and
- 3,859,200 shares of our Series C convertible preferred stock held by four stockholders of record.

Immediately prior to the closing of this offering, all of the outstanding shares of our convertible preferred stock will automatically convert into an aggregate of 40,381,970 shares of our common stock.

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, and the shares offered in this offering will be, when issued and paid for, 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 that will become effective upon the closing of this offering, 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. Upon the closing of this offering, there will be no shares of preferred stock outstanding, and we have no present plans to issue any shares of preferred stock.

Stock Options

As of October 31, 2017, 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 October 31, 2017, options to purchase 14,899,160 shares of our common stock were outstanding under our 2011 Stock Incentive Plan at a weighted-average exercise price of \$4.23 per share, of which 11,167,405 shares were vested and exercisable.

RSUs

As of October 31, 2017, 861,740 shares of our common stock were issuable upon the vesting of RSUs outstanding under our 2011 Stock Incentive Plan.

Registration Rights

Demand Registration Rights

Pursuant to our registration rights agreement, until the earlier of six months after the close of this offering and six months after the effective date of the registration statement of which this prospectus forms a part, 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 two 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 October 31, 2017, the holders of 40,381,970 shares of our common stock, including shares issuable upon the conversion of our convertible preferred stock, have 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

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 October 31, 2017, the holders of 40,381,970 shares of our common stock, including shares issuable upon the conversion of our convertible preferred stock, will be entitled to notice of this registration and will be entitled to include their registrable securities in this registration statement, but we anticipate that such right will be waived prior to consummation of this offering. The underwriters of any underwritten offering will have the right to limit the number of 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, which will be effective upon the closing of this offering, 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, which will be effective upon the closing of this offering, 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, which will be effective upon the closing of this offering, 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, which will be effective upon the closing of this offering, 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

Upon the closing of this offering, our restated certificate of incorporation will provide 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 will be American Stock Transfer & Trust Company.

Nasdaq Global Select Market

We have applied to list our common stock on the Nasdaq Global Select Market under the symbol "CASA."

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there was no public market for our common stock. 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. Although we have applied to list our common stock on the Nasdaq Global Select Market, we cannot assure you that there will be an active public market for our common stock.

Based on the 33,715,505 shares of our common stock that were outstanding on October 31, 2017, upon the closing of this offering, we will have outstanding an aggregate of 82,497,475 shares of common stock, assuming the issuance of 8,400,000 shares of common stock offered in this offering and the conversion of all outstanding shares of our convertible preferred stock into 40,381,970 shares of our common stock upon the closing of this offering. Of these shares, all shares sold in this offering will be freely tradable without restriction or further registration under the Securities Act, 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 74,097,475 shares of common stock outstanding upon the closing of this offering will be “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.

As a result of the lock-up agreements described below and the provisions of Rules 144 and 701 under the Securities Act, these restricted securities will be available for sale in the public market as follows:

- On the date of this prospectus
- 90 days after the date of this prospectus
- 180 days after the date of this prospectus

In addition, of the 15,044,990 shares of our common stock that were subject to stock options outstanding as of October 31, 2017, options to purchase 11,313,235 shares of common stock were vested as of October 31, 2017 and, upon exercise, these shares will be eligible for sale subject to the lock-up agreements and securities laws described below.

Lock-Up Agreements

We and each of our directors and executive officers and holders of substantially all of our capital stock and stock options have 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 180 days after the date of this prospectus:

- 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.

These agreements are subject to certain exceptions, as described in the section of this prospectus entitled “Underwriters.”

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 above.

Rule 144

Affiliate Resales of Restricted Securities

In general, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, 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 824,974 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, beginning 90 days after the effective date of the registration statement of which this prospectus is a part, 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 intend to file one or more registration statements 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. We expect to file the registration statement covering shares offered pursuant to our 2011 Stock Incentive Plan and 2017 Stock Incentive Plan shortly after the date of this prospectus, 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

Upon the closing of this offering, the holders of 40,381,970 shares of common stock will be 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 the 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 we 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>8,400,000</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 us 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.

We have granted to the underwriters an option, exercisable for 30 days from the date of this prospectus, to purchase up to 1,260,000 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. These amounts are shown assuming both no exercise and full exercise of the underwriters’ option to purchase up to an additional 1,260,000 shares of common stock.

	<u>Per Share</u>	<u>Total No Exercise</u>	<u>Full Exercise</u>
Public offering price	\$	\$	\$
Underwriting discounts and commissions to be paid by us	\$	\$	\$
Proceeds, before expenses	\$	\$	\$

The estimated offering expenses payable by us, exclusive of underwriting discounts and commissions, are approximately \$3.7 million. We have agreed to reimburse the underwriters for expense relating to clearance of this offering with the Financial Industry Regulatory Authority up to \$30,000.

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.

We have applied to list our common stock on the Nasdaq Global Select Market under the symbol “CASA”.

We and all directors and officers and the holders of substantially all of our outstanding stock and stock options 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 180 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 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;

- the conversion of outstanding shares of our preferred stock into 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 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 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.

Pricing of the Offering

Prior to this offering, there has been no public market for our common stock. The initial public offering price was determined by negotiations between us and the representatives. Among the factors considered in determining the initial public offering price were the information set forth in this prospectus and otherwise available to the representatives, our future prospects and those of our industry in general, assessment of our management, conditions of the securities markets at the time of this offering, our sales, earnings and certain other financial and operating information in recent periods, and the price-earnings ratios, price-sales ratios, market prices of securities, and certain financial and operating information of companies engaged in activities similar to ours.

Neither we nor the underwriters can assure investors that an active trading market will develop for our common shares, or that the shares will trade in the public market at or above the initial public offering price.

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, 2015 and 2016 and for each of the three years in the period ended December 31, 2016 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.

Upon the closing of this offering, we will be subject to the informational and periodic reporting requirements of the Exchange Act. We will fulfill our obligations with respect to such requirements by filing 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 Management of
Casa Systems, Inc.

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations and comprehensive income, of convertible preferred stock and stockholders' equity (deficit) and of cash flows present fairly, in all material respects, the financial position of Casa Systems, Inc. and its subsidiaries as of December 31, 2015 and 2016, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States) and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As discussed in Note 8 to the consolidated financial statements, the Company changed the manner in which it records windfall tax benefits as of January 1, 2016.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
March 8, 2017, except for the effects of the stock
split discussed in Note 19 to the consolidated
financial statements, as to which the date is
December 4, 2017

CASA SYSTEMS, INC.
CONSOLIDATED BALANCE SHEETS
(Amounts in thousands, except per share amounts)

	December 31,	
	2015	2016
Assets		
Current assets:		
Cash and cash equivalents	\$ 92,496	\$ 329,554
Marketable securities	—	14,392
Accounts receivable, net of provision for doubtful accounts of \$768 and \$690 as of December 31, 2015 and 2016, respectively	90,945	110,234
Inventory	47,501	65,975
Prepaid expenses and other current assets	4,173	7,178
Prepaid income taxes	945	39
Total current assets	236,060	527,372
Property and equipment, net	22,328	25,682
Accounts receivable, net of current portion	9,839	6,629
Deferred tax assets	14,280	21,140
Deferred offering costs	—	1,464
Other assets	590	748
Total assets	<u>\$ 283,097</u>	<u>\$ 583,035</u>
Liabilities, Convertible Preferred Stock and Stockholders' Equity (Deficit)		
Current liabilities:		
Accounts payable	\$ 7,218	\$ 21,704
Accrued expenses and other current liabilities	25,354	149,184
Accrued income taxes	4,882	11,823
Deferred revenue	35,353	55,876
Current portion of long-term debt, net of unamortized debt issuance costs	272	2,133
Total current liabilities	73,079	240,720
Accrued income taxes, net of current portion	449	463
Deferred revenue, net of current portion	22,109	18,458
Long-term debt, net of current portion and unamortized debt issuance costs	7,523	297,618
Total liabilities	<u>103,160</u>	<u>557,259</u>
Commitments and contingencies (Note 17)		
Convertible preferred stock (Series A, B and C), \$0.001 par value; 6,000 shares authorized as of December 31, 2015 and 2016; 4,038 shares issued and outstanding as of December 31, 2015 and 2016; aggregate liquidation preference of \$137,460 as of December 31, 2016; no shares issued or outstanding, pro forma as of December 31, 2016 (unaudited)	<u>97,479</u>	<u>97,479</u>
Stockholders' equity (deficit):		
Common stock, \$0.001 par value; 100,000 shares authorized as of December 31, 2015 and 2016; 31,806 and 33,184 shares issued and outstanding as of December 31, 2015 and 2016, respectively	32	33
Additional paid-in capital	14,719	—
Accumulated other comprehensive loss	(214)	(1,739)
Retained earnings (accumulated deficit)	67,921	(69,997)
Total stockholders' equity (deficit)	<u>82,458</u>	<u>(71,703)</u>
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	<u>\$ 283,097</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,		
	2014	2015	2016
Revenue:			
Product	\$ 194,358	\$ 247,588	\$ 279,223
Service	16,920	24,862	36,905
Total revenue	211,278	272,450	316,128
Cost of revenue:			
Product	59,088	74,349	89,340
Service	5,917	5,265	8,477
Total cost of revenue	65,005	79,614	97,817
Gross profit	146,273	192,836	218,311
Operating expenses:			
Research and development	25,481	37,155	49,210
Sales and marketing	21,409	36,157	36,114
General and administrative	10,346	16,453	18,215
Total operating expenses	57,236	89,765	103,539
Income from operations	89,037	103,071	114,772
Other income (expense):			
Interest income	913	955	1,208
Interest expense	(23)	(214)	(902)
Loss on foreign currency, net	(3,173)	(3,020)	(328)
Other income (expense), net	(659)	871	943
Total other income (expense), net	(2,942)	(1,408)	921
Income before provision for income taxes	86,095	101,663	115,693
Provision for income taxes	26,387	33,742	27,025
Net income	59,708	67,921	88,668
Other comprehensive expense—foreign currency translation adjustment	(149)	(1,244)	(1,525)
Comprehensive income	\$ 59,559	\$ 66,677	\$ 87,143

CASA SYSTEMS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (Continued)
(Amounts in thousands, except per share amounts)

	Year Ended December 31,		
	2014	2015	2016
Cash dividends declared per common share or common share equivalent	\$ 0.3835	\$ —	\$ 2.9197
Net income (loss) attributable to common stockholders:			
Basic	\$ 23,287	\$ 27,302	\$ (35,119)
Diluted	\$ 23,843	\$ 30,402	\$ (35,119)
Net income (loss) per share attributable to common stockholders:			
Basic	\$ 0.78	\$ 0.86	\$ (1.07)
Diluted	\$ 0.73	\$ 0.78	\$ (1.07)
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders:			
Basic	29,983	31,740	32,864
Diluted	32,683	38,809	32,864
Pro forma net income per share attributable to common stockholders (unaudited):			
Basic			\$ 1.09
Diluted			\$ 0.97
Weighted-average shares used to compute pro forma net income per share attributable to common stockholders (unaudited):			
Basic			81,646
Diluted			91,333

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, 2014	4,038	\$97,479	26,470	\$ 26	\$ 8,194	\$ 1,179	\$ (42,944)	\$ (33,545)
Exercise of stock options	—	—	2,560	3	4,294	—	—	4,297
Exercise of warrants	—	—	2,643	3	2,366	—	—	2,369
Reclassification of warrant liability	—	—	—	—	3,695	—	—	3,695
Foreign currency translation adjustment, net of tax of \$0	—	—	—	—	—	(149)	—	(149)
Cash dividends declared (\$0.3835 per share of common stock, \$3.8346 per share of convertible preferred stock and \$0.3835 per share to holders of stock-based awards)	—	—	—	—	(13,201)	—	(16,764)	(29,965)
Stock-based compensation	—	—	—	—	1,782	—	—	1,782
Income tax benefits related to stock-based compensation plans	—	—	—	—	508	—	—	508
Net income	—	—	—	—	—	—	59,708	59,708
Balances at December 31, 2014	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 restricted stock units, 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)

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,		
	2014	2015	2016
Cash flows from operating activities:			
Net income	\$ 59,708	\$ 67,921	\$ 88,668
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	3,604	5,149	6,008
Stock-based compensation	1,991	7,321	8,304
Deferred income taxes	(8,398)	(1,637)	(6,860)
Increase in fair value of warrant liability	1,523	—	—
Excess and obsolete inventory valuation adjustment	264	1,379	1,674
Increase in provision for doubtful accounts	311	454	—
Excess income tax benefits from stock-based compensation plans	(508)	—	—
Changes in operating assets and liabilities:			
Accounts receivable	(46,634)	(9,717)	(16,273)
Inventory	(22,075)	(17,373)	(22,798)
Prepaid expenses and other assets	(2,404)	(875)	(3,235)
Prepaid income taxes	(1,687)	742	900
Accounts payable	(6,621)	2,744	14,453
Accrued expenses and other current liabilities	7,993	7,967	15,759
Accrued income taxes	13,880	(10,842)	6,894
Deferred revenue	59,401	(28,631)	17,286
Net cash provided by operating activities	60,348	24,602	110,780
Cash flows used in investing activities:			
Purchases of property and equipment	(4,030)	(15,503)	(7,419)
Purchases of marketable securities	—	—	(14,392)
Net cash used in investing activities	(4,030)	(15,503)	(21,811)
Cash flows from financing activities:			
Proceeds from issuance of debt, net of issuance costs	—	7,905	292,189
Principal repayments of debt	—	(115)	(282)
Proceeds from exercise of warrants	2,369	—	—
Proceeds from exercise of stock options	4,297	226	594
Payments of dividends and equitable adjustments	(28,869)	(712)	(142,301)
Payments of initial public offering costs	—	—	(517)
Employee taxes paid related to net share settlement of restricted stock units	—	—	(315)
Excess income tax benefits from stock-based awards	508	—	—
Net cash provided by (used in) financing activities	(21,695)	7,304	149,368
Effect of exchange rate changes on cash and cash equivalents	28	(1,062)	(1,279)
Net increase in cash and cash equivalents	34,651	15,341	237,058
Cash and cash equivalents at beginning of year	42,504	77,155	92,496
Cash and cash equivalents at end of year	<u>\$ 77,155</u>	<u>\$ 92,496</u>	<u>\$ 329,554</u>
Supplemental disclosures of cash flow information:			
Cash paid for interest	\$ —	\$ 117	\$ 274
Cash paid for income taxes	\$ 22,279	\$ 45,182	\$ 25,179
Supplemental disclosures of non-cash investing and financing activities:			
Purchases of property and equipment included in accounts payable	\$ —	\$ 1,140	\$ 869
Deferred offering costs included in accounts payable and accrued expenses and other current liabilities	\$ —	\$ —	\$ 947
Unpaid dividends and equitable adjustments included in accrued expenses and other current liabilities	\$ 1,096	\$ 383	\$ 107,509

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 provides 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. In addition, the Company offers solutions for next-generation distributed and virtualized architectures in cable operator, fixed telecom and wireless networks. The Company’s innovative solutions enable customers to cost-effectively and dynamically increase network speed, add bandwidth capacity, reconfigure and add new services for consumers and enterprises, reduce network complexity and reduce operating and capital expenditures.

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.

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.

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, warranty allowances, 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.

CASA SYSTEMS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

Unaudited Pro Forma Information

In the accompanying consolidated statements of operations and comprehensive income, the calculation of the unaudited pro forma basic and diluted net income per share attributable to common stockholders for the year ended December 31, 2016 has been prepared to give effect, upon the closing of a qualified initial public offering, to (i) the automatic conversion of all outstanding shares of convertible preferred stock into shares of common stock as if the proposed initial public offering had occurred on January 1, 2016 and (ii) the number of shares offered in the initial public offering whose proceeds are deemed necessary, based on an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, to pay the \$202,031 amount by which the special cash dividends of \$171,425, \$87,133 and \$42,961 declared by the Company's board of directors on December 21, 2016, May 10, 2017 (unaudited) and November 30, 2017 (unaudited), respectively, exceeded the Company's earnings for the twelve-month period ended September 30, 2017; however, such number of shares included in the denominator of the calculation of unaudited pro forma net income per share is limited to the total number of shares to be issued in the offering.

The unaudited pro forma net income per share data have been presented in accordance with Securities and Exchange Commission Staff Accounting Bulletin Topic 1B.3 ("SAB Topic 1B.3"). In accordance with SAB Topic 1B.3, dividends declared at or in the twelve-month period preceding an initial public offering are deemed to be in contemplation of the offering with the intention of repayment out of the offering proceeds to the extent that the amount of dividends exceeded the amount of earnings during the twelve-month period ended on the most recent balance sheet date. For the twelve-month period ended September 30, 2017 (unaudited), the Company's net income was \$99,488.

Cash Equivalents

Cash equivalents include all highly liquid investments maturing within three months from the date of purchase. As of December 31, 2015 and 2016, the Company's cash equivalents consisted of investments in certificates of deposit 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. As of December 31, 2016, the Company's marketable securities consisted of investments in certificates of deposit. The Company did not have any marketable securities outstanding as of December 31, 2015.

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

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

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, 2015 and 2016 consisted of the following:

	December 31,	
	2015	2016
Current portion of accounts receivable, net:		
Accounts receivable, net	\$ 71,155	\$ 87,250
Amounts due from related party (see Note 16)	12,367	15,619
Accounts receivable, extended payment arrangements	7,423	7,365
	<u>90,945</u>	<u>110,234</u>
Accounts receivable, net of current portion:		
Accounts receivable, extended payment arrangements	9,839	6,629
	<u>\$ 100,784</u>	<u>\$ 116,863</u>

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

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, 2014, 2015 and 2016 is as follows:

	Year Ended December 31,		
	2014	2015	2016
Provision for doubtful accounts at beginning of year	\$ 174	\$ 485	\$ 768
Provisions	311	454	—
Write-offs	—	(171)	(78)
Provision for doubtful accounts at end of year	<u>\$ 485</u>	<u>\$ 768</u>	<u>\$ 690</u>

As of December 31, 2015 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, 2014, 2015 and 2016, 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.

CASA SYSTEMS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

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:

	<u>Estimated Useful Life</u>
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, 2014, 2015 and 2016.

Deferred Offering Costs

The Company capitalizes certain legal, professional accounting and other third-party fees that are directly associated with in-process equity financings as deferred offering costs until such financings are consummated. After consummation of the equity financing, these costs are recorded in stockholders' equity (deficit) as a reduction of additional paid-in capital generated as a result of the offering. Should the planned equity financing be abandoned, the deferred offering costs will be expensed immediately as a charge to operating expenses in the statement of operations and comprehensive income. As of December 31, 2016, deferred offering costs of \$1,464 were recorded in the consolidated balance sheet. The Company did not record any deferred offering costs as of December 31, 2015.

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, money market mutual funds, and certificates of deposit with financial institutions, which may exceed Federal Deposit Insurance Corporation

CASA SYSTEMS, INC.
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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.

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,	
	2014	2015	2016	2015	2016
Customer A	41%	14%	23%	*	11%
Customer B	13%	*	*	*	*
Customer C	*	17%	10%	12%	13%
Customer D	*	*	*	17%	*
Customer E	*	*	*	12%	*
Customer F	*	*	*	15%	12%
Customer G	*	*	19%	*	21%

* Less than 10% of total

Customer C is a related party, Liberty Global Affiliates (see Note 16).

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 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.

CASA SYSTEMS, INC.
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A summary of changes in the amount reserved for warranty costs for the years ended December 31, 2014, 2015 and 2016 is as follows:

	Year Ended December 31,		
	2014	2015	2016
Warranty reserve at beginning of year	\$ 646	\$ 949	\$ 993
Provisions	988	1,272	1,862
Charges	(685)	(1,228)	(1,599)
Warranty reserve at end of year	<u>\$ 949</u>	<u>\$ 993</u>	<u>\$ 1,256</u>

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

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)

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.

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.

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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.

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

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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 sheets as of December 31, 2015 and 2016 included amounts deferred for trade-in rights of \$1,743 and \$8,477, respectively.

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 historically has been a private company and lacks company-specific historical and

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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 and December 2016, and in that circumstance 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.

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 \$12, \$28 and \$7 for the years ended December 31, 2014, 2015 and 2016, respectively.

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).

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Foreign currency transaction losses included in the consolidated statements of operations and comprehensive income as a component of other income (expense) totaled \$3,173, \$3,020 and \$328 for the years ended December 31, 2014, 2015 and 2016, 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 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:

- | | |
|-----------------|--|
| <i>Level 1—</i> | Quoted prices in active markets for identical assets and liabilities. |
| <i>Level 2—</i> | 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. |
| <i>Level 3—</i> | 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, SARs and warrant liability 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, 2015 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

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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 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.

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.

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, warrants to purchase common stock and convertible preferred stock are considered potential dilutive common shares.

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In March 2016, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2016-09, *Improvements to Employee Share-Based Payment Accounting* (“ASU 2016-09”), which simplifies the accounting for share-based payments. The amendments of the updated standard include, among other things, the requirement to recognize excess tax benefits (or deficiencies) through earnings instead of additional paid-in capital, changes to the classification of excess tax benefits on the statement of cash flows, and the election of a policy to either estimate forfeitures when determining periodic expense or recognize actual forfeitures when they occur. The standard is effective for annual periods beginning after December 15, 2016.

The Company elected to early adopt ASU 2016-09 as of January 1, 2016. The primary impacts of the adoption were (i) the recognition, on a prospective basis, of excess tax benefits from equity transactions as a reduction of the provision for income taxes rather than as an increase to additional paid-in capital and (ii) excluding, on a prospective basis, from the calculation of diluted net income (loss) per share attributable to common stockholders the effect of the excess tax benefit when applying the treasury stock method to determine the dilutive effect of outstanding stock-based awards. If the Company had not adopted the standard as of January 1, 2016, it would have reported a higher provision for income taxes for the year ended December 31, 2016 of \$1,458 for the excess tax benefit of restricted stock vesting and of \$8,397 for the equitable adjustment payments. Similarly, if the Company had not adopted the standard as of January 1, 2016, it would have reported higher net cash provided by operating activities of \$9,855 and lower net cash used in financing activities of \$9,855 for the year ended December 31, 2016. The Company elected to maintain its existing policy to estimate forfeitures when determining periodic expense. The adoption of the other provisions of ASU 2016-09 had an insignificant impact on the Company’s 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 annual periods beginning after December 15, 2017 and for interim periods within those fiscal years. Early adoption of the standard is permitted for annual periods beginning after December 15, 2016. 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*, 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 is currently assessing 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 July 2015, the FASB issued ASU 2015-11, *Simplifying the Measurement of Inventory*. 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. Early application is permitted. The Company will adopt ASU 2015-11 during the first quarter of 2017, and adoption is not expected to have a material impact on its consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases*, 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 annual reporting periods beginning after December 15, 2018 and for interim periods within those fiscal years. 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*. 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 annual reporting periods beginning after December 15, 2019 and for interim periods within those fiscal years. 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 annual periods beginning after December 15, 2017, including interim periods within those fiscal years. 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 annual periods beginning after December 15, 2017, including interim periods within those fiscal years. The Company is currently assessing the potential impact that the adoption of ASU 2016-16 will have on its consolidated financial statements.

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3. Inventory

Inventory as of December 31, 2015 and 2016 consisted of the following:

	December 31,	
	2015	2016
Raw materials	\$ 4,267	\$ 5,037
Work in process	361	103
Finished goods:		
Manufactured finished goods	40,052	60,866
Deferred inventory costs	5,680	4,488
	50,360	70,494
Valuation adjustment for excess and obsolete inventory	(2,859)	(4,519)
	<u>\$ 47,501</u>	<u>\$ 65,975</u>

4. Property and Equipment

Property and equipment as of December 31, 2015 and 2016 consisted of the following:

	December 31,	
	2015	2016
Computers and purchased software	\$ 6,570	\$ 9,246
Leasehold improvements	905	1,044
Furniture and fixtures	1,416	1,516
Machinery and equipment	8,068	11,494
Land	3,091	3,091
Building	4,765	4,765
Building improvements	3,152	4,724
Trial systems at customers' sites	6,028	6,581
	33,995	42,461
Less: Accumulated depreciation and amortization	(11,667)	(16,779)
	<u>\$ 22,328</u>	<u>\$ 25,682</u>

During the years ended December 31, 2014, 2015 and 2016, the Company transferred trial systems from inventory into property and equipment with a value of \$1,229, \$1,545 and \$706, respectively, net of transfers of trial systems to cost of revenue. In addition, the Company transferred \$1,357, \$806 and \$1,082 of equipment from inventory into property and equipment during the years ended December 31, 2014, 2015 and 2016, respectively.

Total depreciation and amortization expense was \$3,604, \$5,149 and \$6,008 for the years ended December 31, 2014, 2015 and 2016, respectively.

In March 2015, the Company purchased the land and building of its U.S. corporate offices for \$8,325. As a result of the purchase, the Company recorded closing costs of \$57 and reclassified \$1,887 of leasehold improvements net of accumulated depreciation, \$238 of leasehold improvement receivable and \$1,098 of deferred rent liability to land, building and building improvements.

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5. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities as of December 31, 2015 and 2016 consisted of the following:

	December 31,	
	2015	2016
Accrued compensation and related taxes	\$ 17,346	\$ 18,475
Accrued warranty (see Note 2)	993	1,256
Dividends and equitable adjustments payable (see Note 10)	383	107,509
Accrued customer incentives (see Note 2)	—	15,449
Other accrued expenses	6,632	6,495
	<u>\$ 25,354</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 contracts are valued using Level 2 inputs in the fair value hierarchy. The Company's warrant liabilities and SARs are valued using as Level 3 inputs in the fair value hierarchy based on management's judgment and the assumptions set forth in Notes 12 and 13 as there is no market activity to derive an estimate of their fair value. Changes in the fair value of warrant liabilities and SARs are recorded in other income (expense) and operating expenses, respectively, 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, 2015 and 2016 and indicate the level of the fair value hierarchy utilized to determine such fair values:

	Fair Value Measurements as of December 31, 2015 Using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Certificates of deposit	\$ —	\$ 342	\$ —	\$ 342
Money market mutual funds	45,065	—	—	45,065
	<u>\$ 45,065</u>	<u>\$ 342</u>	<u>\$ —</u>	<u>\$ 45,407</u>
Liabilities:				
SARs	\$ —	\$ —	\$ 737	\$ 737
	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 737</u>	<u>\$ 737</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 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 contracts	—	56	—	56
	<u>\$ —</u>	<u>\$ 56</u>	<u>\$ 1,195</u>	<u>\$ 1,251</u>

During the years ended December 31, 2014, 2015 and 2016, 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 is 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 13). 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.

Until March 31, 2014, the Company had classified warrants for the purchase of shares of its common stock as a liability in its consolidated balance sheets due to the anti-dilution provisions in those warrants. The warrants were initially recorded at fair value on date of issuance and were subsequently remeasured to fair value at each balance sheet date. The Company continued to adjust the liability for changes in fair value until the warrants were exercised on March 31, 2014. The Company's valuation of the warrants utilized the Black-Scholes option-pricing model, which incorporates assumptions and estimates, to value these warrants (see Note 12). The Company assessed these assumptions and estimates on a quarterly basis as additional information impacting the assumptions was obtained. Changes in the fair value of the warrant liability were recognized as other income (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 and warrant liability, for which fair value is determined by Level 3 inputs:

	SARs Liability			Warrant Liability
	Year Ended December 31,			Year Ended December 31,
	2014	2015	2016	2014
Fair value at beginning of the year	\$ 62	\$ 271	\$ 737	\$ 2,172
Change in fair value	209	466	458	1,523
Exercises	—	—	—	(3,695)
Fair value at end of year	<u>\$ 271</u>	<u>\$ 737</u>	<u>\$ 1,195</u>	<u>\$ —</u>

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The Company's cash and cash equivalents as of December 31, 2015 and 2016 consisted of the following:

	December 31,	
	2015	2016
Cash	\$ 47,089	\$ 5,300
Cash equivalents:		
Certificates of deposit	342	3,166
Money market mutual funds	45,065	321,088
Total cash equivalents	45,407	324,254
Total cash and cash equivalents	\$ 92,496	\$ 329,554

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, 2016, the Company had foreign currency forward contracts outstanding with notional amounts totaling 11,171 euros maturing in 2017. The Company had no outstanding derivative instruments as of December 31, 2015.

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 a liability of \$56 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.

8. Income Taxes

Income before the provision for income taxes for the years ended December 31, 2014, 2015 and 2016 consisted of the following:

	Year Ended December 31,		
	2014	2015	2016
United States	\$ 82,237	\$ 99,972	\$ 106,386
Foreign	3,858	1,691	9,307
	\$ 86,095	\$ 101,663	\$ 115,693

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The provision for income taxes for the years ended December 31, 2014, 2015 and 2016 consisted of the following:

	Year Ended December 31,		
	2014	2015	2016
Current income tax provision:			
Federal	\$ 30,556	\$ 34,124	\$ 30,876
State	3,644	924	1,775
Foreign	585	331	1,234
Total current income tax provision	<u>34,785</u>	<u>35,379</u>	<u>33,885</u>
Deferred income tax provision (benefit):			
Federal	(6,556)	(2,260)	(5,802)
State	(1,081)	346	(979)
Foreign	(761)	277	(79)
Total deferred income tax provision (benefit)	<u>(8,398)</u>	<u>(1,637)</u>	<u>(6,860)</u>
Total income tax provision	<u>\$ 26,387</u>	<u>\$ 33,742</u>	<u>\$ 27,025</u>

A reconciliation of the U.S. federal statutory rate to the Company's effective income tax rate for the years ended December 31, 2014, 2015 and 2016 is as follows:

	Year Ended December 31,		
	2014	2015	2016
Federal statutory income tax rate	35.0%	35.0%	35.0%
State taxes, net of federal tax benefit	1.9	0.7	1.2
Research and development tax credits	(1.1)	(1.6)	(2.1)
Permanent differences	(0.2)	1.6	1.1
Domestic manufacturing deduction	(3.3)	(3.2)	(2.0)
Foreign tax rate differential	(1.2)	0.6	(2.0)
Equitable adjustment payments	—	—	(7.0)
Excess tax benefit from stock-based transactions	—	—	(1.2)
Uncertain tax positions	(0.4)	—	—
Other, net	(0.1)	0.1	0.4
Effective income tax rate	<u>30.6%</u>	<u>33.2%</u>	<u>23.4%</u>

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The income tax effect of each type of temporary difference and carryforward as of December 31, 2015 and 2016 was as follows:

	December 31,	
	2015	2016
Deferred tax assets:		
Nonqualified stock options	\$ 2,846	\$ 3,183
Tax credit carryforwards	1,057	1,099
Inventory valuation	1,090	1,750
Accrued liabilities and reserves	3,859	5,690
Deferred revenue	7,367	12,805
Other	525	515
Total deferred tax assets	<u>16,744</u>	<u>25,042</u>
Deferred tax liabilities:		
Depreciation and amortization	(1,626)	(2,328)
Deferred costs	(589)	(804)
Nonqualified stock options	(86)	—
Accrued liabilities and reserves	—	(647)
Deferred revenue	(156)	(116)
Other	(7)	(7)
Total deferred tax liabilities	<u>(2,464)</u>	<u>(3,902)</u>
Net deferred tax assets	<u>\$ 14,280</u>	<u>\$ 21,140</u>

The Company has concluded that these net 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.

As of December 31, 2016, the Company had state research and development tax credits of \$1,691 that will begin to expire in 2029 through 2031. 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.

The Company's intent is 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 has not provided for U.S. taxes on the unremitted earnings of its international subsidiaries, which totaled approximately \$27,850 as of December 31, 2016. It is not practicable to estimate the amount of deferred tax liability related to the unremitted earnings of these foreign subsidiaries.

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 \$24, \$20 and \$14 for the years

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ended December 31, 2014, 2015 and 2016, respectively. The liability recorded for potential penalties and interest was \$131 and \$145 as of December 31, 2015 and 2016, respectively. The Company had a total recorded liability of \$449 and \$463 related to uncertain tax positions, inclusive of penalties and interest, as of December 31, 2015 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 unrecognized tax benefits, which excludes interest and penalties, for the years ended December 31, 2014, 2015 and 2016 were as follows:

Balance at January 1, 2014	\$ 532
Settlement/decreases related to tax positions taken during prior years	(336)
Increases related to tax positions taken during prior years	122
Increases related to tax positions taken during the current year	—
Balance at December 31, 2014	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	<u>\$ 318</u>

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, 2016, the tax years 2013 through 2016 remained open to examination in the U.S. federal jurisdiction and the tax years 2012 through 2016 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.

The Company recorded stock-based compensation expense of \$7,321 and \$8,304 in the years ended December 31, 2015 and 2016, respectively. Accounting for the tax effects of certain stock-based awards requires that the Company establish a deferred tax asset as the compensation expense is recognized for financial reporting purposes prior to recognizing the related income tax deduction upon exercise of the awards.

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 ASU 2016-09 as of January 1, 2016 (see Note 2), windfall tax benefits were recorded as increases to additional paid-in capital in the period in which the tax deduction reduced income taxes. During the year ended December 31, 2014, the Company recorded a net windfall tax benefit of \$508 as an increase to additional paid-in capital.

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9. Debt

The aggregate principal amount of debt outstanding as of December 31, 2015 and 2016 consisted of the following:

	December 31,	
	2015	2016
Term loans	\$ —	\$ 300,000
Mortgage loan	7,835	7,553
Total principal amount of debt outstanding	<u>\$ 7,835</u>	<u>\$ 307,553</u>

Current and non-current debt obligations reflected in the consolidated balance sheets as of December 31, 2015 and 2016 consisted of the following:

	December 31,	
	2015	2016
Current liabilities:		
Term loans	\$ —	\$ 3,000
Mortgage loan	282	292
Current portion of principal payment obligations	282	3,292
Unamortized debt issuance costs, current portion	(10)	(1,159)
Current portion of long-term debt, net of unamortized debt issuance costs	<u>\$ 272</u>	<u>\$ 2,133</u>
Non-current liabilities:		
Term loans	\$ —	\$ 297,000
Mortgage loan	7,553	7,261
Non-current portion of principal payment obligations	7,553	304,261
Unamortized debt issuance costs, non-current portion	(30)	(6,643)
Long-term debt, net of current portion and unamortized debt issuance costs	<u>\$ 7,523</u>	<u>\$ 297,618</u>

Revolving Credit Agreement

On April 11, 2014, the Company entered into a revolving credit agreement (the “Revolver”) with Bank of America that, as of December 31, 2015, provided for borrowings of up to \$10,000, subject to certain limitations, that accrued interest, at the Company’s election, at either (i) the bank’s prime rate or (ii) LIBOR plus two percentage points and that was due to expire on April 11, 2017. Interest on amounts borrowed under the Revolver was due quarterly in arrears, and, as of December 31, 2015, the Company was required to pay a fee of 0.25% per year, payable quarterly in arrears, on the unused amount of the Revolver.

On July 1, 2016, the Company amended the Revolver to increase the amount of available borrowings, extend the maturity date and decrease the fee for the unused amount of the Revolver. The amended Revolver was to expire on June 30, 2019 and provided for borrowings of up to \$25,000, subject to certain limitations, that accrue interest, at the Company’s election, at either (i) the bank’s prime rate or (ii) LIBOR plus two percentage points. Interest on amounts borrowed under the Revolver was due quarterly in arrears, and the Company is required to pay a fee of 0.20% per year, payable quarterly in arrears, on the unused amount of the Revolver.

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As of December 31, 2015, the Company did not have any outstanding borrowings under the Revolver but used \$1,000 under the Revolver as collateral for a stand-by letter of credit to guarantee the Company's contractual performance with a customer. For the years ended December 31, 2015 and 2016, interest expense related to the fee for the unused amount of the Revolver totaled \$25 and \$22, respectively. For the year ended December 31, 2014, no interest expense was recorded and no fees were due for the unused amount of the Revolver.

Borrowings under the Revolver were secured by substantially all of the Company's assets, excluding its intellectual property, as defined, and its investments in foreign subsidiaries. Under the Revolver, the Company was subject to various affirmative, negative and financial covenants, including a funded debt to consolidated EBITDA ratio and a basic fixed charge coverage ratio. The Company was in compliance with all covenants of the Revolver as of December 31, 2014 and 2015.

The Revolver was terminated by the Company on December 20, 2016. The Company did not have any outstanding borrowings under the Revolver at the time of termination.

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, 2016, \$300,000 in principal amount 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% interest rate floor) and 3.00% per annum for base rate loans. The applicable margin for borrowings under the revolving credit facility is 2.00% per annum for Eurodollar rate loans and 1.00% per annum for base rate loans, subject to reduction based on various factors, including the Company's completion of an initial public offering and its 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 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

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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, 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. No principal payments were made under the term loan facility during the year ended December 31, 2016. Interest expense, including the amortization of debt issuance costs, totaled \$538 for the year ended December 31, 2016.

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. For the year ended December 31, 2016, interest expense related to the fee for the unused amount of the revolving credit facility totaled \$2.

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, 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

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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 \$115 and \$282 during the years ended December 31, 2015 and 2016, respectively. Interest expense, including the amortization of debt issuance costs, totaled \$145 and \$283 for the years ended December 31, 2015 and 2016, respectively.

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, 2015 and 2016.

As of December 31, 2016, aggregate minimum future principal payments of the Company's debt are summarized as follows:

<u>Year Ending December 31,</u>	
2017	\$ 3,292
2018	3,303
2019	3,314
2020	9,644
2021	3,000
Thereafter	285,000
	<u>\$ 307,553</u>

10. Convertible Preferred Stock

The Company has issued Series A, Series B and Series C convertible preferred stock (collectively, the "Convertible Preferred Stock"). All of the issued and outstanding shares of Series A convertible preferred stock (the "Series A Preferred Stock") were repurchased by the Company in April 2010. The holders of Convertible Preferred Stock have liquidation rights in the event of a deemed liquidation that, in certain situations, is not solely within the control of the Company. Therefore, the Convertible Preferred Stock is classified outside of stockholders' equity (deficit) in the consolidated balance sheets. As of December 31, 2015 and 2016, the Company's certificate of incorporation, as amended and restated, authorized the Company to issue 6,000 shares of \$0.001 par value preferred stock, of which 5,502 shares had been designated.

As of each balance sheet date, Convertible Preferred Stock consisted of the following:

	December 31, 2015			
	<u>Preferred Shares Designated</u>	<u>Preferred Shares Issued and Outstanding</u>	<u>Carrying Value</u>	<u>Liquidation Preference</u>
Series A convertible preferred stock	1,291	—	\$ —	\$ —
Series B convertible preferred stock	352	179	1,542	2,230
Series C convertible preferred stock	3,859	3,859	95,937	129,347
	<u>5,502</u>	<u>4,038</u>	<u>\$97,479</u>	<u>\$ 131,577</u>

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	December 31, 2016			
	Preferred Shares Designated	Preferred Shares Issued and Outstanding	Carrying Value	Common Stock Issuable Upon Conversion
Series A convertible preferred stock	1,291	—	\$ —	\$ —
Series B convertible preferred stock	352	179	1,542	2,326
Series C convertible preferred stock	3,859	3,859	95,937	135,134
	<u>5,502</u>	<u>4,038</u>	<u>\$97,479</u>	<u>\$ 137,460</u>
				<u>40,382</u>

The rights and preferences of the Series A Preferred Stock, Series B convertible preferred stock (the “Series B Preferred Stock”) and Series C convertible preferred stock (the “Series C Preferred Stock”) are described below:

Voting Rights

The holders of Convertible Preferred Stock are entitled to vote, together with the holders of common stock, on all matters submitted to the stockholders for vote. The holders of the Convertible Preferred Stock are entitled to the number of votes equal to the number of shares of common stock into which such shares of Convertible Preferred Stock could convert.

Dividends

Holders of the Convertible Preferred Stock are entitled to receive cumulative dividends, when and if declared by the board of directors. Dividends on Convertible Preferred Stock accrue at a rate of \$0.5376 per share for Series B Preferred Stock and \$1.499694 per share for Series C Preferred Stock from the date of issuance of share of each series of Convertible Preferred Stock. In the case of a dividend on common stock, the holders of Convertible Preferred Stock are entitled to receive payment equal to the pro rata per share amount of the declared dividend on an as-converted to common stock basis. Except with the consent of the holders of the Convertible Preferred Stock voting as a single class on an as-converted to common stock basis, no dividends may be paid on common stock or a lesser class of preferred stock until the dividends accruing to the Convertible Preferred Stock are paid in full. As of December 31, 2016, no dividends had been declared by the board of directors, except for the special cash dividends declared on November 30, 2014, June 17, 2016 and December 21, 2016, payable to the holders of the Company’s common and preferred stock.

Conversion

Each share of Convertible Preferred Stock may be converted at any time at the option of the holder or will automatically be converted into shares of common stock at the applicable conversion rate then in effect (i) upon the closing of a firm commitment public offering of the Company’s common stock with gross proceeds to the Company of at least \$100,000 and a price per share of at least \$9.99796 or (ii) upon the vote or written consent of the holders of at least a majority of the votes represented by the then-outstanding shares of Convertible Preferred Stock, voting together as a single class and on an as-converted to common stock basis.

The conversion ratio of each series of preferred stock is determined by dividing the Original Issue Price of each series by the Conversion Price of each series. The Original Issue Price per share is \$8.96 for Series B Preferred Stock and \$24.9949 for Series C Preferred Stock. The Conversion Price per share is \$0.896 for Series B Preferred Stock and \$2.49949 for Series C Preferred Stock, subject to appropriate adjustment in the event of any

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deemed issuance of additional shares, stock dividend, stock split combination or other similar recapitalization and other adjustments as set forth in the Company's certificate of incorporation, as amended and restated. As of December 31, 2015 and 2016, all outstanding shares of Convertible Preferred Stock were convertible into common stock on a 10-for-1 basis. Shares of preferred stock that are converted into shares of common stock may not be reissued.

Liquidation Preference

In the event of any voluntary or involuntary liquidation, dissolution or winding-up of the Company or Liquidating Event (as described below), the holders of the Convertible Preferred Stock will receive, in preference to the common stockholders, an amount equal to the greater of (i) the Original Issue Price per share of the respective share of preferred stock, plus all accrued but unpaid dividends (whether or not declared) or (ii) the amount the holders would receive if the Convertible Preferred Stock were converted into common stock immediately prior to such liquidation event. If, upon any such liquidation event, the assets of the Company available for distribution are insufficient to permit payment in full to the holders of Convertible Preferred Stock, the proceeds will be ratably distributed among the holders of Convertible Preferred Stock in proportion to the respective amounts that they would have received if they were paid in full. After payments of all preferential amounts have been made in full to the holders of Convertible Preferred Stock, then, to the extent available, the remaining assets available for distribution will be distributed among the common stockholders ratably in proportion to the number of shares of common stock held by each common stockholder. As of December 31, 2016, accrued but undeclared dividends totaled \$723 for the Series B Preferred Stock and \$38,674 for Series C Preferred Stock.

A Liquidating Event shall include a merger or consolidation (other than one in which stockholders of the Company own a majority by voting power of the outstanding shares of the surviving or acquiring corporation) or a sale, exchange, transfer or other disposition of all or substantially all of the assets of the Company.

Redemption

The Company's certificate of incorporation, as amended and restated, does not provide redemption rights to the holders of Convertible Preferred Stock.

Special Dividends to Holders of Common and Preferred Stock

November 2014 Special Dividend

On November 30, 2014, the board of directors declared and the stockholders approved a special cash 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 convertible preferred stock (the "Series B Preferred Stock") and \$3.8346 per share of Series C convertible preferred stock (the "Series C Preferred Stock"). Related to this special dividend declared in November 2014, the Company paid \$27,251 and \$345 of dividends to the common and preferred stockholders during the years ended December 31, 2014 and 2015, respectively, and no dividends were payable as of December 31, 2015 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

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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, 2014, 2015 and 2016, the Company paid \$1,618, \$367 and \$203, respectively, to the holders of stock options and SARs for vested equity awards. As of December 31, 2015 and 2016, equitable adjustment payments to be made as equity awards vest through fiscal 2018, net of estimated forfeitures, totaled \$383 and \$180, respectively, 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 \$12,111, \$686 and \$14,799, respectively, and the equitable adjustment to the holders of stock options and SARs, net of estimated forfeitures, totaled \$2,369. The \$29,965 aggregate amount of such dividends and equitable adjustments was recorded as a charge to retained earnings (until reduced to zero) and a charge to additional paid-in capital during the year ended December 31, 2014.

June 2016 Special Dividend

On June 17, 2016, the board of directors declared and the stockholders approved a special cash 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, 2016, no dividends were payable.

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 year ended December 31, 2016, the Company paid \$4,678 to the holders of such vested equity awards. As of December 31, 2016, equitable adjustment payments to be made as equity awards vest through fiscal 2020, net of estimated forfeitures, totaled \$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.

December 2016 Special Dividend

On December 21, 2016, the board of directors declared, and on December 29, 2016 the stockholders approved, a special cash 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 \$94,272 of dividends to the common and preferred stockholders

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during the year ended December 31, 2016, 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. All of these accrued dividend payments were made in January 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, 2016, no payments were made to the holders of such vested equity awards. As of December 31, 2016, equitable adjustment payments to be made as equity awards vest through fiscal 2020, net of estimated forfeitures, totaled \$28,121 and were included in accrued expenses and other current liabilities in the accompanying consolidated balance sheet. In January 2017, the Company paid \$19,123 of equitable adjustments related to the December 2016 special dividend.

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.

11. Common Stock

As of December 31, 2015 and 2016, the Company's certificate of incorporation, as amended and restated, authorized the Company to issue 100,000 shares of \$0.001 par value common stock. The voting, dividend and liquidation rights of the holders of the Company's common stock are subject to and qualified by the rights, powers and preferences of the holders of the Convertible Preferred Stock set forth above.

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, 2016, except for the special cash dividends declared on November 30, 2014, June 17, 2016 and December 21, 2016 (see Note 10), no dividends have been declared by the board of directors.

As of December 31, 2016, the Company had reserved 59,660 shares of common stock for the conversion of outstanding shares of Convertible Preferred Stock (see Note 10), the exercise of outstanding stock options, the vesting of outstanding RSUs, and the number of shares remaining available for grant under the Company's 2011 Stock Incentive Plan (see Note 13).

12. Common Stock Warrants

In June 2009, in connection with the issuance of Series B Preferred Stock, the Company entered into an agreement with an investor, Liberty Global Ventures Holding B.V. (the "Series B Investor"), to issue warrants for the purchase of up to 3,964 shares of the Company's common stock, at an exercise price of \$0.90 per share, subject to the achievement of specified targets for the amount of purchases made by a subsidiary of the Series B Investor, Liberty Global Services B.V. (the "Series B Subsidiary"), from the Company. Pursuant to the

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agreement, the Series B Investor was entitled to receive warrants for the purchase 264 shares of the Company’s common stock for every \$5,000 of net revenues, as defined in the warrant agreement, received by the Company from the Series B Subsidiary for the period from January 1, 2009 through December 31, 2011. Under the agreement, the Series B Investor received warrants for the purchase of 2,643 shares of the Company’s common stock. The warrants were due to expire in June 2014. Due to specified anti-dilution provisions included in the terms of those warrants, the warrant was classified as a liability for accounting purposes. The warrant liability was remeasured to its fair value at the end of each reporting period until it was exercised, and the related change in fair value was recorded as an increase or decrease in other income (expense) in the consolidated statements of operations and comprehensive income. The Company recorded other expense of \$1,523 during the year ended December 31, 2014 related to the change in fair value of these warrants.

All of the warrants for the purchase of 2,643 shares of common stock were exercised on March 31, 2014, and the Company received proceeds of \$2,369. Upon exercise of the warrants, the Company recorded an increase to additional paid-in capital equal to the \$3,695 remeasured fair value of the warrant liability immediately prior to exercise of the warrants and recorded an increase to common stock and additional paid-in capital of \$2,369 for the cash proceeds received.

The Company calculated the fair value of the warrants outstanding as of the exercise date of March 31, 2014 using the Black-Scholes option-pricing model and the following assumptions:

Contractual term (in years)	0.2
Risk-free interest rate	0.1%
Expected volatility	55.7%
Expected dividend yield	0.0%

13. 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 2011 Plan.

2011 Stock Incentive Plan

The 2011 Plan provides 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 is 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 are 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 may not be less than 100% of the fair

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market value of common stock on the date of grant and the term of the stock option may 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). Any award that expires or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part shall again be available for grant.

The total number of shares authorized for issuance under the 2011 Plan was 17,424 shares as of December 31, 2014, of which 4,638 shares remained available for future grant. In June 2015, the Company effected an increase in the number of shares of common stock authorized for future issuance under the 2011 Plan by 5,000 shares. The total number of shares authorized for issuance under the 2011 Plan was 23,024 shares as of December 31, 2015, of which 5,149 shares remained available for future grant. The total number of shares authorized for issuance under the 2011 Plan was 23,024 shares as of December 31, 2016, of which 3,473 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 and December 2016 (see Note 10), and in that circumstance, 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, the Company's board of directors has considered the fair value of the common stock as of the measurement date. The fair value of the common stock has been 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.

The assumptions used in the Black-Scholes option-pricing model were as follows, presented on a weighted-average basis:

	Year Ended December 31,		
	2014	2015	2016
Risk-free interest rate	1.9%–2.1%	1.4%–2.0%	1.1%–1.5%
Expected term (in years)	5.8–6.2	5.6–6.2	4.7–6.2
Expected volatility	52.1%–56.5%	41.3%–52.5%	34.2%–40.4%
Expected dividend yield	0.0%	0.0%	0.0%

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Stock Options

A summary of option activity under the 2003 Plan and the 2011 Plan for the year ended December 31, 2016 is as follows:

	<u>Number of Shares</u>	<u>Weighted- Average Exercise Price</u>	<u>Weighted- Average Remaining Contractual Term (in years)</u>	<u>Aggregate Intrinsic Value</u>
Outstanding at January 1, 2016	13,404	\$ 2.88	7.41	\$ 73,852
Granted	1,779	9.29		
Exercised	(466)	1.27		
Forfeited	(310)	6.94		
Outstanding at December 31, 2016	<u>14,407</u>	\$ 3.64	6.79	\$123,844
Options exercisable at December 31, 2016	9,714	\$ 2.22	5.94	\$ 97,275
Vested or expected to vest at December 31, 2016	14,133	\$ 3.57	6.75	\$122,470

The weighted-average grant-date fair value of options granted during the years ended December 31, 2014, 2015 and 2016 was \$1.51, \$2.75 and \$3.71 per share, respectively. Cash proceeds received upon the exercise of options were \$4,297, \$226 and \$594 during the years ended December 31, 2014, 2015 and 2016, respectively. The intrinsic value of stock options exercised during the years ended December 31, 2014, 2015 and 2016 was \$2,021, \$720 and \$5,001, respectively. The aggregate intrinsic value of 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.

Restricted Stock Units

On January 23, 2015 and March 26, 2016, the Company granted 2,103 and 244 RSUs, respectively, under the 2011 Plan. The RSUs vest ratably over a three- 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 three 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 for the year ended December 31, 2016 is as follows:

	<u>Number of Shares</u>	<u>Weighted-Average Grant Date Fair Value</u>	<u>Aggregate Fair Value</u>
Unvested balance at January 1, 2016	2,103	\$ 4.18	
Granted	244	8.39	
Vested	(949)	4.18	\$ 7,967
Unvested balance at December 31, 2016	<u>1,398</u>	\$ 4.92	

During the year ended December 31, 2016, the Company withheld 37 shares of common stock in settlement of employee tax withholding obligations due upon the vesting of RSUs. The Company had no RSUs that vested during the year ended December 31, 2015.

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Stock Appreciation Rights

In September 2016, the Company granted 30 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 \$10.84 per share and the grant-date fair value was \$4.10 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, 2016, 140 SARs were outstanding and 30 were unvested. As of December 31, 2016, there were 110 SARs exercisable and the fair value of each SAR was \$10.54 per SAR. The fair value of the SAR liability as of December 31, 2015 and 2016 was \$737 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 \$1,991, \$7,321 and \$8,304 during the years ended December 31, 2014, 2015 and 2016, respectively, which is based on the number of stock options, RSUs and SARs ultimately expected to vest. As of December 31, 2016, there was \$14,535 of unrecognized compensation cost related to outstanding stock options, RSUs and SARs, which is expected to be recognized over a weighted-average period of 2.59 years.

Stock-based compensation expense related to stock options, RSUs and SARs for the years ended December 31, 2014, 2015 and 2016 was classified in the consolidated statements of operations and comprehensive income as follows as follows:

	Year Ended December 31,		
	2014	2015	2016
Cost of revenue	\$ 161	\$ 143	\$ 237
Research and development expenses	852	1,843	2,306
Sales and marketing expenses	598	775	1,147
General and administrative expenses	380	4,560	4,614
	<u>\$1,991</u>	<u>\$7,321</u>	<u>\$8,304</u>

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14. Net Income (Loss) per Share and Unaudited Pro Forma Net Income per Share
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,		
	2014	2015	2016
Numerator:			
Net income	\$ 59,708	\$ 67,921	\$ 88,668
Cumulative dividends on convertible preferred stock	(5,884)	(5,884)	(5,884)
Dividends declared on convertible preferred stock	(15,485)	—	(117,903)
Undistributed earnings allocated to participating securities	(15,052)	(34,735)	—
Net income (loss) attributable to common stockholders, basic	23,287	27,302	(35,119)
Undistributed earnings reallocated to dilutive potential common shares	556	3,100	—
Net income (loss) attributable to common stockholders, diluted	<u>\$ 23,843</u>	<u>\$ 30,402</u>	<u>\$ (35,119)</u>
Denominator:			
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders, basic	29,983	31,740	32,864
Dilutive effect of stock options	2,700	6,332	—
Dilutive effect of restricted stock units	—	737	—
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders, diluted	<u>32,683</u>	<u>38,809</u>	<u>32,864</u>
Net income (loss) per share attributable to common stockholders:			
Basic	<u>\$ 0.78</u>	<u>\$ 0.86</u>	<u>\$ (1.07)</u>
Diluted	<u>\$ 0.73</u>	<u>\$ 0.78</u>	<u>\$ (1.07)</u>

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,		
	2014	2015	2016
Convertible preferred stock (on an as-converted basis)	40,382	40,382	40,382
Options to purchase common stock	2,366	1,649	14,407
Unvested restricted stock units	—	—	1,398
Warrants to purchase common stock	307	—	—

Unaudited Pro Forma Net Income per Share

Unaudited pro forma basic and diluted net income per share attributable to common stockholders for the year ended December 31, 2016 have been prepared to give effect, upon the closing of a qualified initial public offering, to (i) the automatic conversion of all outstanding shares of convertible preferred stock into shares of common stock as if the proposed initial public offering had occurred on January 1, 2016 and (ii) the number of shares offered in the initial public offering whose proceeds are deemed necessary, based on an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of

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this prospectus, to pay the \$202,031 amount by which the special cash dividends of \$171,425, \$87,133 and \$42,961 declared by the Company's board of directors on December 21, 2016, May 10, 2017 (unaudited) and November 30, 2017 (unaudited), respectively, exceeded the Company's earnings for the twelve-month period ended September 30, 2017; however, such number of shares included in the denominator of the calculation of unaudited pro forma net income per share is limited to the total number of shares to be issued in the offering.

The unaudited pro forma net income per share data have been presented in accordance with Securities and Exchange Commission SAB Topic 1B.3. In accordance with SAB Topic 1B.3, dividends declared at or in the twelve-month period preceding an initial public offering are deemed to be in contemplation of the offering with the intention of repayment out of the offering proceeds to the extent that the amount of dividends exceeded the amount of earnings during the twelve-month period ended on the most recent balance sheet date. For the twelve-month period ended September 30, 2017 (unaudited), the Company's net income was \$99,488.

Unaudited pro forma basic and diluted net income per share attributable to common stockholders was calculated as follows:

	Year Ended December 31, 2016 (unaudited)
Numerator:	
Net income	\$ 88,668
Denominator:	
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders, basic	32,864
Pro forma adjustment to reflect assumed conversion of convertible preferred stock upon closing of initial public offering	40,382
Pro forma adjustments to reflect the number of shares whose proceeds are deemed necessary to pay dividends in excess of earnings	8,400
Pro forma weighted-average shares used in computing pro forma net income per share attributable to common stockholders, basic	81,646
Dilutive effect of stock options	8,817
Dilutive effect of restricted stock units	870
Pro forma weighted-average shares used in computing pro forma net income per share attributable to common stockholders, diluted	91,333
Pro forma net income per share attributable to common stockholders:	
Basic	\$ 1.09
Diluted	\$ 0.97

15. 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.

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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,		
	2014	2015	2016
North America:			
United States	\$ 106,639	\$ 54,365	\$ 105,318
Canada	737	153	78,623
Total North America	107,376	54,518	183,941
Latin America:			
Mexico	4,092	66,991	18,631
Other	25,823	20,391	28,683
Total Latin America	29,915	87,382	47,314
Europe, Middle East and Africa:			
Belgium	—	30,794	2,502
Other	32,407	44,973	42,703
Total Europe, Middle East and Africa	32,407	75,767	45,205
Asia-Pacific:			
Japan	27,003	25,433	19,054
Other	14,577	29,350	20,614
Total Asia-Pacific	41,580	54,783	39,668
Total revenue⁽¹⁾	\$ 211,278	\$ 272,450	\$ 316,128

(1) Other than the United States, Mexico, Belgium, Japan and Canada, no individual countries represented 10% or more of the Company's total revenue for each of the periods presented.

The Company's property and equipment, net by location was as follows:

	December 31,	
	2015	2016
United States	\$ 18,465	\$ 21,984
China	2,460	2,305
Other	1,403	1,393
Total property and equipment, net	<u>\$ 22,328</u>	<u>\$ 25,682</u>

16. 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 Series B Preferred Stock. Affiliates of Liberty Global Ventures Holding B.V. ("Liberty Global Affiliates") are customers of the Company. During the years ended December 31, 2014, 2015 and 2016, the Company recognized revenue of \$14,807, \$46,069 and \$31,737, respectively, from transactions with Liberty Global Affiliates and amounts received in cash from Liberty Global Affiliates totaled \$13,774, \$37,012 and \$29,143, respectively. As of December 31, 2015 and 2016, amounts due from Liberty Global Affiliates totaled \$12,367 and \$15,619, respectively.

In addition, on March 31, 2014, Liberty Global Ventures Holding B.V. exercised outstanding warrants to purchase 2,643 shares of the Company's common stock (see Note 12), and the Company received proceeds of \$2,369.

CASA SYSTEMS, INC.**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**
(Amounts in thousands, except per share amounts)***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, 2014, 2015 and 2016, the Company recognized sales and marketing expenses of \$503, \$441 and \$323, respectively, and paid Mr. Styslinger \$454, \$542 and \$459, respectively, for his services under this consulting agreement. As of December 31, 2015, the amount due to Mr. Styslinger for his consulting services was \$137, and 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 years ended December 31, 2014 and 2015, the Company recognized sales and marketing expenses of \$175 and \$15, respectively, 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 and December 2016 (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 \$60, \$12 and \$150 as equitable adjustments in the years ended December 31, 2014, 2015 and 2016, respectively. In connection with the special dividend declared in December 2016, the Company paid Mr. Styslinger \$616 as an equitable adjustment in January 2017.

Employment of Rongke Xie

Rongke Xie, who serves as Deputy General Manager of Guangzhou Casa Communication Technology LTD, one of the Company's subsidiaries, is the sister of Lucy Xie, the Company's Senior Vice President of Operations and a member of its board of directors. During the years ended December 31, 2014, 2015 and 2016, the Company paid Rongke Xie \$154, \$140 and \$140, respectively, for her services as an employee of the Company.

In addition, in May 2006, the Company granted to Rongke Xie an option to purchase 100 shares of common stock, at an exercise price of \$0.10 per share, which vested as to one-fourth 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. In connection with the special dividend declared in November 2014 (see Note 10), the Company paid Rongke Xie \$19 as an equitable adjustment in the year ended December 31, 2015.

17. Commitments and Contingencies***Operating Leases***

The Company leases manufacturing, warehouse and office space in the United States, China and Ireland under non-cancelable operating leases that expire in 2021, 2019 and 2026, with a right to terminate in 2021,

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respectively. Rent expense for the years ended December 31, 2014, 2015 and 2016 was \$1,337, \$773 and \$572, respectively. Rent expense is recorded on a straight-line basis, and, as a result, as of December 31, 2015 and 2016, the Company had a deferred rent liability of \$64 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, 2016 were as follows:

<u>Year Ending December 31,</u>	
2017	\$ 561
2018	730
2019	492
2020	486
2021	305
	<u>\$2,574</u>

In February 2017, the Company entered into a lease for office space in Spain under a non-cancelable operating lease that expires in January 2022. Future minimum lease payments due under this lease are not included in the table above presented as of December 31, 2016 and total less than \$51 in each of the six years ending December 31, 2022 and aggregate \$252 for the entire lease term.

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, 2015 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.

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, 2016, 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.

18. 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

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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 \$628, \$977 and \$1,313 in the years ended December 31, 2014, 2015 and 2016, respectively.

19. Subsequent Events

For its consolidated financial statements as of December 31, 2016 and for the year then ended, the Company evaluated subsequent events through March 8, 2017, the date on which those financial statements were issued, and, with respect to the stock split described below, through December 4, 2017.

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.

20. Subsequent Events (Unaudited)

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 Stock Incentive Plan (the "2017 Plan"), which will become effective immediately prior to the effectiveness of the registration statement for the Company's initial public offering. 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, 2018 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.

November 2017 Special Dividend

On November 30, 2017, the board of directors declared a special dividend, contingent upon, and to be payable following, the closing of the Company's initial public offering to the holders of record of the Company's common stock and preferred stock as of November 30, 2017. The cash dividend declared to stockholders was \$0.5799 per share of common stock, \$5.7990 per share of Series B Preferred Stock and \$5.7990 per share of

CASA SYSTEMS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(Amounts in thousands, except per share amounts)

Series C Preferred Stock. 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 \$0.5799 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.

The cash dividends declared to the holders of common stock, Series B Preferred Stock and Series C Preferred Stock totaled \$19,543, \$1,038 and \$22,380, respectively, and the equitable adjustment to the holders of stock options, SARs and RSUs totaled \$7,037 before estimated forfeitures.

CASA SYSTEMS, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(Amounts in thousands, except per share amounts)
(Unaudited)

	December 31, 2016	September 30, 2017	Pro Forma September 30, 2017
Assets			
Current assets:			
Cash and cash equivalents	\$ 329,554	\$ 183,519	\$ 183,519
Marketable securities	14,392	—	—
Accounts receivable, net of provision for doubtful accounts of \$690 and \$702 as of December 31, 2016 and September 30, 2017, respectively	110,234	97,544	97,544
Inventory	65,975	49,443	49,443
Prepaid expenses and other current assets	7,178	5,725	5,725
Prepaid income taxes	39	—	—
Total current assets	527,372	336,231	336,231
Property and equipment, net	25,682	27,928	27,928
Accounts receivable, net of current portion	6,629	5,528	5,528
Deferred tax assets	21,140	19,839	19,839
Deferred offering costs	1,464	2,112	2,112
Other assets	748	597	597
Total assets	<u>\$ 583,035</u>	<u>\$ 392,235</u>	<u>\$ 392,235</u>
Liabilities, Convertible Preferred Stock and Stockholders' Deficit			
Current liabilities:			
Accounts payable	\$ 21,704	\$ 3,820	\$ 3,820
Accrued expenses and other current liabilities	149,184	34,047	84,045
Accrued income taxes	11,823	5,679	5,679
Deferred revenue	55,876	43,353	43,353
Current portion of long-term debt, net of unamortized debt issuance costs	2,133	2,150	2,150
Total current liabilities	240,720	89,049	139,047
Accrued income taxes, net of current portion	463	2,064	2,064
Deferred revenue, net of current portion	18,458	15,852	15,852
Long-term debt, net of current portion and unamortized debt issuance costs	297,618	295,997	295,997
Total liabilities	<u>557,259</u>	<u>402,962</u>	<u>452,960</u>
Commitments and contingencies (Note 15)			
Convertible preferred stock (Series A, B and C), \$0.001 par value; 6,000 shares authorized as of December 31, 2016 and September 30, 2017; 4,038 shares issued and outstanding as of December 31, 2016 and September 30, 2017; aggregate liquidation preference of \$141,862 as of September 30, 2017; no shares issued or outstanding, pro forma as of September 30, 2017			
	<u>97,479</u>	<u>97,479</u>	<u>—</u>
Stockholders' deficit:			
Common stock, \$0.001 par value; 100,000 shares authorized as of December 31, 2016 and September 30, 2017; 33,184 and 33,701 shares issued and outstanding as of December 31, 2016 and September 30, 2017, respectively; 74,083 shares issued and outstanding, pro forma as of September 30, 2017	33	34	74
Additional paid-in capital	—	—	47,441
Accumulated other comprehensive loss	(1,739)	(460)	(460)
Accumulated deficit	(69,997)	(107,780)	(107,780)
Total stockholders' deficit	<u>(71,703)</u>	<u>(108,206)</u>	<u>(60,725)</u>
Total liabilities, convertible preferred stock and stockholders' deficit	<u>\$ 583,035</u>	<u>\$ 392,235</u>	<u>\$ 392,235</u>

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

CASA SYSTEMS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME
(Amounts in thousands, except per share amounts)
(Unaudited)

	Nine Months Ended September 30,	
	2016	2017
Revenue:		
Product	\$ 191,763	\$ 205,155
Service	25,139	28,458
Total revenue	<u>216,902</u>	<u>233,613</u>
Cost of revenue:		
Product	68,793	62,865
Service	5,983	3,637
Total cost of revenue	<u>74,776</u>	<u>66,502</u>
Gross profit	<u>142,126</u>	<u>167,111</u>
Operating expenses:		
Research and development	37,213	43,912
Sales and marketing	27,289	26,983
General and administrative	13,532	14,387
Total operating expenses	<u>78,034</u>	<u>85,282</u>
Income from operations	<u>64,092</u>	<u>81,829</u>
Other income (expense):		
Interest income	811	1,674
Interest expense	(256)	(12,937)
Gain (loss) on foreign currency, net	(45)	773
Other income, net	443	632
Total other income (expense), net	<u>953</u>	<u>(9,858)</u>
Income before provision for income taxes	65,045	71,971
Provision for income taxes	16,228	12,334
Net income	48,817	59,637
Other comprehensive income (expense)—foreign currency translation adjustment, net of tax	(574)	1,279
Comprehensive income	<u>\$ 48,243</u>	<u>\$ 60,916</u>

CASA SYSTEMS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND
COMPREHENSIVE INCOME (Continued)
(Amounts in thousands, except per share amounts)
(Unaudited)

	Nine Months Ended September 30,	
	2016	2017
Cash dividends declared per common share or common share equivalents	<u>\$ 0.5891</u>	<u>\$ 1.1774</u>
Net income attributable to common stockholders:		
Basic	<u>\$ 19,928</u>	<u>\$ 7,689</u>
Diluted	<u>\$ 20,006</u>	<u>\$ 7,689</u>
Net income per share attributable to common stockholders:		
Basic	<u>\$ 0.61</u>	<u>\$ 0.23</u>
Diluted	<u>\$ 0.47</u>	<u>\$ 0.18</u>
Weighted-average shares used to compute net income per share attributable to common stockholders:		
Basic	<u>32,822</u>	<u>33,657</u>
Diluted	<u>42,137</u>	<u>43,198</u>
Pro forma net income per share attributable to common stockholders (unaudited):		
Basic		<u>\$ 0.72</u>
Diluted		<u>\$ 0.65</u>
Weighted-average shares used to compute pro forma net income per share attributable to common stockholders (unaudited):		
Basic		<u>82,439</u>
Diluted		<u>91,979</u>

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

CASA SYSTEMS, INC.
**CONDENSED CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND
 STOCKHOLDERS' DEFICIT**
 (Amounts in thousands, except per share amounts)
 (Unaudited)

	Series A, B and C Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount	Shares	Amount				
Balances at January 1, 2017	<u>4,038</u>	<u>\$97,479</u>	<u>33,184</u>	<u>\$ 33</u>	<u>\$ —</u>	<u>\$ (1,739)</u>	<u>\$ (69,997)</u>	<u>\$ (71,703)</u>
Exercise of stock options and common stock issued upon vesting of restricted stock units, net of shares withheld for employee taxes	—	—	517	1	(3,585)	—	—	(3,584)
Foreign currency translation adjustment, net of tax of \$0	—	—	—	—	—	1,279	—	1,279
Cash dividends declared (\$1.1774 per share of common stock, \$11.7744 per share of convertible preferred stock and \$1.1774 per share to holders of stock-based awards)	—	—	—	—	(2,436)	—	(97,420)	(99,856)
Stock-based compensation	—	—	—	—	6,021	—	—	6,021
Net income	—	—	—	—	—	—	59,637	59,637
Balances at September 30, 2017	<u>4,038</u>	<u>\$97,479</u>	<u>33,701</u>	<u>\$ 34</u>	<u>\$ —</u>	<u>\$ (460)</u>	<u>\$ (107,780)</u>	<u>\$ (108,206)</u>

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

CASA SYSTEMS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in thousands)
(Unaudited)

	Nine Months Ended September 30,	
	2016	2017
Cash flows from operating activities:		
Net income	\$ 48,817	\$ 59,637
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	4,451	5,576
Stock-based compensation	5,974	5,893
Deferred income taxes	(4,015)	1,347
Excess and obsolete inventory valuation adjustment	(19)	673
Increase in provision for doubtful accounts	17	—
Changes in operating assets and liabilities:		
Accounts receivable	24,583	14
Inventory	1,741	13,074
Prepaid expenses and other assets	(1,851)	1,651
Prepaid income taxes	(185)	52
Accounts payable	15,562	(16,694)
Accrued expenses and other current liabilities	11,547	(2,331)
Accrued income taxes	(4,873)	(4,558)
Deferred revenue	22,320	(15,280)
Net cash provided by operating activities	124,069	49,054
Cash flows provided by (used in) investing activities:		
Purchases of property and equipment	(6,159)	(4,703)
Proceeds from maturities of marketable securities	—	14,589
Net cash (used in) provided by investing activities	(6,159)	9,886
Cash flows used in financing activities:		
Principal repayments of debt	(210)	(2,468)
Proceeds from exercise of stock options	172	204
Payments of dividends and equitable adjustments	(47,793)	(198,187)
Payments of initial public offering costs	—	(1,511)
Employee taxes paid related to net share settlement of restricted stock units	(315)	(3,788)
Net cash used in financing activities	(48,146)	(205,750)
Effect of exchange rate changes on cash and cash equivalents	(554)	775
Net increase (decrease) in cash and cash equivalents	69,210	(146,035)
Cash and cash equivalents at beginning of period	92,496	329,554
Cash and cash equivalents at end of period	<u>\$161,706</u>	<u>\$ 183,519</u>
Supplemental disclosures of cash flow information:		
Cash paid for interest	\$ 207	\$ 12,197
Cash paid for income taxes	\$ 25,200	\$ 15,204
Supplemental disclosures of non-cash operating, investing and financing activities:		
Purchases of property and equipment included in accounts payable	\$ 552	\$ 901
Deferred offering costs included in accounts payable and accrued expenses and other current liabilities	\$ —	\$ 85
Unpaid equitable adjustments included in accrued expenses and other current liabilities	\$ 2,471	\$ 9,178
Release of customer incentives included in accounts receivable and accrued expenses and other current liabilities	\$ 1,265	\$ 13,930

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

CASA SYSTEMS, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

(Amounts in thousands, except per share amounts)

(Unaudited)

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 provides 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. In addition, the Company offers solutions for next-generation distributed and virtualized architectures in cable operator, fixed telecom and wireless networks. The Company’s innovative solutions enable customers to cost-effectively and dynamically increase network speed, add bandwidth capacity, reconfigure and add new services for consumers and enterprises, reduce network complexity and reduce operating and capital expenditures.

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.

The accompanying condensed consolidated balance sheet as of September 30, 2017, the condensed consolidated statements of operations and comprehensive income for the nine months ended September 30, 2016 and 2017, the condensed consolidated statements of cash flows for the nine months ended September 30, 2016 and 2017 and the condensed consolidated statements of convertible preferred stock and stockholders’ deficit for the nine months ended September 30, 2017 are unaudited. The financial data and other information disclosed in these notes related to the nine months ended September 30, 2016 and 2017 are also unaudited. The accompanying consolidated balance sheet as of December 31, 2016 was derived from the Company’s audited consolidated financial statements for the year ended December 31, 2016. The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States (“GAAP”) regarding interim financial reporting. Certain information and note disclosures normally included in the consolidated financial statements prepared in accordance with GAAP have been condensed or omitted. Therefore, these condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and notes included in the Company’s audited consolidated financial statements for the year ended December 31, 2016.

The unaudited interim condensed consolidated financial statements have been prepared on a basis consistent with that used to prepare the audited annual consolidated financial statements and, in the opinion of management, include all adjustments, consisting of only normal recurring adjustments, necessary for a fair statement of the financial position, results of operations and cash flows for the interim periods, but are not necessarily indicative of the results of operations and cash flows to be anticipated for the full year ending December 31, 2017 or any future period.

CASA SYSTEMS, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)
(Unaudited)

The accompanying condensed consolidated financial statements include the accounts and results of operations of the Company and its wholly owned subsidiaries. All intercompany transactions and balances have been eliminated in consolidation.

2. Summary of Significant Accounting Policies

Unaudited Pro Forma Information

The accompanying unaudited pro forma consolidated balance sheet as of September 30, 2017 has been prepared to give effect, upon the closing of a qualified initial public offering, to the automatic conversion of all outstanding shares of convertible preferred stock into 40,382 shares of common stock as if the proposed initial public offering had occurred on September 30, 2017 and to the accrual of a special dividend of \$42,961, which was declared by the Company's board of directors on November 30, 2017, contingent upon, and to be payable following, the closing of the Company's initial public offering, and cash payments of \$7,037 to be made to holders of the Company's stock options, stock appreciation rights ("SARs") and restricted stock units ("RSUs") as equitable adjustments approved by the board of directors for payment in connection with the special dividend in the event that it is paid (see Note 16).

In the accompanying condensed consolidated statements of operations and comprehensive income, the calculation of the unaudited pro forma basic and diluted net income per share attributable to common stockholders for the nine months ended September 30, 2017 has been prepared to give effect, upon the closing of a qualified initial public offering, to (i) the automatic conversion of all outstanding shares of convertible preferred stock into shares of common stock as if the proposed initial public offering had occurred on January 1, 2016 and (ii) the number of shares offered in the initial public offering whose proceeds are deemed necessary, based on an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, to pay the \$202,031 amount by which the special cash dividends of \$171,425, \$87,133 and \$42,961 declared by the Company's board of directors on December 21, 2016, May 10, 2017 and November 30, 2017, respectively, exceeded the Company's earnings for the twelve-month period ended September 30, 2017; however, such number of shares included in the denominator of the calculation of unaudited pro forma net income per share is limited to the total number of shares to be issued in the offering.

The unaudited pro forma net income per share data have been presented in accordance with Securities and Exchange Commission Staff Accounting Bulletin Topic 1B.3 ("SAB Topic 1B.3"). In accordance with SAB Topic 1B.3, dividends declared at or in the twelve-month period preceding an initial public offering are deemed to be in contemplation of the offering with the intention of repayment out of the offering proceeds to the extent that the amount of dividends exceeded the amount of earnings during the twelve-month period ended on the most recent balance sheet date. For the twelve-month period ended September 30, 2017, the Company's net income was \$99,488.

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 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.

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NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)
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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.

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, 2016 and September 30, 2017 consisted of the following:

	December 31, 2016	September 30, 2017
Current portion of accounts receivable, net:		
Accounts receivable, net	\$ 87,250	\$ 85,662
Amounts due from related party (see Note 14)	15,619	7,390
Accounts receivable, extended payment arrangements	7,365	4,492
	<u>110,234</u>	<u>97,544</u>
Accounts receivable, net of current portion:		
Accounts receivable, extended payment arrangements	6,629	5,528
	<u>\$ 116,863</u>	<u>\$ 103,072</u>

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 condensed consolidated statements of operations and comprehensive income.

As of December 31, 2016 and September 30, 2017, the Company concluded that all amounts due under extended payment term arrangements were collectible and no reserve for credit losses was recorded. During the nine months ended September 30, 2016 and 2017, the Company did not provide a reserve for credit losses and did not write off any uncollectible receivables due under extended payment term arrangements.

CASA SYSTEMS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)
(Unaudited)

Other Revenue Recognition Policies

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 Accounting Standards Codification (“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 condensed consolidated balance sheet as of December 31, 2016 included amounts deferred for trade-in rights of \$8,477. As of September 30, 2017, no amounts for trade-in rights were deferred.

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, money market mutual funds, commercial paper 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.

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	
	Nine Months Ended September 30,		December 31,	September 30,
	2016	2017	2016	2017
Customer A	26%	36%	11%	59%
Customer B	*	11%	13%	*
Customer C	17%	*	21%	*
Customer D	*	*	12%	*

* Less than 10% of total

Customer B is a related party, Liberty Global Affiliates (see Note 14).

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 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.

Impact of Recently Adopted Accounting Standards

In July 2015, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2015-11, *Simplifying the Measurement of Inventory* (“ASU 2015-11”). Under ASU 2015-11,

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NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands, except per share amounts)
(Unaudited)

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 condensed 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. Early adoption of the standard is permitted for annual periods beginning after December 15, 2016. The standard is effective for private companies 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*, 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. In December 2016, the FASB issued ASU No. 2016-20, *Revenue from Contracts with Customers (Topic 606): Technical Corrections and Improvements*, which corrects unintended application of ASU 2014-09. ASU 2016-08, ASU 2016-10, ASU 2016-12 and ASU 2016-20 have the same effective dates and transition requirements as ASU 2014-09. The Company is currently assessing 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 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

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NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

(Amounts in thousands, except per share amounts)

(Unaudited)

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 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 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 for annual periods beginning after December 15, 2018, and interim periods within fiscal years beginning after December 15, 2019. The Company will adopt ASU 2016-15 during the first quarter of 2018, and adoption is not expected to have a material impact 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 for annual periods beginning after December 15, 2018, and interim reporting periods within annual periods beginning after December 15, 2019. The Company will adopt ASU 2016-16 during the first quarter of 2018, and adoption is not expected to have a material impact 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 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 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.

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3. Inventory

Inventory as of December 31, 2016 and September 30, 2017 consisted of the following:

	December 31, 2016	September 30, 2017
Raw materials	\$ 5,037	\$ 8,719
Work in process	103	11
Finished goods:		
Manufactured finished goods	60,866	43,545
Deferred inventory costs	4,488	2,376
	70,494	54,651
Valuation adjustment for excess and obsolete inventory	(4,519)	(5,208)
	<u>\$ 65,975</u>	<u>\$ 49,443</u>

4. Property and Equipment

Property and equipment as of December 31, 2016 and September 30, 2017 consisted of the following:

	December 31, 2016	September 30, 2017
Computers and purchased software	\$ 9,246	\$ 11,398
Leasehold improvements	1,044	1,171
Furniture and fixtures	1,516	1,581
Machinery and equipment	11,494	15,747
Land	3,091	3,091
Building	4,765	4,765
Building improvements	4,724	4,820
Trial systems at customers' sites	6,581	7,541
	42,461	50,114
Less: Accumulated depreciation and amortization	(16,779)	(22,186)
	<u>\$ 25,682</u>	<u>\$ 27,928</u>

During the nine months ended September 30, 2016 and 2017, the Company transferred trial systems from inventory into property and equipment with a value of \$758 and \$960, respectively, net of transfers of trial systems to cost of revenue. In addition, the Company transferred \$571 and \$1,666 of equipment from inventory into property and equipment during the nine months ended September 30, 2016 and 2017, respectively.

Total depreciation and amortization expense was \$4,451 and \$5,576 for the nine months ended September 30, 2016 and 2017, respectively.

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5. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities as of December 31, 2016 and September 30, 2017 consisted of the following:

	December 31, 2016	September 30, 2017
Accrued compensation and related taxes	\$ 18,475	\$ 15,577
Accrued warranty	1,256	1,301
Dividends and equitable adjustments payable (see Note 10)	107,509	9,178
Accrued customer incentives	15,449	5,380
Other accrued expenses	6,495	2,611
	<u>\$ 149,184</u>	<u>\$ 34,047</u>

Accrued Warranty

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 condensed 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 nine months ended September 30, 2016 and 2017 is as follows:

	Nine Months Ended September 30, 2016	2017
Warranty reserve at beginning of period	\$ 993	\$ 1,256
Provisions	1,595	1,448
Charges	(1,175)	(1,403)
Warranty reserve at end of period	<u>\$ 1,413</u>	<u>\$ 1,301</u>

6. 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 following tables present information about the fair value of the Company's financial assets and liabilities as of December 31, 2016 and September 30, 2017 and indicate the level of the fair value hierarchy utilized to determine such fair values:

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 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 contracts	—	56	—	56
	<u>\$ —</u>	<u>\$ 56</u>	<u>\$ 1,195</u>	<u>\$ 1,251</u>
Fair Value Measurements as of September 30, 2017 Using:				
	Level 1	Level 2	Level 3	Total
Assets:				
Certificates of deposit	\$ —	\$ 19,259	\$ —	\$ 19,259
Commercial paper	—	2,998	—	2,998
Money market mutual funds	147,032	—	—	147,032
Foreign currency contracts	—	5	—	5
	<u>\$ 147,032</u>	<u>\$ 22,262</u>	<u>\$ —</u>	<u>\$ 169,294</u>
Liabilities:				
SARs	\$ —	\$ —	\$ 1,067	\$ 1,067
Foreign currency contracts	—	12	—	12
	<u>\$ —</u>	<u>\$ 12</u>	<u>\$ 1,067</u>	<u>\$ 1,079</u>

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During the nine months ended September 30, 2016 and 2017, there were no transfers between Level 1, Level 2 and Level 3.

There were no changes to the valuation techniques used to measure asset and liability fair values on a recurring basis during the nine months ended September 30, 2017 from those included in the Company's audited consolidated financial statements for the year ended December 31, 2016. 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:

	Nine Months Ended September 30,	
	2016	2017
Fair value at beginning of period	\$ 737	\$ 1,195
Change in fair value	276	(128)
Fair value at end of period	<u>\$ 1,013</u>	<u>\$ 1,067</u>

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 September 30, 2017, the Company had foreign currency forward contracts outstanding with notional amounts totaling 3,264 euros maturing in the fourth quarter of 2017 and first quarter of 2018. As of December 31, 2016, the Company had foreign currency forward contracts outstanding with notional amounts totaling 11,171 euros maturing 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 condensed 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 and September 30, 2017, the Company recorded an asset of \$60 and \$5, respectively, and as of December 31, 2016 and September 30, 2017, the Company recorded a liability of \$56 and \$12, 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 condensed consolidated balance sheets.

8. Income Taxes

The Company's effective income tax rate was 24.9% and 17.1% for the nine months ended September 30, 2016 and 2017, respectively. The effective income tax rate is based on the estimated annual effective tax rate, adjusted for discrete tax items recorded in the period. The provision for income taxes was \$16,228 and \$12,334 for the nine months ended September 30, 2016 and 2017, respectively.

The Company determines its estimated annual effective tax rate at the end of each interim period based on estimated pre-tax income and facts known at that time. The estimated annual effective tax rate is applied to the

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year-to-date pre-tax income at the end of each interim period with certain adjustments. The tax effect of significant unusual or extraordinary items is discretely reflected in the period in which they occur. Our estimated annual effective tax rate can change based on the mix of jurisdictional pre-tax income and other factors.

The effective income tax rate for the nine months ended September 30, 2017 differed from the federal statutory rate due to foreign tax rate differential, permanent differences, research and development tax credits, excess tax benefit from stock-based transactions and state taxes. Permanent differences primarily included the nondeductible stock-based compensation expense.

The change in the provision for income taxes for the nine months ended September 30, 2017 compared to the nine months ended September 30, 2016 was primarily due to foreign tax rate differential impacted by the geographic distribution of earnings in foreign jurisdictions, excess tax benefit from stock-based transactions, permanent differences, and U.S. research and development tax credits. For the nine months ended September 30, 2017, the Company recorded tax benefits attributed to foreign jurisdiction earnings with lower effective tax rates and excess tax benefits from stock-based transactions and recorded a benefit attributed to U.S. federal research and development tax credits.

9. Debt

The aggregate principal amount of debt outstanding as of December 31, 2016 and September 30, 2017 consisted of the following:

	December 31, 2016	September 30, 2017
Term loans	\$ 300,000	\$ 297,750
Mortgage loan	7,553	7,335
Total principal amount of debt outstanding	<u>\$ 307,553</u>	<u>\$ 305,085</u>

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Current and non-current debt obligations reflected in the consolidated balance sheets as of December 31, 2016 and September 30, 2017 consisted of the following:

	December 31, 2016	September 30, 2017
Current liabilities:		
Term loans	\$ 3,000	\$ 3,000
Mortgage loan	292	300
Current portion of principal payment obligations	3,292	3,300
Unamortized debt issuance costs, current portion	(1,159)	(1,150)
Current portion of long-term debt, net of unamortized debt issuance costs	<u>\$ 2,133</u>	<u>\$ 2,150</u>
Non-current liabilities:		
Term loans	\$ 297,000	\$ 294,750
Mortgage loan	7,261	7,035
Non-current portion of principal payment obligations	304,261	301,785
Unamortized debt issuance costs, non-current portion	(6,643)	(5,788)
Long-term debt, net of current portion and unamortized debt issuance costs	<u>\$ 297,618</u>	<u>\$ 295,997</u>

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, 2016 and September 30, 2017, \$300,000 and \$297,750 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% interest rate floor) and 3.00% per annum for base rate loans. The applicable margin for borrowings under the revolving credit facility is 2.00% per annum for Eurodollar rate loans and 1.00% per annum for base rate loans, subject to reduction based on various factors, including the Company’s completion of an initial public offering and its

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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 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, 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. As of September 30, 2017, the interest rate on the Term Loans was 5.33% per annum, which was based on a three-month Eurodollar rate of 1.33% 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 \$2,250 were made under the term loan facility during the nine months ended September 30, 2017. Interest expense, including the amortization of debt issuance costs, totaled \$12,443 for the nine months ended September 30, 2017.

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. For the nine months ended September 30, 2017, interest expense related to the fee for the unused amount of the revolving credit facility totaled \$45.

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

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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, 2016 and September 30, 2017, 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 \$210 and \$218 during the nine months ended September 30, 2016 and 2017, respectively. Interest expense, including the amortization of debt issuance costs, totaled \$212 and \$204 for the nine months ended September 30, 2016 and 2017, respectively.

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, 2016 and September 30, 2017.

As of September 30, 2017, aggregate minimum future principal payments of the Company's debt are summarized as follows:

<u>Year Ending December 31,</u>	
2017	\$ 824
2018	3,303
2019	3,314
2020	9,644
2021	3,000
Thereafter	285,000
	<u>\$ 305,085</u>

10. Stockholders' Deficit

Special Dividends to Holders of Common and Preferred Stock

November 2014 Special Dividend

On November 30, 2014, the board of directors declared and the stockholders approved a special cash dividend to the holders of common stock and preferred stock of record on that date. The cash dividend declared

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to stockholders was \$0.3835 per share of common stock, \$3.8346 per share of Series B convertible preferred stock (the “Series B Preferred Stock”) and \$3.8346 per share of Series C convertible preferred stock (the “Series C Preferred Stock”). Related to this special dividend declared in November 2014, no dividend payments were made to the common and preferred stockholders during the nine months ended September 30, 2016 and 2017 and no dividends were payable as of December 31, 2016 or September 30, 2017.

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 nine months ended September 30, 2016 and 2017, the Company paid \$158 and \$94, respectively, to the holders of stock options and SARs for vested equity awards. As of December 31, 2016 and September 30, 2017, equitable adjustment payments to be made as equity awards vest through fiscal 2018, net of estimated forfeitures, totaled \$180 and \$86, respectively, and were included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheets.

June 2016 Special Dividend

On June 17, 2016, the board of directors declared and the stockholders approved a special cash 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 nine months ended September 30, 2016 and no dividends were payable as of December 31, 2016 or September 30, 2017.

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 nine months ended September 30, 2016 and 2017, the Company paid \$4,487 and \$940, respectively, to the holders of such vested equity awards. As of December 31, 2016 and September 30, 2017, equitable adjustment payments to be made as equity awards vest through fiscal 2020, net of estimated forfeitures, totaled \$2,055 and \$1,115, respectively, and were included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheets.

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.

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December 2016 Special Dividend

On December 21, 2016, the board of directors declared, and on December 29, 2016 the stockholders approved, a special cash 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 of dividends to the common and preferred stockholders during the nine months ended September 30, 2017, 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 condensed consolidated balance sheets. No dividends were payable as of September 30, 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 nine months ended September 30, 2017, the Company paid \$22,731 to the holders of such vested equity awards. As of December 31, 2016 and September 30, 2017, equitable adjustment payments to be made as equity awards vest through fiscal 2020, net of estimated forfeitures, totaled \$28,121 and \$5,390, respectively, and were included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheets.

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.

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 nine months ended September 30, 2017 and no dividends were payable as of September 30, 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 nine months ended September 30, 2017, the Company paid \$10,136 to the holders of such vested equity awards. As of September 30, 2017, equitable adjustment payments to be made as equity awards

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vest through fiscal 2021, net of estimated forfeitures, totaled \$2,587 and were included in accrued expenses and other current liabilities in the accompanying condensed 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 nine months ended September 30, 2017.

11. Stock-based Compensation

2011 Stock Incentive Plan

The 2011 Stock Incentive Plan (the “2011 Plan”) provides 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 total number of shares authorized for issuance under the 2011 Plan was 23,024 shares as of September 30, 2017, of which 2,782 shares remained available for future grant.

Stock Options

The following table summarizes the outstanding stock option activity and a summary of information related to stock options as of and for the nine months ended September 30, 2017:

	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	1,261	11.93		
Exercised	(99)	2.06		
Forfeited	(452)	8.06		
Outstanding at September 30, 2017	<u>15,117</u>	\$ 4.21	6.28	\$107,306
Options exercisable at September 30, 2017	11,169	\$ 2.73	5.55	\$ 95,237
Vested or expected to vest at September 30, 2017	14,894	\$ 4.13	6.25	\$106,849

The fair value of each option is estimated on the date of grant using the Black-Scholes option-pricing model using the following assumptions, presented on a weighted-average basis:

	Nine Months Ended September 30,	
	2016	2017
Risk-free interest rate	1.1%–1.6%	2.0%–2.1%
Expected term (in years)	4.7–6.2	6.0–6.2
Expected volatility	34.2%–40.4%	33.9%–38.5%
Expected dividend yield	0.0%	0.0%

The weighted-average grant-date fair value of options granted during the nine months ended September 30, 2016 and 2017 was \$3.71 and \$4.73 per share, respectively. Cash proceeds received upon the exercise of

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options were \$172 and \$204 during the nine months ended September 30, 2016 and 2017, respectively. The intrinsic value of stock options exercised during the nine months ended September 30, 2016 and 2017 was \$1,982 and \$930, 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.

Restricted Stock Units

A summary of RSU activity under the 2011 Plan for the nine months ended September 30, 2017 is as follows:

	<u>Number of Shares</u>	<u>Weighted- Average Grant Date Fair Value</u>	<u>Aggregate Fair Value</u>
Unvested balance at January 1, 2017	1,399	\$ 4.92	
Granted	191	12.16	
Vested	(728)	4.54	\$ 8,908
Unvested balance at September 30, 2017	<u>862</u>	\$ 6.85	

The Company withheld 37 and 310 shares of common stock in settlement of employee tax withholding obligations due upon the vesting of RSUs during the nine months ended September 30, 2016 and 2017, respectively.

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 September 30, 2017, 250 SARs were outstanding and 82 were unvested. As of September 30, 2017, there were 168 SARs exercisable and the fair value of each SAR was \$7.04 per SAR. The fair value of the SAR liability as of December 31, 2016 and September 30, 2017 was \$1,195 and \$1,067, respectively, (see Note 6) and was included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheets.

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Stock-Based Compensation Expense

Stock-based compensation expense related to stock options, RSUs and SARs for the nine months ended September 30, 2016 and 2017 was classified in the condensed consolidated statements of operations and comprehensive income as follows:

	Nine Months Ended September 30,	
	2016	2017
Cost of revenue	\$ 178	\$ 202
Research and development expenses	1,637	1,535
Sales and marketing expenses	846	801
General and administrative expenses	3,313	3,355
	<u>\$ 5,974</u>	<u>\$ 5,893</u>

As of September 30, 2017, there was \$15,682 of unrecognized compensation cost related to outstanding stock options, RSUs and SARs, which is expected to be recognized over a weighted-average period of 2.56 years.

12. Net Income per Share and Unaudited Pro Forma Net Income per Share

Net Income per Share

Basic and diluted net income per share attributable to common stockholders was calculated as follows:

	Nine Months Ended September 30,	
	2016	2017
Numerator:		
Net income	\$ 48,817	\$ 59,637
Cumulative dividends on convertible preferred stock	(4,401)	(4,401)
Dividends declared on convertible preferred stock	(23,789)	(47,547)
Undistributed earnings allocated to participating securities	(699)	—
Net income attributable to common stockholders, basic	19,928	7,689
Undistributed earnings reallocated to dilutive potential common shares	78	—
Net income attributable to common stockholders, diluted	<u>\$ 20,006</u>	<u>\$ 7,689</u>
Denominator:		
Weighted-average shares used to compute net income per share attributable to common stockholders, basic	32,822	33,657
Dilutive effect of stock options	8,517	9,100
Dilutive effect of restricted stock units	798	441
Weighted-average shares used to compute net income per share attributable to common stockholders, diluted	<u>42,137</u>	<u>43,198</u>
Net income per share attributable to common stockholders:		
Basic	<u>\$ 0.61</u>	<u>\$ 0.23</u>
Diluted	<u>\$ 0.47</u>	<u>\$ 0.18</u>

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The following potential common shares, presented based on amounts outstanding at each period end, were excluded from the computation of diluted net income per share attributable to common stockholders for the periods presented because including them would have been anti-dilutive:

	September 30,	
	2016	2017
Convertible preferred stock (on an as-converted basis)	40,382	40,382
Options to purchase common stock	2,472	1,723

Unaudited Pro Forma Net Income per Share

Unaudited pro forma basic and diluted net income per share attributable to common stockholders for the nine months ended September 30, 2017 have been prepared to give effect, upon the closing of a qualified initial public offering, to (i) the automatic conversion of all outstanding shares of convertible preferred stock into shares of common stock as if the proposed initial public offering had occurred on January 1, 2016 and (ii) the number of shares offered in the initial public offering whose proceeds are deemed necessary, based on an assumed initial public offering price of \$16.00 per share, which is the midpoint of the price range set forth on the cover page of this prospectus, to pay the \$202,031 amount by which the special cash dividends of \$171,425, \$87,133 and \$42,961 declared by the Company's board of directors on December 21, 2016, May 10, 2017 and November 30, 2017, respectively, exceeded the Company's earnings for the twelve-month period ended September 30, 2017; however, such number of shares included in the denominator of the calculation of unaudited pro forma net income per share is limited to the total number of shares to be issued in the offering.

The unaudited pro forma net income per share data have been presented in accordance with Securities and Exchange Commission Staff Accounting Bulletin Topic 1B.3 ("SAB Topic 1B.3"). In accordance with SAB Topic 1B.3, dividends declared at or in the twelve-month period preceding an initial public offering are deemed to be in contemplation of the offering with the intention of repayment out of the offering proceeds to the extent that the amount of dividends exceeded the amount of earnings during the twelve-month period ended on the most recent balance sheet date. For the twelve-month period ended September 30, 2017, the Company's net income was \$99,488 (unaudited).

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Unaudited pro forma basic and diluted net income per share attributable to common stockholders was calculated as follows:

	Nine Months Ended September 30, 2017
Numerator:	
Net income	\$ 59,637
Denominator:	
Weighted-average shares used to compute net income per share attributable to common stockholders, basic	33,657
Pro forma adjustment to reflect assumed conversion of convertible preferred stock upon closing of initial public offering	40,382
Pro forma adjustments to reflect the number of shares whose proceeds are deemed necessary to pay dividends in excess of earnings	8,400
Pro forma weighted-average shares used in computing pro forma net income per share attributable to common stockholders, basic	82,439
Dilutive effect of stock options	9,100
Dilutive effect of restricted stock units	440
Pro forma weighted-average shares used in computing pro forma net income per share attributable to common stockholders, diluted	91,979
Pro forma net income per share attributable to common stockholders:	
Basic	\$ 0.72
Diluted	\$ 0.65

13. 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.

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The following table summarizes the Company's revenue based on the customer's location, as determined by the customer's shipping address:

	Nine Months Ended September 30,	
	2016	2017
North America:		
United States	\$ 77,790	\$ 95,630
Canada	50,508	29,766
Total North America	128,298	125,396
Asia-Pacific	28,184	31,888
Europe, Middle East and Africa	27,377	44,906
Latin America	33,043	31,423
Total revenue ⁽¹⁾	<u>\$ 216,902</u>	<u>\$ 233,613</u>

(1) Other than the United States and Canada, no individual countries represented 10% or more of the Company's total revenue for each of the periods presented.

The Company's property and equipment, net by location was as follows:

	December 31, 2016	September 30, 2017
United States	\$ 21,984	\$ 23,660
China	2,305	2,355
Other	1,393	1,913
Total property and equipment, net	<u>\$ 25,682</u>	<u>\$ 27,928</u>

14. 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 Series B Preferred Stock. Liberty Global Ventures Holding B.V. controls a wholly owned subsidiary, Liberty Global Services B.V., that is a customer of the Company. During the nine months ended September 30, 2016 and 2017, the Company recognized revenue of \$16,332 and \$24,981, respectively, from transactions with Liberty Global Affiliates and amounts received in cash from Liberty Global Affiliates totaled \$24,981 and \$32,600. As of December 31, 2016 and September 30, 2017, amounts due from Liberty Global Affiliates totaled \$15,619 and \$7,390, 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 nine months ended September 30, 2016, the Company recognized sales and marketing expenses of \$242 and paid Mr. Styslinger

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\$379, for his services under this consulting agreement. As of December 31, 2016, no amounts were due to Mr. Styslinger for his consulting services.

During the nine months ended September 30, 2017, the Company recognized general and administrative expenses of \$150 and paid Mr. Styslinger \$100 for his services as a non-employee director. As of September 30, 2017, the amount due to Mr. Styslinger for his services as a non-employee director was \$50.

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. The Company recognized no sales and marketing expenses related to these stock options during the nine months ended September 30, 2016 and 2017.

In connection with special dividends declared by the Company's board of directors in June 2016, December 2016, and May 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 June 2016, the Company paid Mr. Styslinger \$150 as equitable adjustments in the nine months ended September 30, 2016. In connection with the special dividend declared in December 2016 and May 2017, the Company paid Mr. Styslinger \$920 as an equitable adjustment in the nine months ended September 30, 2017.

Employment of Rongke Xie

Rongke Xie, who serves as Deputy General Manager of Guangzhou Casa Communication Technology LTD, one of the Company's subsidiaries, is the sister of Lucy Xie, the Company's Senior Vice President of Operations and a member of its board of directors. During the nine months ended September 30, 2016 and 2017, the Company paid Rongke Xie \$130 and \$139, respectively, for her services as an employee of the Company.

15. 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, with a right to terminate in 2021, respectively. Rent expense was \$363 and \$697 for the nine months ended September 30, 2016 and 2017, respectively. Rent expense is recorded on a straight-line basis, and, as a result, as of December 31, 2016 and September 30, 2017, the Company had a deferred rent liability of \$130 and \$272, respectively, which is included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheets.

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Future minimum lease payments under non-cancelable operating leases as of September 30, 2017 were as follows:

<u>Year Ending December 31,</u>	
2017	\$ 208
2018	843
2019	594
2020	587
2021	395
Thereafter	5
	<u>\$2,632</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, 2016 and September 30, 2017, 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.

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 September 30, 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.

16. Subsequent Events

For its interim condensed consolidated financial statements as of September 30, 2017 and for the nine months then ended, the Company evaluated subsequent events through November 3, 2017, the date on which those financial statements were issued, and, with respect to the stock split described below, through December 4, 2017.

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. Accordingly, all share and per share amounts for all periods presented in the accompanying condensed 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.

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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 Stock Incentive Plan (the "2017 Plan"), which will become effective immediately prior to the effectiveness of the registration statement for the Company's initial public offering. 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 Stock Incentive Plan (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, 2018 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.

November 2017 Special Dividend

On November 30, 2017, the board of directors declared a special dividend, contingent upon, and to be payable following, the closing of the Company's initial public offering to the holders of record of the Company's common stock and preferred stock as of November 30, 2017. The cash dividend declared to stockholders was \$0.5799 per share of common stock, \$5.7990 per share of Series B Preferred Stock and \$5.7990 per share of Series C Preferred Stock. 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 \$0.5799 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.

The cash dividends declared to the holders of common stock, Series B Preferred Stock and Series C Preferred Stock totaled \$19,543, \$1,038 and \$22,380, respectively, and the equitable adjustment to the holders of stock options, SARs and RSUs totaled \$7,037 before estimated forfeitures.



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, the Financial Industry Regulatory Authority, Inc., or FINRA, filing fee and the Nasdaq Global Select Market listing fee.

	Amount
SEC registration fee	\$ 20,445
FINRA filing fee	25,133
Nasdaq Global Select Market listing fee	200,000
Legal fees and expenses	1,740,000
Accountants' fees and expenses	1,230,000
Printing and engraving expenses	300,000
Transfer Agent's and registrar fees and expenses	5,000
Miscellaneous expenses	139,422
Total expenses	<u>\$ 3,660,000</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 that will be effective upon the closing of this offering 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 that will be effective upon the closing of this offering provides that we will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending

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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 "Indemnitee"), 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 Indemnitee 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 that will be effective upon the closing of this offering provides that we will indemnify any Indemnitee 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 Indemnitee 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 Indemnitee 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 Indemnitee 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 Indemnitee under certain circumstances.

We have entered into indemnification agreements with certain of our executive officers and directors and intend to enter into similar indemnification agreements with each of our other directors and executive officers prior to the closing of this offering. 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 any 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 December 1, 2013, 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 9,174,210 shares of our common stock, with exercise prices ranging from \$2.29 to \$12.24 per share. 3,110,900 shares of common stock have been issued pursuant to the exercise of stock options for aggregate consideration of \$5,345,194.

- (2) Under our 2011 Stock Incentive Plan, we granted an aggregate of 2,538,945 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 179,170 shares of common stock upon the exercise of stock options at a weighted-average exercise price of \$0.13 per share, for aggregate consideration of \$23,917.
- (5) We issued 2,642,900 shares of our common stock to Liberty Global Ventures Holding B.V. on March 31, 2014, upon Liberty Global Ventures Holding B.V.'s exercise of outstanding warrants, for aggregate consideration of \$2,369,000.

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. The common stock issued upon the exercise of the warrants described in paragraph (5) of this Item 15 was issued pursuant to the exemption provided by Regulation D 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.

The undersigned registrant hereby undertakes to provide to the underwriter, at the closing specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriter to permit prompt delivery to each purchaser.

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	<u>Description</u>
1.1	Form of Underwriting Agreement
3.1*	Certificate of Incorporation of the Registrant
3.2*	Bylaws of the Registrant
3.3	Form of Restated Certificate of Incorporation of the Registrant (to be effective immediately prior to the closing of this offering)
3.4*	Form of Amended and Restated Bylaws of the Registrant (to be effective immediately prior to the closing of this offering)
3.5	Certificate of Amendment of Amended and Restated Certificate of Incorporation of the Registrant, effective December 1, 2017
4.1	Specimen stock certificate evidencing shares of common stock
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
10.2*	2003 Stock Incentive Plan, as amended
10.3*	Form of Incentive Stock Option Agreement under 2003 Stock Incentive Plan
10.4*	Form of Non-statutory Stock Option Agreement under 2003 Stock Incentive Plan
10.5*	Form of Restricted Stock Agreement under 2003 Stock Incentive Plan
10.6*	2011 Stock Incentive Plan, as amended
10.7*	Form of Incentive Stock Option Agreement under 2011 Stock Incentive Plan
10.8*	Form of Non-statutory Stock Option Agreement under 2011 Stock Incentive Plan
10.9*	Form of Restricted Stock Agreement under 2011 Stock Incentive Plan
10.10*	Form of Restricted Stock Unit Agreement under 2011 Stock Incentive Plan
10.11*	Form of Stock Appreciation Rights Agreement under 2011 Stock Incentive Plan
10.12*	2017 Stock Incentive Plan
10.13*	Form of Stock Option Agreement under 2017 Stock Incentive Plan
10.14*	Form of Restricted Stock Unit Agreement under 2017 Stock Incentive Plan
10.15*	Offer Letter between the Registrant and Gary Hall, dated May 25, 2011
10.16*	Offer Letter between the Registrant and Abraham Pucheril, dated August 18, 2012
10.17*	Consulting Agreement between the Registrant and Bill Styslinger, dated March 5, 2012, as amended
10.18*	Mortgage, Security Agreement and Financing Statement, dated July 1, 2015, between Casa Properties LLC and Middlesex Savings Bank

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<u>Exhibit Number</u>	<u>Description</u>
10.19*	<u>Registration Rights Agreement, dated April 26, 2010, between the Registrant and the investors party thereto</u>
10.20*	<u>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</u>
10.21*	<u>Letters, dated as of February 1, 2017 and April 14, 2017, from the Registrant to the lenders party to the Credit Agreement</u>
10.22*	<u>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</u>
10.23†*	<u>Master Purchase Agreement, dated October 31, 2013, between Time Warner Cable Enterprises LLC and Casa Systems, Inc., as amended</u>
10.24*	<u>Employment Agreement, dated November 17, 2017, by and between the Registrant and Jerry Guo</u>
10.25*	<u>Employment Agreement, dated November 17, 2017, by and between the Registrant and Lucy Xie</u>
10.26*	<u>Employment Agreement, dated November 17, 2017, by and between the Registrant and Weidong Chen</u>
21.1*	<u>List of Subsidiaries</u>
23.1	<u>Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm</u>
23.2	<u>Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1)</u>
24.1*	<u>Powers of Attorney (included on signature page)</u>

* Previously filed.

† Confidential treatment requested 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 Amendment No. 1 to registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the Town of Andover, Commonwealth of Massachusetts, on this 4th day of December, 2017.

CASA SYSTEMS, INC.

By: /s/ Jerry Guo
Jerry Guo
President, Chief Executive Officer and Chairman

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, this Amendment No. 1 to 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)	December 4, 2017
<u>/s/ Gary Hall</u> Gary Hall	Chief Financial Officer (Principal Financial and Accounting Officer)	December 4, 2017
<u>*</u> Lucy Xie	Senior Vice President of Operations and Director	December 4, 2017
<u>*</u> Weidong Chen	Chief Technology Officer and Director	December 4, 2017
<u>*</u> Bruce R. Evans	Director	December 4, 2017
<u>*</u> Bill Styslinger	Director	December 4, 2017
<u>*</u> Joe Tibbetts	Director	December 4, 2017

*By: /s/ Jerry Guo
Jerry Guo
Attorney-in-Fact

[•] Shares

CASA SYSTEMS, INC.

COMMON STOCK, PAR VALUE \$0.001 PER SHARE

UNDERWRITING AGREEMENT

[•], 2017

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:

Casa Systems, Inc., a Delaware corporation (the “**Company**”), proposes to issue and sell to the several Underwriters named in Schedule I hereto (the “**Underwriters**”), [•] shares of the common stock, par value \$0.001 per share of the Company (the “**Firm Shares**”).

The Company also proposes to issue and sell to the several Underwriters not more than an additional [•] shares of its common stock, par value \$0.001 per share (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 2 hereof. 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 to be outstanding after giving effect to the sales contemplated hereby 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 II 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.* 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 4), 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 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 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.

(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 II 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 outstanding prior to the issuance of the Shares have been duly authorized and are validly issued, fully paid and non-assessable.

(i) The Shares have been duly authorized and, when issued, delivered and paid for in accordance with the terms of this Agreement, will be validly issued, fully paid and non-assessable, and the issuance of such Shares will not be subject to any preemptive or similar rights.

(j) 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.

(k) 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.

(l) 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.

(m) 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.

(n) 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.

(o) 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.

(p) 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.

(q) 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.

(r) (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.

(s) 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.

(t) (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, Sudan 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.

(u) 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, 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.

(v) 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.

(w) 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.

(x) 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.

(y) 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.

(z) 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.

(aa) 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.

(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.

(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 J.P. Morgan Securities LLC (“**J.P. Morgan**”) and (ii) has not authorized anyone other than Morgan Stanley and J.P. Morgan to engage in Testing-the-Waters Communications. The Company reconfirms that Morgan Stanley and J.P. Morgan have been authorized to act on its behalf in undertaking Testing-the-Waters Communications. The Company has not distributed any Written Testing-the-Waters Communications other than those listed on Schedule III hereto. “**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 generally accepted accounting principles in the United States 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. Agreements to Sell and Purchase. The Company 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 the Company at \$[•] a share (the “**Purchase Price**”) the respective numbers of Firm Shares set forth in Schedule I hereto opposite the name of each such Underwriter.

On the basis of the representations and warranties contained in this Agreement, and subject to its terms and conditions, the Company agrees to sell to the Underwriters the Additional Shares, and the Underwriters shall have the right to purchase, severally and not jointly, up to [•] 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 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 for the Firm Shares nor later than ten business days after the date of such notice. Additional Shares may be purchased as provided in Section 4 hereof solely for the purpose of covering over-allotments made in connection with the offering of the Firm Shares. 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 I hereto opposite the name of such Underwriter bears to the total number of Firm Shares.

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 180 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 Securities Exchange Act of 1934, as amended (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.

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 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 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.

If Morgan Stanley in its sole discretion, agree to release or waive the restrictions set forth in a lock-up letter described in Section 5(h) hereof for an officer or director of the Company and provides the Company with notice of the impending release or waiver at least three business days before the effective date of the release or waiver, the Company agrees to announce the impending release or waiver by a press release substantially in the form of Exhibit B hereto through a major news service at least two business days before the effective date of the release or waiver.

3. *Terms of Public Offering.* The Company is 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 Company is 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, and that any Underwriter may allow, and such dealers may reallocate, a concession, not in excess of \$[•] a share, to any Underwriter or to certain other dealers.

4. *Payment and Delivery.* Payment for the Firm Shares shall be made to the Company 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 [•], 2017, or at such other time on the same or such other date, not later than [•], 2017, 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 shall be made to the Company 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 2 or at such other time on the same or on such other date, in any event not later than [•], 2017, 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.

5. *Conditions to the Underwriters' Obligations.* The obligation of the Company 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 5(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) 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

(iv) 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 5(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.

With respect to Section 5(c) and 5(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.

The opinions of WilmerHale, Arthur Cox and Van Doorne described in Sections 5(c), 5(d) and 5(f) above shall be rendered to the Underwriters at the request of the Company, and shall so state therein.

(g) 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 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.

(h) The "lock-up" agreements, each substantially in the form of Exhibit A hereto, between you and certain 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.

(i) 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.

(j) 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 5(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 5(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 5(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 5(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 5(f) hereof;

(vi) 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 5(g) 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; and

(vii) 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.

6. *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 6(e) or 6(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 2.

(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 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 apply the net proceeds received by it from the sale of the Shares substantially as described in the Registration Statement, the Time of Sale Prospectus and the Prospectus under the heading "Use of proceeds".

(l) 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.

7. *Expenses.* 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 its obligations under this Agreement, including: (i) the fees, disbursements and expenses of the Company's counsel and 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 6(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) all fees and expenses in connection with the preparation and filing of the registration statement on Form 8-A relating to the Common Stock and all costs and expenses incident to listing the Shares on the NASDAQ Global Market and other national securities exchanges and foreign stock exchanges, (vi) the cost of printing certificates representing the Shares, (vii) the costs and charges of any transfer agent, registrar or depository, (viii) 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, travel and lodging expenses of the representatives and officers of the Company and any such consultants, and fifty percent (50%) of the cost of any aircraft chartered in connection with the road show (the remaining fifty percent (50%) of the costs of such aircraft to be paid by the Underwriters), (ix) the document production charges and expenses associated with printing this Agreement and (x) all other costs and expenses incident to the performance of the obligations of the Company hereunder for which provision is not otherwise made in this Section. It is understood, however, that except as provided in this Section, Section 9 entitled “Indemnity and Contribution” and the last paragraph of Section 12 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.

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.

8. 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 information relating to any Underwriter furnished to the Company in writing by such Underwriter through you expressly for use therein.

(b) Each Underwriter agrees, severally and not jointly, to indemnify and hold harmless the Company, the directors of the Company, the officers of the Company who sign the Registration Statement and each person, if any, who controls the Company 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.

(c) 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 9(a) or 9(b), 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 and (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. 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.

(d) To the extent the indemnification provided for in Section 9(a) or 9(b) 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 9(d)(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 9(d)(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 Company on the one hand and the Underwriters on the other hand 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 Company 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 Company on the one hand and the Underwriters on the other hand 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 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 9 are several in proportion to the respective number of Shares they have purchased hereunder, and not joint.

(e) The Company and the Underwriters agree that it would not be just or equitable if contribution pursuant to this Section 9 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 9(d). The amount paid or payable by an indemnified party as a result of the losses, claims, damages and liabilities referred to in Section 9(d) 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 9, 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 9 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.

(f) The indemnity and contribution provisions contained in this Section 9 and the representations, warranties and other statements of the Company 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, or the Company, its officers or directors or any person controlling the Company and (iii) acceptance of and payment for any of the Shares.

9. *Termination.* The Underwriters may terminate this Agreement by notice given by you to the Company, 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.

10. *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 I 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 11 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 and the Company 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 or the Company. In any such case either you or the Company 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 to comply with the terms or to fulfill any of the conditions of this Agreement, or if for any reason the Company shall be unable to perform its obligations under this Agreement, the Company will reimburse the Underwriters or such Underwriters as have so terminated this Agreement with respect to themselves, severally, for all 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 under Section 2 hereof, the Company fails or refuses to comply with the terms or to fulfill any of the conditions of the Agreement in connection with such Option Closing Date, the Company will reimburse the Underwriters severally for all 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.

11. *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 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 Company acknowledges 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 Company or any other person, (ii) the Underwriters owe the Company only those duties and obligations set forth in this Agreement and prior written agreements between the Company 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. The Company waives to the full extent permitted by applicable law any claims it may have against the Underwriters arising from an alleged breach of fiduciary duty in connection with the offering of the Shares.

12. *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.

13. *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.

14. *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.

15. *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.

16. *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:

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 I hereto

By: Morgan Stanley & Co. LLC

By: _____
Name:
Title:

By: Barclays Capital Inc.

By: _____
Name:
Title:

<u>Underwriter</u>	<u>Number of Firm Shares To Be Purchased</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:	

Time of Sale Prospectus

- 1. Preliminary Prospectus issued [date]
- 2. []
- 3. []

Written Testing-the-Waters

FORM OF LOCK-UP LETTER

_____, 2017

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**”), providing for the public offering (the “**Public Offering**”) by the several Underwriters named in Schedule I of that 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 180 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 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 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 conversion of the outstanding preferred stock of the Company into shares of Common Stock of the Company;

(k) 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;

(l) 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), (j) or (k) 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 (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), (e) 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), and (y) with respect to clauses (g) and (k), 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.

If the undersigned is an officer or director of the Company, the undersigned further agrees that the foregoing provisions shall be equally applicable to any issuer-directed Shares the undersigned may purchase in the offering.

If the undersigned is an officer or director of the Company, (i) the Representative agrees that, at least three business days before the effective date of any release or waiver of the foregoing restrictions in connection with a transfer of shares of Common Stock, the Representative will notify the Company of the impending release or waiver, and (ii) the Company has agreed in the Underwriting Agreement to announce the impending release or waiver by press release through a major news service at least two business days before the effective date of the release or waiver. Any release or waiver granted by the Representative hereunder to any such officer or director shall only be effective two business days after the publication date of such press release. The provisions of this paragraph will not apply if (a) the release or waiver is effected solely to permit a transfer not for consideration and (b) the transferee has agreed in writing to be bound by the same terms described in this letter to the extent and for the duration that such terms remain in effect at the time of the transfer.

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 between the Company 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) March 31, 2018, in the event that the Underwriting Agreement has not been executed by such date; provided, however, that the Company may, by written notice to the undersigned prior to such date, extend such date for a period of up to three additional months.

Very truly yours,

(Signature)

(Printed Name)

(Address)

FORM OF WAIVER OF LOCK-UP

_____, 20__

[Name and Address of
Officer or Director
Requesting Waiver]

Dear Mr./Ms. [Name]:

This letter is being delivered to you in connection with the offering by Casa Systems, Inc. (the “**Company**”) of _____ shares of common stock, \$0.001 par value (the “**Common Stock**”), of the Company and the lock-up letter dated _____, 20__ (the “**Lock-up Letter**”), executed by you in connection with such offering, and your request for a [waiver] [release] dated _____, 20__, with respect to _____ shares of Common Stock (the “**Shares**”).

Morgan Stanley & Co. LLC hereby agrees to [waive] [release] the transfer restrictions set forth in the Lock-up Letter, but only with respect to the Shares, effective _____, 20__; provided, however, that such [waiver] [release] is conditioned on the Company announcing the impending [waiver] [release] by press release through a major news service at least two business days before effectiveness of such [waiver] [release]. This letter will serve as notice to the Company of the impending [waiver] [release].

Except as expressly [waived] [released] hereby, the Lock-up Letter shall remain in full force and effect.

(The remainder of this page has intentionally been left blank)

Very truly yours,

Morgan Stanley & Co. LLC

Acting severally on behalf of themselves and the several Underwriters
named in Schedule I hereto

By: _____
Name:
Title:

cc: Company

FORM OF PRESS RELEASE

Casa Systems, Inc.

[Date]

Casa Systems, Inc. (the “**Company**”) announced today that Morgan Stanley & Co., a lead book-running manager in the Company’s recent public sale of _____ shares of common stock is [waiving][releasing] a lock-up restriction with respect to ____ shares of the Company’s common stock held by [certain officers or directors] [an officer or director] of the Company. The [waiver][release] will take effect on ____, 20__, and the shares may be sold on or after such date.

This press release is not an offer for sale of the securities in the United States or in any other jurisdiction where such offer is prohibited, and such securities may not be offered or sold in the United States absent registration or an exemption from registration under the United States Securities Act of 1933, as amended.

B-3

RESTATED CERTIFICATE OF INCORPORATION

OF

CASA SYSTEMS, INC.

FIRST: The name of the Corporation is Casa Systems, Inc.

SECOND: The address of the Corporation's registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle, 19801. The name of its registered agent at that address is The Corporation Trust Company.

THIRD: The nature of the business or purposes to be conducted or promoted by the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

FOURTH: The total number of shares of all classes of stock that the Corporation shall have authority to issue is 505,000,000 shares, consisting of (i) 500,000,000 shares of Common Stock, \$0.001 par value per share ("Common Stock"), and (ii) 5,000,000 shares of Preferred Stock, \$0.001 par value per share ("Preferred Stock").

The following is a statement of the designations and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the Corporation.

A COMMON STOCK.

1. General. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights of the holders of the Preferred Stock of any series as may be designated by the Board of Directors upon any issuance of the Preferred Stock of any series.

2. Voting. The holders of the Common Stock shall have voting rights at all meetings of stockholders, each such holder being entitled to one vote for each share thereof held by such holder; provided, however, that, except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Certificate of Incorporation (which, as used herein, shall mean the certificate of incorporation of the Corporation, as amended from time to time, including the terms of any certificate of designations of any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together as a class with the holders of one or more other such series, to vote thereon pursuant to this Certificate of Incorporation or the General Corporation Law of the State of Delaware. There shall be no cumulative voting.

The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law of the State of Delaware.

3. Dividends. Dividends may be declared and paid on the Common Stock from funds lawfully available therefor if, as and when determined by the Board of Directors and subject to any preferential dividend or other rights of any then outstanding Preferred Stock.

4. Liquidation. Upon the dissolution, liquidation or winding up of the Corporation, whether voluntary or involuntary, holders of Common Stock will be entitled to receive all assets of the Corporation available for distribution to its stockholders, subject to any preferential or other rights of any then outstanding Preferred Stock.

B PREFERRED STOCK

Preferred Stock may be issued from time to time in one or more series, each of such series to have such terms as stated or expressed herein and in the resolution or resolutions providing for the issue of such series adopted by the Board of Directors of the Corporation as hereinafter provided. Any shares of Preferred Stock that may be redeemed, purchased or acquired by the Corporation may be reissued except as otherwise provided by law.

Authority is hereby expressly granted to the Board of Directors from time to time to issue the Preferred Stock in one or more series, and in connection with the creation of any such series, by adopting a resolution or resolutions providing for the issuance of the shares thereof and by filing a certificate of designations relating thereto in accordance with the General Corporation Law of the State of Delaware, to determine and fix the number of shares of such series and such voting powers, full or limited, or no voting powers, and such designations, preferences and relative, participating, optional or other special rights, and qualifications, limitations or restrictions thereof, including dividend rights, conversion rights, redemption privileges and liquidation preferences, as shall be stated and expressed in such resolutions, all to the full extent now or hereafter permitted by the General Corporation Law of the State of Delaware. Without limiting the generality of the foregoing, the resolutions providing for issuance of any series of Preferred Stock may provide that such series shall be superior or rank equally or be junior to any other series of Preferred Stock to the extent permitted by law. The powers, preferences and relative, participating, optional and other special rights of each series of Preferred Stock, and the qualifications, limitations or restrictions thereof, if any, may differ from those of any and all other series at any time outstanding.

The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares then outstanding) by the affirmative vote of the holders of a majority of the voting power of the capital stock of the Corporation entitled to vote thereon, voting as a single class, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law of the State of Delaware.

FIFTH: Except as otherwise provided herein, the Corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute and this Certificate of Incorporation, and all rights conferred upon stockholders herein are granted subject to this reservation.

SIXTH: In furtherance and not in limitation of the powers conferred upon it by the General Corporation Law of the State of Delaware, and subject to the terms of any series of Preferred Stock, the Board of Directors shall have the power to adopt, amend, alter or repeal the Bylaws of the Corporation by the affirmative vote of a majority of the directors present at any regular or special meeting of the Board of Directors at which a quorum is present. The stockholders may not adopt, amend, alter or repeal the Bylaws of the Corporation, or adopt any provision inconsistent therewith, unless such action is approved, in addition to any other vote required by this Certificate of Incorporation, by the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors. Notwithstanding any other provisions of law, this Certificate of Incorporation or the Bylaws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article SIXTH.

SEVENTH: 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, no director of the Corporation shall be personally liable to the Corporation or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability. No amendment to or repeal of this provision shall apply to or have any effect on the liability or alleged liability of any director of the Corporation for or with respect to any acts or omissions of such director occurring prior to such amendment or repeal. If the General Corporation Law of the State of Delaware is amended to permit further elimination or limitation of the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law of the State of Delaware as so amended.

EIGHTH: The Corporation shall provide indemnification and advancement of expenses as follows:

1. Actions, Suits and Proceedings Other than by or in the Right of the Corporation. The Corporation shall 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, whether civil, criminal, administrative or investigative (other than an action by or in the right of the Corporation) by reason of the fact that he or she is or was, or has agreed to become, a director or officer of the Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan) (all such persons being referred to hereafter 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), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974), and amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnatee in connection with such action, suit or proceeding and any appeal therefrom, if Indemnatee acted in good faith and in a manner which Indemnatee reasonably believed to be in, or not opposed to, the best interests of the Corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or

her conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that Indemnitee did not act in good faith and in a manner which Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his or her conduct was unlawful.

2. Actions or Suits by or in the Right of the Corporation. The Corporation shall indemnify any Indemnitee who was or is a party to or threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Corporation to procure a judgment in its favor by reason of the fact that Indemnitee is or was, or has agreed to become, a director or officer of the Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan), 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 by or on behalf of Indemnitee in connection with such action, suit or proceeding and any appeal therefrom, if Indemnitee acted in good faith and in a manner which Indemnitee reasonably believed to be in, or not opposed to, the best interests of the Corporation, except that no indemnification shall be made under this Section 2 in respect of any claim, issue or matter as to which Indemnitee shall have been adjudged to be liable to the Corporation, unless, and only to the extent, that the Court of Chancery of Delaware or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of such liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnity for such expenses (including attorneys' fees) which the Court of Chancery of Delaware or such other court shall deem proper.

3. Indemnification for Expenses of Successful Party. Notwithstanding any other provisions of this Article EIGHTH, to the extent that an Indemnitee has been successful, on the merits or otherwise, in defense of any action, suit or proceeding referred to in Sections 1 and 2 of this Article EIGHTH, or in defense of any claim, issue or matter therein, or on appeal from any such action, suit or proceeding, Indemnitee shall be indemnified against all expenses (including attorneys' fees) actually and reasonably incurred by or on behalf of Indemnitee in connection therewith.

4. Notification and Defense of Claim. As a condition precedent to an Indemnitee's right to be indemnified, such Indemnitee must notify the Corporation in writing as soon as practicable of any action, suit, proceeding or investigation involving such Indemnitee for which indemnity will or could be sought. With respect to any action, suit, proceeding or investigation of which the Corporation is so notified, the Corporation will be entitled to participate therein at its own expense and/or to assume the defense thereof at its own expense, with legal counsel reasonably acceptable to Indemnitee. After notice from the Corporation to Indemnitee of its election so to assume such defense, the Corporation shall not be liable to Indemnitee for any legal or other expenses subsequently incurred by Indemnitee in connection with such action, suit, proceeding or investigation, other than as provided below in this Section 4. Indemnitee shall have the right to employ his or her own counsel in connection with such action, suit, proceeding or investigation, but the fees and expenses of such counsel incurred after notice from the

Corporation of its assumption of the defense thereof shall be at the expense of Indemnatee unless (i) the employment of counsel by Indemnatee has been authorized by the Corporation, (ii) counsel to Indemnatee shall have reasonably concluded that there may be a conflict of interest or position on any significant issue between the Corporation and Indemnatee in the conduct of the defense of such action, suit, proceeding or investigation or (iii) the Corporation shall not in fact have employed counsel to assume the defense of such action, suit, proceeding or investigation, in each of which cases the fees and expenses of counsel for Indemnatee shall be at the expense of the Corporation, except as otherwise expressly provided by this Article EIGHTH. The Corporation shall not be entitled, without the consent of Indemnatee, to assume the defense of any claim brought by or in the right of the Corporation or as to which counsel for Indemnatee shall have reasonably made the conclusion provided for in clause (ii) above. The Corporation shall not be required to indemnify Indemnatee under this Article EIGHTH for any amounts paid in settlement of any action, suit, proceeding or investigation effected without its written consent. The Corporation shall not settle any action, suit, proceeding or investigation in any manner which would impose any penalty or limitation on Indemnatee without Indemnatee's written consent. Neither the Corporation nor Indemnatee will unreasonably withhold or delay its consent to any proposed settlement.

5. Advancement of Expenses. Subject to the provisions of Section 6 of this Article EIGHTH, in the event of any threatened or pending action, suit, proceeding or investigation of which the Corporation receives notice under this Article EIGHTH, any expenses (including attorneys' fees) incurred by or on behalf of Indemnatee in defending an action, suit, proceeding or investigation or any appeal therefrom shall be paid by the Corporation in advance of the final disposition of such matter; provided, however, that the payment of such expenses incurred by or on behalf of Indemnatee in advance of the final disposition of such matter shall be made only upon receipt of an undertaking by or on behalf of Indemnatee to repay all amounts so advanced in the event that it shall ultimately be determined that Indemnatee is not entitled to be indemnified by the Corporation as authorized in this Article EIGHTH; and provided further that no such advancement of expenses shall be made under this Article EIGHTH if it is determined (in the manner described in Section 6) that (i) Indemnatee did not act in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the best interests of the Corporation, or (ii) with respect to any criminal action or proceeding, Indemnatee had reasonable cause to believe his or her conduct was unlawful. Such undertaking shall be accepted without reference to the financial ability of Indemnatee to make such repayment.

6. Procedure for Indemnification and Advancement of Expenses. In order to obtain indemnification or advancement of expenses pursuant to Section 1, 2, 3 or 5 of this Article EIGHTH, an Indemnatee shall submit to the Corporation a written request. Any such advancement of expenses shall be made promptly, and in any event within 60 days after receipt by the Corporation of the written request of Indemnatee, unless (i) the Corporation has assumed the defense pursuant to Section 4 of this Article EIGHTH (and none of the circumstances described in Section 4 of this Article EIGHTH that would nonetheless entitle the Indemnatee to indemnification for the fees and expenses of separate counsel have occurred) or (ii) the Corporation determines within such 60-day period that Indemnatee did not meet the applicable standard of conduct set forth in Section 1, 2 or 5 of this Article EIGHTH, as the case may be. Any such indemnification, unless ordered by a court, shall be made with respect to requests under Section 1 or 2 only as authorized in the specific case upon a determination by the

Corporation that the indemnification of Indemnatee is proper because Indemnatee has met the applicable standard of conduct set forth in Section 1 or 2, as the case may be. Such determination shall be made in each instance (a) by a majority vote of the directors of the Corporation consisting of persons who are not at that time parties to the action, suit or proceeding in question (“disinterested directors”), whether or not a quorum, (b) by a committee of disinterested directors designated by majority vote of disinterested directors, whether or not a quorum, (c) if there are no disinterested directors, or if the disinterested directors so direct, by independent legal counsel (who may, to the extent permitted by law, be regular legal counsel to the Corporation) in a written opinion, or (d) by the stockholders of the Corporation.

7. Remedies. Subject to Article TWELFTH, the right to indemnification or advancement of expenses as granted by this Article EIGHTH shall be enforceable by Indemnatee in any court of competent jurisdiction. Neither the failure of the Corporation to have made a determination prior to the commencement of such action that indemnification is proper in the circumstances because Indemnatee has met the applicable standard of conduct, nor an actual determination by the Corporation pursuant to Section 6 of this Article EIGHTH that Indemnatee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that Indemnatee has not met the applicable standard of conduct. Indemnatee’s expenses (including attorneys’ fees) reasonably incurred in connection with successfully establishing Indemnatee’s right to indemnification or advancement of expenses, in whole or in part, in any such proceeding shall also be indemnified by the Corporation to the fullest extent permitted by applicable law. Notwithstanding the foregoing, in any suit brought by Indemnatee to enforce a right to indemnification or advancement of expenses hereunder it shall be a defense that the Indemnatee has not met any applicable standard for indemnification set forth in the General Corporation Law of the State of Delaware.

8. Limitations. Notwithstanding anything to the contrary in this Article EIGHTH, except as set forth in Section 7 of this Article EIGHTH, the Corporation shall not indemnify, or advance expenses to, an Indemnatee pursuant to this Article EIGHTH in connection with a proceeding (or part thereof) initiated by such Indemnatee unless the initiation thereof was approved by the Board of Directors. Notwithstanding anything to the contrary in this Article EIGHTH, the Corporation shall not indemnify or advance expenses to an Indemnatee to the extent such Indemnatee is reimbursed from the proceeds of insurance, and in the event the Corporation makes any indemnification or advancement payments to an Indemnatee and such Indemnatee is subsequently reimbursed from the proceeds of insurance, such Indemnatee shall promptly refund indemnification or advancement payments to the Corporation to the extent of such insurance reimbursement.

9. Subsequent Amendment. No amendment, termination or repeal of this Article EIGHTH or of the relevant provisions of the General Corporation Law of the State of Delaware or any other applicable laws shall adversely affect or diminish in any way the rights of any Indemnatee to indemnification or advancement of expenses under the provisions hereof with respect to any action, suit, proceeding or investigation arising out of or relating to any actions, transactions or facts occurring prior to the final adoption of such amendment, termination or repeal.

10. Other Rights. The indemnification and advancement of expenses provided by this Article EIGHTH shall not be deemed exclusive of any other rights to which an Indemnitee seeking indemnification or advancement of expenses may be entitled under any law (common or statutory), agreement or vote of stockholders or disinterested directors or otherwise, both as to action in Indemnitee's official capacity and as to action in any other capacity while holding office for the Corporation, and shall continue as to an Indemnitee who has ceased to be a director or officer, and shall inure to the benefit of the estate, heirs, executors and administrators of Indemnitee. Nothing contained in this Article EIGHTH shall be deemed to prohibit, and the Corporation is specifically authorized to enter into, agreements with officers and directors providing indemnification and advancement rights and procedures different from those set forth in this Article EIGHTH. In addition, the Corporation may, to the extent authorized from time to time by its Board of Directors, grant indemnification and advancement rights to other employees or agents of the Corporation or other persons serving the Corporation and such rights may be equivalent to, or greater or less than, those set forth in this Article EIGHTH.

11. Partial Indemnification. If an Indemnitee is entitled under any provision of this Article EIGHTH to indemnification by the Corporation for some or a portion of the expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974) or amounts paid in settlement actually and reasonably incurred by or on behalf of Indemnitee in connection with any action, suit, proceeding or investigation and any appeal therefrom but not, however, for the total amount thereof, the Corporation shall nevertheless indemnify Indemnitee for the portion of such expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974) or amounts paid in settlement to which Indemnitee is entitled.

12. Insurance. The Corporation may purchase and maintain insurance, at its expense, to protect itself and any director, officer, employee or agent of the Corporation or another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan) against any expense, liability or loss incurred by him or her in any such capacity, or arising out of his or her status as such, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under the General Corporation Law of the State of Delaware.

13. Savings Clause. If this Article EIGHTH or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the Corporation shall nevertheless indemnify each Indemnitee as to any expenses (including attorneys' fees), liabilities, losses, judgments, fines (including excise taxes and penalties arising under the Employee Retirement Income Security Act of 1974) and amounts paid in settlement in connection with any action, suit, proceeding or investigation, whether civil, criminal or administrative, including an action by or in the right of the Corporation, to the fullest extent permitted by any applicable portion of this Article EIGHTH that shall not have been invalidated and to the fullest extent permitted by applicable law.

14. Definitions. Terms used herein and defined in Section 145(h) and Section 145(i) of the General Corporation Law of the State of Delaware shall have the respective meanings assigned to such terms in such Section 145(h) and Section 145(i).

NINTH: This Article NINTH is inserted for the management of the business and for the conduct of the affairs of the Corporation.

1. General Powers. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors.

2. Number of Directors; Election of Directors. Subject to the rights of holders of any series of Preferred Stock to elect directors, the number of directors of the Corporation shall be established from time to time by the Board of Directors. Election of directors need not be by written ballot, except as and to the extent provided in the Bylaws of the Corporation.

3. Classes of Directors. Subject to the rights of holders of any series of Preferred Stock to elect directors, the Board of Directors shall be and is divided into three classes, designated Class I, Class II and Class III. Each class shall consist, as nearly as may be possible, of one-third of the total number of directors constituting the entire Board of Directors. The Board of Directors is authorized to assign members of the Board of Directors already in office to Class I, Class II or Class III at the time such classification becomes effective.

4. Terms of Office. Subject to the rights of holders of any series of Preferred Stock to elect directors, each director shall serve for a term ending on the date of the third annual meeting of stockholders following the annual meeting of stockholders at which such director was elected; provided that each director initially assigned to Class I shall serve for a term expiring at the Corporation's first annual meeting of stockholders held after the effectiveness of this Restated Certificate of Incorporation; each director initially assigned to Class II shall serve for a term expiring at the Corporation's second annual meeting of stockholders held after the effectiveness of this Restated Certificate of Incorporation; and each director initially assigned to Class III shall serve for a term expiring at the Corporation's third annual meeting of stockholders held after the effectiveness of this Restated Certificate of Incorporation; provided further, that the term of each director shall continue until the election and qualification of his or her successor and be subject to his or her earlier death, resignation or removal.

5. Quorum. The greater of (a) a majority of the directors at any time in office and (b) one-third of the number of directors fixed pursuant to Section 2 of this Article NINTH shall constitute a quorum of the Board of Directors. If at any meeting of the Board of Directors there shall be less than such a quorum, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

6. Action at Meeting. Every act or decision done or made by a majority of the directors present at a meeting duly held at which a quorum is present shall be regarded as the act of the Board of Directors unless a greater number is required by law or by this Certificate of Incorporation.

7. Removal. Subject to the rights of holders of any series of Preferred Stock, directors of the Corporation may be removed only for cause and only by the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors.

8. Vacancies. Subject to the rights of holders of any series of Preferred Stock, any vacancies or newly-created directorships on the Board of Directors, however occurring, shall be filled only by vote of a majority of the directors then in office, although less than a quorum, or by a sole remaining director and shall not be filled by the stockholders. A director elected to fill a vacancy or to fill a position resulting from a newly-created directorship shall hold office until the next election of the class for which such director shall have been chosen, subject to the election and qualification of a successor and to such director's earlier death, resignation or removal.

9. Stockholder Nominations and Introduction of Business, Etc. Advance notice of stockholder nominations for election of directors and other business to be brought by stockholders before a meeting of stockholders shall be given in the manner provided by the Bylaws of the Corporation.

10. Amendments to Article. Notwithstanding any other provisions of law, this Certificate of Incorporation or the Bylaws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article NINTH.

TENTH: Stockholders of the Corporation may not take any action by written consent in lieu of a meeting. Notwithstanding any other provisions of law, this Certificate of Incorporation or the Bylaws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article TENTH.

ELEVENTH: Special meetings of stockholders for any purpose or purposes may be called at any time only by the Board of Directors, and may not be called by any other person or persons. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting. Notwithstanding any other provisions of law, this Certificate of Incorporation or the Bylaws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the votes that all the stockholders would be entitled to cast in an election of directors or class of directors shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article ELEVENTH.

TWELFTH: Unless the Corporation consents 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: (i) any derivative action or proceeding brought on behalf of the Corporation, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer, other employee or stockholder of the Corporation to the Corporation or the Corporation's stockholders, (iii) any action asserting a claim arising pursuant to any provision of the General Corporation Law of the State of Delaware or as to which the General Corporation Law of the State of Delaware confers jurisdiction on the Court of Chancery of the State of Delaware, or (iv) any action asserting a claim arising pursuant to any provision of this Certificate of Incorporation or the Bylaws of the Corporation (in each case, as they may be amended from time to time) or governed by the internal affairs doctrine.

Unless the Corporation consents 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 of 1933.

Any person or entity purchasing or otherwise acquiring or holding any interest in shares of capital stock of the Corporation shall be deemed to have notice of and consented to the provisions of this Article TWELFTH.

IN WITNESS WHEREOF, this Restated Certificate of Incorporation, which restates, integrates and amends the certificate of incorporation of the Corporation, and which has been duly adopted in accordance with Sections 228, 242 and 245 of the General Corporation Law of the State of Delaware, has been executed by its duly authorized officer this day of , 2018.

CASA SYSTEMS, INC.

By: _____
Name: Jerry Guo
Title: President and Chief Executive Officer

CERTIFICATE OF AMENDMENT
OF
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
CASA SYSTEMS, INC.

Casa Systems, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “**Corporation**”),

DOES HEREBY CERTIFY:

FIRST: That a resolution was duly adopted by the Board of Directors of the Corporation pursuant to Section 242 of the General Corporation Law of the State of Delaware setting forth an amendment to the Amended and Restated Certificate of Incorporation of the Corporation and declaring said amendment to be advisable and that such amendment be submitted to the stockholders of the Corporation for their consideration, as follows:

RESOLVED: That the first paragraph of Article FOURTH of the Amended and Restated Certificate of Incorporation of the Corporation be and hereby is deleted in its entirety and the following inserted in lieu thereof:

“FOURTH: Effective on the filing of this Certificate of Amendment of the Certificate of Incorporation (the “**Effective Time**”), a 5-for-1 stock split of the Corporation’s common stock, par value \$0.001 per share (the “**Common Stock**”) shall become effective, pursuant to which each share of Common Stock outstanding and held of record by each stockholder of the Corporation (including treasury shares) immediately prior to the Effective Time shall be reclassified and changed into 5 shares of Common Stock automatically and without any action by the holder thereof upon the Effective Time and shall represent 5 shares of Common Stock (the “**Stock Split**”). The par value of the Common Stock following the Stock Split shall remain at \$0.001 per share.

Each stock certificate representing a number of shares of common stock of the Corporation that was issued prior to the Effective Time shall, after the Effective Time, automatically and without the necessity of presenting the same for exchange, be deemed to represent the number of shares of Common Stock resulting from the application of the Stock Split effected pursuant to the paragraph above, and the holders of record thereof shall be entitled to receive, upon surrender of such certificate to the Corporation, a new certificate evidencing and representing the applicable number of shares of Common Stock resulting from such reclassification and change from the Stock Split.

The Corporation is authorized to have two classes of shares, designated as Common Stock and Preferred Stock. The total number of shares of Common Stock which the Corporation is authorized to issue is 100,000,000 shares, and the par value of each of the shares of Common Stock is one tenth of one cent (\$.001). The total number of shares of Preferred Stock which the Corporation is authorized to issue is 6,000,000 shares and the par value of each of the shares of Preferred Stock is one tenth of one cent (\$.001). A total of 1,290,679 shares of Preferred Stock shall be designated the "Series A Convertible Preferred Stock" (the "Series A Preferred Stock"), a total of 352,018 shares of Preferred Stock shall be designated the "Series B Convertible Preferred Stock" (the "Series B Preferred Stock") and a total of 3,859,200 shares of Preferred Stock shall be designated the "Series C Convertible Preferred Stock" (the "Series C Preferred Stock" and together with the Series A Preferred Stock and the Series B Preferred Stock, the "Series Preferred Stock").

SECOND: That thereafter, in lieu of a meeting and vote of the stockholders, the stockholders have given written consent to the foregoing resolution and amendment in accordance with Section 228 of the General Corporation Law of the State of Delaware.

THIRD: That said amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

[Signature Page Follows]

IN WITNESS WHEREOF, Casa Systems, Inc. has caused this Certificate to be executed by a duly authorized officer of this Corporation on this 1st day of December, 2017.

CASA SYSTEMS, INC.

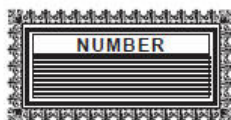
By: /s/ Jerry Guo

Name: Jerry Guo

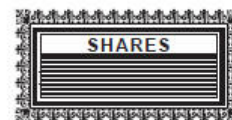
Title: President, Chief Executive Officer
and Chairman

SPECIMEN

SPECIMEN



casa systems



COMMON STOCK

INCORPORATED UNDER THE LAWS OF THE STATE OF DELAWARE

SEE REVERSE FOR CERTAIN DEFINITIONS

CUSIP 14713L 10 2

THIS CERTIFICATE THAT

SPECIMEN

IS THE OWNER OF

FULLY PAID AND NON-ASSESSABLE SHARES OF COMMON STOCK OF THE PAR VALUE OF \$0.001 PER SHARE OF

CASA SYSTEMS, INC.

transferable on the books of the Corporation by the holder hereof in person or by duly authorized Attorney, upon surrender of this Certificate properly endorsed. This certificate and the shares represented hereby are subject to the laws of the State of Delaware, and to the Certificate of Incorporation and Bylaws of the Corporation, as now or hereafter amended.

This certificate is not valid until countersigned and registered by the Transfer Agent and Registrar.

WITNESS the facsimile seal of the Corporation and the facsimile signatures of its duly authorized officers.

DATED:

PRESIDENT, CHIEF EXECUTIVE
OFFICER AND CHAIRMAN



CHIEF FINANCIAL OFFICER

AUTHORIZED SIGNATURE

CO-REGISTERED AND REGISTERED
AMERICAN STOCK TRANSFER & TRUST COMPANY, LLC
BROOKLYN, NY
TRANSFER AGENT AND REGISTRAR

PRINTED AND MANUFACTURED BY COLUMBIA PRINTING SERVICES, LLC

THE CORPORATION WILL FURNISH TO ANY STOCKHOLDER, UPON REQUEST AND WITHOUT CHARGE, A FULL STATEMENT OF THE DESIGNATIONS, RELATIVE RIGHTS, PREFERENCES AND LIMITATIONS OF THE SHARES OF EACH CLASS AND SERIES AUTHORIZED TO BE ISSUED, SO FAR AS THE SAME HAVE BEEN DETERMINED, AND OF THE AUTHORITY, IF ANY, OF THE BOARD TO DIVIDE THE SHARES INTO CLASSES OR SERIES AND TO DETERMINE AND CHANGE THE RELATIVE RIGHTS, PREFERENCES AND LIMITATIONS OF ANY CLASS OR SERIES. SUCH REQUEST MAY BE MADE TO THE SECRETARY OF THE CORPORATION OR TO THE TRANSFER AGENT NAMED ON THIS CERTIFICATE.

The following abbreviations, when used in the inscription on the face of this certificate, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM

-

as tenants in common

TEN ENT

-

as tenants by the entireties

JT TEN

-

as joint tenants with right of survivorship and not as tenants in common

UNIF GIFT MIN ACT -

Custodian

(Cust)

(Minor)

under Uniform Gifts to Minors

Act

(State)

Additional abbreviations may also be used though not in the above list.

For Value Received,_____ hereby sell, assign and transfer unto

PLEASE INSERT SOCIAL SECURITY OR OTHER
IDENTIFYING NUMBER OF ASSIGNEE

(PLEASE PRINT OR TYPEWRITE NAME AND ADDRESS, INCLUDING ZIP CODE, OF ASSIGNEE)

_____. Shares of the stock represented by the within Certificate, and do hereby irrevocably constitute and appoint

_____. Attorney to transfer the said stock on the books of the within named Corporation with full power of substitution in the premises.

Dated _____

NOTICE: THE SIGNATURE(S) TO THIS ASSIGNMENT MUST CORRESPOND WITH THE NAME(S) AS WRITTEN UPON THE FACE OF THE CERTIFICATE, IN EVERY PARTICULAR, WITHOUT ALTERATION OR ENLARGEMENT OR ANY CHANGE WHATSOEVER.

Signature(s) Guaranteed

By _____
The Signature(s) must be guaranteed by an eligible guarantor institution (Banks, Stockbrokers, Savings and Loan Associations and Credit Unions with membership in an approved Signature Guarantee Medallion Program), pursuant to SEC Rule 17Ad-15.

December 4, 2017

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 (File No. 333-221658) (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 8,400,000 shares of Common Stock, \$0.001 par value per share (the “Shares”), of Casa Systems, Inc., a Delaware corporation (the “Company”), including 1,260,000 Shares issuable upon exercise of an option granted by the Company to the several underwriters named in the Underwriting Agreement (as defined below).

The Shares are to be sold by the Company pursuant to an underwriting agreement (the “Underwriting Agreement”) to be entered into by and among the Company 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 issue and sale by the Company 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, stock record books 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

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.

Based upon and subject to the foregoing, we are of the opinion that the Shares have been duly authorized for issuance and, when the Shares are issued and paid for in accordance with the terms and conditions of the Underwriting Agreement, the Shares will be 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 Amendment No. 1 to the Registration Statement on Form S-1 of Casa Systems, Inc. of our report dated March 8, 2017, except for the effects of the stock split discussed in Note 19 to the consolidated financial statements, as to which the date is December 4, 2017, relating to the financial statements, which appears in such Registration Statement. We also consent to the reference to us under the heading “Experts” in such Registration Statement.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
December 4, 2017