

MoSys, Inc.
Form S-1/A
September 17, 2018
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As filed with the Securities and Exchange Commission on September 17, 2018

Registration No. 333-225193

**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***

**MOSYS, INC.
(Exact name of registrant as specified in its charter)**

Delaware
(State or other jurisdiction of
incorporation or organization)

3674
(Primary Standard Industrial
Classification Code Number)

77-0291941
(I.R.S. Employer
Identification No.)

2309 Bering Drive

San Jose, California 95131

(408) 418-7500

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

Daniel Lewis

Chief Executive Officer and President

MoSys, Inc.

2309 Bering Drive

San Jose, CA 95131

(408) 418-7500

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

Copies of all communications to:

Alan B. Kalin

Pillsbury Winthrop Shaw Pittman LLP

2550 Hanover Street

Palo Alto, CA 94304

(650) 233-4048

Approximate date of commencement of proposed sale to the public:

From time to time 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, please 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, smaller reporting company, or an emerging growth company. See the definitions of large accelerated filer, accelerated filer, smaller reporting company, and emerging growth company in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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

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Title of each class of securities to be registered	Proposed maximum aggregate offering price(1)	Amount of registration fee
Common Units consisting of: ⁽⁴⁾	\$2,400,000	
(i) common stock, par value \$0.001 per share ⁽²⁾		
(ii) warrants to purchase shares of common stock ⁽²⁾⁽³⁾		
(iii) pre-funded warrants representing only the right to acquire a number of additional shares of Common Stock determinable thereunder ⁽⁵⁾		
Pre-funded Units consisting of: ⁽⁴⁾	\$9,600,000	
(i) pre-funded warrants to purchase shares of common stock and the right to acquire a number of additional shares of Common Stock determinable thereunder ⁽²⁾⁽³⁾⁽⁵⁾		
(ii) warrants to purchase shares of common stock ⁽²⁾⁽³⁾		
Shares of common stock issuable upon exercise of warrants ⁽²⁾	\$9,000,000	
Shares of common stock issuable upon exercise of pre-funded warrants ⁽²⁾⁽³⁾		
Total	\$21,000,000	\$2,614.50⁽⁶⁾

- (1) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended.
- (2) Pursuant to Rule 416 under the Securities Act, the securities being registered hereunder include such indeterminate number of additional shares of common stock as may be issued after the date hereof as a result of stock splits, stock dividends or similar transactions.
- (3) No additional registration fee is payable pursuant to Rule 457(i) under the Securities Act of 1933, as amended.
- (4) The proposed maximum aggregate offering price of the common units proposed to be sold in the offering will be adjusted up or down on a dollar-for-dollar basis based on the offering price of any pre-funded units offered and sold in the offering, and the proposed maximum aggregate offering price of the pre-funded units to be sold in the offering will be adjusted up or down on a dollar-for-dollar basis based on the offering price of any common units sold in the offering. Accordingly, the proposed maximum aggregate offering price of the common units and pre-funded units (including the shares of common stock issuable upon exercise of the pre-funded warrants included in the pre-funded units), if any, is \$21,000,000.
- (5) The registration fee includes the maximum offering price of additional shares of common stock that can be purchased at \$0.001 per share upon applicability of a price adjustment provision.
- (6) The registrant paid filing fees totaling \$1,245.00 prior to this filing.

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, as amended, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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The information in this prospectus is not complete and may be changed. We may not sell these securities pursuant to this prospectus until the registration statement filed with the Securities Exchange Commission is effective. This prospectus is not an offer to sell these securities and is not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED SEPTEMBER 17, 2018

PROSPECTUS

Up to 3,037,975 Common Units (each Common Unit contains one Share of Common Stock, one Warrant to purchase three-quarters of one Share of Common Stock, and one Pre-funded Warrant to purchase a number of additional Shares of Common Stock based on a purchase price adjustment determinable thereunder)

and

Up to 12,167,301 Pre-Funded Units (each Pre-Funded Unit contains one Pre-funded Warrant to purchase one Share of Common Stock and a number of additional Shares of Common Stock based on a purchase price adjustment determinable thereunder, and one Warrant to purchase three-quarters of one Share of Common Stock)

and

Shares of Common Stock Underlying the Warrants and

Shares of Common Stock Underlying the Pre-funded Warrants

We are offering 3,037,975 common units, each common unit consisting of one share of our common stock, one warrant to purchase three quarters of one share of our common stock, and one pre-funded warrant to purchase a number of additional shares of common stock based on a purchase price adjustment determinable thereunder (together with the shares of common stock underlying such warrants). Each warrant contained in a common unit will have an exercise price equal to \$ per share. The warrants contained in the common units will be exercisable immediately and will expire on the five-year anniversary of the original issuance date. We are also offering the shares of our common stock that are issuable from time to time upon exercise of the warrants and pre-funded warrants contained in the common units.

We are also offering to each purchaser whose purchase of common units in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% of our outstanding common stock immediately following the consummation of this offering, 12,167,301 pre-funded units (each pre-funded unit consisting of one pre-funded warrant to purchase one share of our common stock and one warrant to purchase one share of our common stock) in lieu of common units that would otherwise result in a purchaser's beneficial ownership exceeding 4.99% of our outstanding common stock (or at the election of the purchaser, 9.99%). Each pre-funded warrant contained in a pre-funded unit includes a fixed portion that will be exercisable for one share of our common stock. The purchase price of each pre-funded unit is equal to the price per

common unit being sold to the public in this offering, minus \$0.001, and the exercise price of the fixed portion of each pre-funded warrant included in the pre-funded unit is \$0.001 per share. The pre-funded warrants issued with each pre-funded unit and each common unit also include a price reset adjustment to be determined after the 60-day anniversary of the closing date, if 85% of the lowest volume weighted average price per share of common stock, or VWAP, during the five-trading days immediately following such date is less than the price per share of common stock sold in this offering (the Reset Price). Pursuant to this adjustment provision, we will potentially issue to the purchasers in this offering a number of additional shares of our common stock under the terms of the pre-funded warrant at an additional purchase price of \$0.001 per share, equal to (x) the purchaser's total subscription amount paid at the closing of this offering divided by the Reset Price minus (y) the sum of (i) the number of shares of common stock issued to the purchaser at the closing of this offering and still held by the purchaser on such determination date plus (ii) the number of unexercised shares of common stock then subject to any pre-funded warrant issued to the purchaser as part of a pre-funded unit. The Reset Price will be subject to a floor equal to % of the closing bid price of our common stock on the trading day prior to execution of the purchase agreement. In the event that such VWAP is higher than the initial closing price, no additional shares will be issued. The pre-funded warrants issued with each common unit include only warrants for the purchase of shares of common stock pursuant to the price reset adjustment. All pre-funded warrants expire when exercised in full.

This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants contained in the pre-funded units and the common units sold in this offering. Because we will issue a warrant as part of each common unit or pre-funded unit, the number of warrants sold in this offering will not change as a result of a change in the mix of the common units and pre-funded units sold. Each such warrant will have an exercise price equal to \$ per share and will be exercisable immediately and will expire on the five-year anniversary of the original issuance date. We are also offering the shares of our common stock that are issuable from time to time upon exercise of the warrants that are contained in the pre-funded units and the common units.

The common units and the pre-funded units will not be issued or certificated. The shares of common stock or pre-funded warrants, as the case may be, and the warrants can only be purchased together in this offering but the securities contained in the common units or pre-funded units will be issued separately. The common units and the pre-funded units may be referred to collectively as the units.

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Our common stock is currently listed on the Nasdaq Capital Market (Nasdaq) under the symbol MOSY. On September 12, 2018, the last reported sale price of our common stock on Nasdaq was \$0.79 per share. All unit share and warrant numbers of the securities being offered included in this prospectus are based on an assumed public offering of \$0.79 per common unit and \$0.789 per pre-funded unit.

You should read carefully this prospectus and any applicable free writing prospectus, together with the additional information described in this prospectus under the headings Incorporation of Certain Information by Reference and Where You Can Find More Information, before you invest in any of our securities.

Investing in our securities involves risks. You should carefully read and consider the Risk Factors beginning on page 10 of this prospectus before investing. You should also consider the risk factors described or referred to in any documents incorporated by reference in this prospectus before investing in these securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

We have retained Roth Capital Partners, LLC and The Benchmark Company, LLC to act as our placement agents in connection with this offering. The placement agents have agreed to use their reasonable best efforts to solicit offers to purchase the securities in this offering. The placement agents have no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of the securities. There is no required minimum number of securities that must be sold as a condition to completion of this offering. Because there is no minimum offering amount required as a condition to the closing of this offering, the actual offering amount, placement agent fees and proceeds to us are not presently determinable and may be substantially less than the maximum amounts set forth above. We may sell fewer than all of the securities offered hereby, which may significantly reduce the amount of proceeds received by us, and investors in this offering will not receive a refund in the event that we do not sell an amount of securities sufficient to pursue the business goals outlined in this prospectus. In addition, because there is no escrow account and no minimum offering amount in this offering, investors could be in a position where they have invested in our company, but we are unable to fulfill our objectives due to a lack of interest in this offering. Also, any proceeds from the sale of securities offered by us will be available for our immediate use, despite uncertainty about whether we would be able to use such funds to effectively implement our business plan.

	Per Common Unit	Per Pre-funded Unit	Total
Public offering price			
Placement agent fees (1)			
Proceeds to us (before expenses)			

(1) We have agreed to reimburse the placement agents for certain out-of-pocket expenses. For additional information about the compensation paid to the placement agents, see Plan of Distribution on page 38. Delivery of the securities offered hereby is expected to be made on or about , 2018.

Lead Placement Agent

Roth Capital Partners

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Co-Placement Agent

The Benchmark Company

The date of this prospectus is _____, 2018.

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In this prospectus, MoSys, the Company, we, us, and our refer to MoSys, Inc. and its subsidiaries.

You should rely only on information contained or incorporated by reference in this prospectus. We have not authorized any person to provide you with information that differs from what is contained or incorporated by reference in this prospectus. If any person does provide you with information that differs from what is contained or incorporated by reference in this prospectus, you should not rely on it. This prospectus is not an offer to sell or the solicitation of an offer to buy any securities other than the securities to which it relates, or an offer of solicitation in any jurisdiction where offers or sales are not permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, even though this prospectus may be delivered or shares may be sold under this prospectus on a later date.

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ABOUT THIS PROSPECTUS

You should rely only on the information contained in this prospectus and in the documents incorporated by reference herein or any amendment hereto or any free writing prospectus prepared by us or on our behalf. We have not authorized any other person to provide you with different information. We are not making an offer to sell our common stock in any jurisdiction in which the offer or sale is not permitted. The information contained in this prospectus, the documents incorporated by reference or any free writing prospectus is accurate only as of its date, regardless of the time of delivery of this prospectus or any free writing prospectus or of any sale of the common stock.

Neither we, nor any of our officers, directors, agents or representatives make any representation to you about the legality of an investment in our common stock. You should not interpret the contents of this prospectus to be legal, business, investment or tax advice. You should consult with your own advisors for that type of advice and consult with them about the legal, tax, business, financial and other issues that you should consider before investing in our common stock.

Unless the context indicates otherwise, all references in this prospectus to MoSys, we, us, our company and our to MoSys, Inc. and its consolidated subsidiaries.

FORWARD-LOOKING STATEMENTS

Some of the statements in this prospectus constitute forward-looking statements. These statements involve known and unknown risks, uncertainties, and other factors that may cause our or our industry's actual results, levels of activity, performance, or achievements to be materially different from any future results, levels of activity, performance, or achievements expressed or implied by such forward-looking statements. These factors include, among others, those incorporated by reference under Risk Factors below.

In some cases, you can identify forward-looking statements by terms such as may, will, should, expects, plans, anticipates, believes, estimates, predicts, potential, or continue or similar terms.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance, or achievements. Our actual results could differ materially from those expressed or implied by these forward-looking statements as a result of various factors, including the risk factors under the section titled Risk Factors and a variety of other factors, including, without limitation, statements about our future business operations and results, the market for our technology, our strategy and competition.

Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of these statements. We undertake no obligation to update or revise any of the forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. In light of these risks, uncertainties and assumptions, the forward-looking events discussed or incorporated by reference in this prospectus may not occur.

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PROSPECTUS SUMMARY

The following summary highlights information contained elsewhere or incorporated by reference in this prospectus. This summary does not contain all of the information you should consider before investing in the securities. Before making an investment decision, you should read the entire prospectus carefully, including the matters discussed under the heading **Risk Factors** in this prospectus.

Our Company

We are a fabless semiconductor company focused on the development and sale of integrated circuits, or ICs, for the high-speed cloud networking, communications, security appliance, video, test and monitoring, and data center markets. Our solutions deliver time-to-market, performance, power, area and economic benefits for system original equipment manufacturers, or OEMs. Our principal product line and source of substantially all of our revenue is the Bandwidth Engine[®] product family. Bandwidth Engine ICs combine our proprietary 1T-SRAM[®] high-density embedded memory, integrated macro functions and high-speed serial interface, or SerDes I/O, with our intelligent access technology and a highly efficient interface protocol. Historically, our primary business was the design, development, marketing, sale and support of differentiated intellectual property, or IP, including embedded memory and high-speed parallel and SerDes I/O used in advanced systems-on-chips, or SoCs.

Our future success and ability to achieve and maintain profitability are dependent on the marketing and sales of our Bandwidth Engine IC products into networking, communications and other markets requiring high-bandwidth memory access. While we expect to experience revenue growth in 2018, we were recently informed by a large customer that it will be phasing out our Bandwidth Engine IC products over the next 24 months. The customer informed us that its decision was not attributable to any dissatisfaction with the Company's products or performance. We expect to fulfill the customer's remaining commitments and complete shipments of our Bandwidth Engine IC products to this customer in the first half of 2019. The loss of future business with this customer is expected to result in a material reduction in our revenue outlook beginning in the fourth quarter of 2018.

We had net income of \$0.7 million for the six-month period ended June 30, 2018, and incurred a net loss of \$8.4 million for the six-month period ended June 30, 2017. We had an accumulated deficit of \$223.8 million as of June 30, 2018. In addition, we incurred net losses of approximately \$10.7 million and \$32 million for the years ended December 31, 2017 and 2016, respectively. These and prior year losses have resulted in significant negative cash flows for almost a decade and have required us to raise substantial amounts of additional capital during this period. To date, we have primarily financed our operations through multiple offerings of common stock to investors and affiliates and an issuance of convertible notes, as well as asset-sale transactions.

The address and phone number of our principal executive offices are MoSys, Inc., 2309 Bering Drive, San Jose, CA 95131, (408) 418-7500.

Our Strategy

Our primary business objective is to be a profitable IP-rich fabless semiconductor company offering ICs that deliver unparalleled memory bandwidth and access rate performance for high-performance data processing in cloud networking, communications, security appliances, video, test and monitoring, and data center systems.

Our Business

Bandwidth Engine

The Bandwidth Engine is a memory-dominated IC that has been designed to be a high-performance companion IC to packet processors. While the Bandwidth Engine primarily functions as a memory device with a high-performance and high-efficiency interface, it also can accelerate certain processing operations by serving as a co-processor element. Our Bandwidth Engine ICs combine: (1) our proprietary high-density, high-speed, low latency embedded memory, (2) our SerDes I/O, (3) an open-standard interface protocol and (4) intelligent access technology. We believe an IC combining our 1T-SRAM memory and serial interface with logic and other intelligence functions provides a system-level solution and significantly improves overall system performance at lower cost, size and power consumption. Our Bandwidth Engine ICs can provide up to 4.5 billion memory accesses per second (and more in some applications), which is more than twice the performance of current memory-based solutions. They also can enable customers system designers to significantly narrow the gap between processor and memory IC performance by designing Bandwidth Engine ICs onto the networking system line cards and modifying systems at the line-card level to replace traditional

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memory solutions with Bandwidth Engine ICs. When compared with existing commercially available solutions, our Bandwidth Engine ICs may:

provide up to four times the performance;

reduce power by approximately 50%;

reduce cost by greater than 50%; and

result in a dramatic reduction in IC pin counts on the line card.

Our first-generation Bandwidth Engine IC products contain 576 megabytes, or MB, of memory and use a serial interface with up to 16 lanes operating at up to 10.3 Gbps per lane. In 2017, we announced the end-of-life of these products and expect to complete fulfillment of last-time customer orders by June 30, 2019.

Our second-generation Bandwidth Engine IC products contain 576 MB of memory and use our SerDes I/O with up to 16 lanes operating at up to 15 Gbps per lane. In addition to a speed improvement of up to 50% over our first-generation products, the second-generation architecture enables multiple family-member parts with added specialized features. We have been shipping Bandwidth Engine 2 IC products since 2013, and expect these products to be our primary revenue source for the foreseeable future.

Our third-generation Bandwidth Engine IC products contain 1152 MB of memory and use a SerDes interface with up to 16 lanes operating at up to 30 Gbps per lane. Bandwidth Engine 3 targets support for packet-processing applications with up to five billion memory single word accesses per second, as well as a burst mode to enable full duplex buffering up to 400 Gbps for ingress, egress and oversubscription applications. These devices provide benefits of size, power, and pin count reductions, as well as cost savings for our customers. We do not anticipate significant revenues from these products until the second half of 2019, or later.

Programmable Search Engine (PSE)

We brought our PSE IC products to market in 2016 to further leverage our proven serial interface technology and high-density integrated memory with processor engine architecture to enable high-speed customizable search, security, and data analysis functions for networking, security, and data center applications. Our PSE architecture features 32 search-optimized processor engines, data flow schedulers, and over a terabit of internal access bandwidth. The device leverages our GigaChip Interface communication protocol, or GCI, and high-density integrated memory (1152 Mb of 1T-SRAM embedded memory).

IP Licensing and Distribution

Historically, we have offered our memory and interface technologies on a worldwide basis to semiconductor companies, electronic product manufacturers, foundries, intellectual property companies and design companies through product development, technology licensing and joint marketing relationships. We licensed our technology to semiconductor companies who incorporated our technology into ICs that they sold to their customers. As a result of the change in our corporate strategy, since 2012, our licensing activities have primarily been limited to collecting

royalties on existing agreements, and we expect this trend to continue. Royalty and other revenue represented 12% of our total revenues for the six-months ended June 30, 2018. Royalty and other revenue generated from our existing license agreements represented 11%, 24%, and 45% of our total revenue for the years ended December 31, 2017, 2016, and 2015, respectively. Licensing and royalty revenues have been declining since 2010, and we expect continued decline of royalty revenues in 2018.

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SUMMARY OF THE OFFERING

Common units offered by us:	Up to 3,037,975 common units, each consisting of (i) one share of our common stock, (ii) a warrant to purchase three quarters of one share of common stock, (iii) and one pre-funded warrant to purchase a number of additional shares of common stock based on a purchase price adjustment determinable thereunder.
Pre-funded units offered by us:	We are also offering to each purchaser whose purchase of common units in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% of our outstanding common stock immediately following the consummation of this offering, 12,167,301 pre-funded units (each pre-funded unit consisting of one pre-funded warrant to purchase three quarters of one share of our common stock and one warrant to purchase one share of our common stock) in lieu of common units that would otherwise result in the purchaser's beneficial ownership exceeding 4.99% of our outstanding common stock (or, at the election of the purchaser, 9.99%). The purchase price of each pre-funded unit is equal to the price at which the common units are being sold to the public in this offering, minus \$0.001, and the exercise price of each pre-funded warrant included in each pre-funded unit is \$0.001 per share. Each pre-funded warrant also includes warrants to purchase a number of additional shares of common stock based on a purchase price adjustment determinable thereunder at a price of \$0.001 per share. Because we will issue a warrant as part of each common unit or pre-funded unit, the number of warrants sold in this offering will not change as a result of a change in the mix of the common units and pre-funded units sold. This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants sold in this offering.
Common Unit Offering price:	The purchase price for a common unit is \$0.79.
Pre-funded Unit Offering price:	The purchase price for a pre-funded unit is \$0.789.
Description of warrants:	The warrants will be exercisable beginning on the closing date and expire on the five-year anniversary of

the closing date at an initial exercise price per share equal to \$ subject to appropriate adjustment in the event of recapitalization events, share dividends, share splits, share combinations, reclassifications, reorganizations or similar events affecting our common stock. In addition, the warrant exercise price will be adjusted for dilutive issuances during the first three years after the original issue date of the warrant, except for certain exempt issuances described elsewhere in this prospectus under Description of Securities We are Offering, subject to a floor of % of the original exercise price of the warrants. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the warrants.

Table of Contents**Description of pre-funded warrants:**

The pre-funded warrants will be exercisable beginning on the closing date and expire when exercised in full at an initial exercise price per share equal to \$0.001, subject to appropriate adjustment in the event of recapitalization events, share dividends, share splits, share combinations, reclassifications, reorganizations or similar events affecting our common stock. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the pre-funded warrants.

One-time reset of pre-funded warrants

The pre-funded warrants issued with each pre-funded unit and common unit also include a price reset adjustment to be determined after the 60-day anniversary of the closing date, if 85% of the VWAP, during the five-trading days immediately following such date is less than the price per share of common stock sold in this offering (the reset price). Pursuant to this adjustment provision, we will potentially issue to the purchasers in this offering a number of additional shares of our common stock under the terms of the pre-funded warrant at an additional purchase price of \$0.001 per share, equal to (x) the purchaser's total subscription amount paid at the closing of this offering divided by the reset price minus (y) the sum of (i) the number of shares of common stock issued to the purchaser at the closing of this offering and still held by the purchaser on such determination date plus (ii) the number of unexercised shares of common stock then subject to any pre-funded warrant issued to the purchaser as part of a pre-funded unit. The reset price will be subject to a floor equal to % of the closing bid price of our common stock on the trading day prior to execution of the purchase agreement. In the event that such VWAP is higher than the initial closing price, no additional shares will be issued. The pre-funded warrants issued with each common unit include only warrants for the purchase of shares of common stock pursuant to the price reset adjustment. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the pre-funded warrants issued pursuant to the reset provision.

Repayment and Modification of 10% Senior Secured Convertible Notes

We have entered into a Memorandum of Understanding for Modification of our 10% Senior Secured Convertible Notes (the MOU) with the purchasers' agent and the holder of a majority-in-interest of such notes under the 10% Senior

Secured Convertible Note Purchase Agreement, dated March 14, 2016 (the Purchase Agreement), as amended. The MOU provides that the total indebtedness of \$10,036,141 of senior secured convertible notes currently due August 15, 2019 with interest at the annual rate of 8% (the Notes) will be restructured with gross proceeds of \$ being used to repay all or a portion of such indebtedness. The holders of the Notes will purchase in the offering an amount of the common units and pre-funded units being offered pursuant to this prospectus with a total purchase price of \$ and the Purchase Agreement and the Notes will be amended effective as of the date of this offering to provide that the remaining balance of any indebtedness subject to the Notes will be due August 15, 2023 and the conversion price of the Notes will be reduced from \$4.25 to \$ per share of common stock. See Modification of Senior Secured Convertible Notes on page 9 for additional information.

8,273,886

Shares of common stock outstanding before this offering:

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Shares of common stock outstanding after completion of this offering:	shares (assuming a combined public offering price of \$0.79 per common unit, the last reported sale price of our common stock on Nasdaq on September 12, 2018).
Use of Proceeds:	We expect to use the net proceeds received from this offering for working capital and general corporate purposes and to repay debt and payables, including \$ of the total indebtedness we owe under the Notes. See the section titled Use of Proceeds on page 22 of this prospectus for additional information.
No listing of warrants:	We do not intend to apply for listing of the warrants or the pre-funded warrants on any securities exchange or trading system.
NASDAQ Capital Market trading symbol for our common stock:	MOSY
Risk Factors:	Investing in our securities involves a high degree of risk and purchasers of our securities may lose their entire investment. See Risk Factors on page 10 below and the other information included elsewhere in this prospectus for a discussion of factors you should carefully consider before deciding to invest in our securities.

The number of shares of our common stock to be outstanding immediately before and after this offering is based on 8,273,886 shares outstanding as of August 31, 2018, and excludes, as of such date:

2,361,445 shares of common stock issuable upon conversion of the Senior Secured Convertible Notes due August 15, 2019 (calculated prior to the modification of the Notes as described in the MOU);

99,051 shares of common stock issuable upon exercise of outstanding exercisable stock options with a weighted average exercise price of approximately \$9.57 per share;

240,232 shares of common stock issuable upon exercise of outstanding stock options that are not exercisable;

167,505 shares of common stock issuable upon vesting of restricted stock units;

214,271 shares of common stock available for future issuance under our equity incentive plans;

147,024 shares of common stock available for sale under our employee stock purchase plan;

662,500 shares of common stock issuable upon exercise of warrants dated July 6, 2017 at \$2.35 per share;
and

23,571,257 shares of our common stock issuable upon exercise of the warrants and/or pre-funded warrants
offered hereby.

Unless otherwise indicated, the information in this prospectus assumes no exercise of the warrants offered hereby. The total number of shares of our common stock shown above to be outstanding immediately after this offering may be higher or lower than shown above depending on relative investor demand for each kind of unit.

(In thousands; unaudited)	Six-months ended		Years ended	
	June 30, 2018	June 30, 2017	December 31, 2017	December 31, 2016
Adjusted EBITDA	\$ 1,739	\$ (6,137)	\$ (7,075)	\$ (17,518)

Non-GAAP Financial Measures

Adjusted EBITDA. We define adjusted EBITDA as GAAP net income (loss), as reported on our consolidated statements of operations, excluding stock-based compensation, restructuring and impairment charges, amortization of intangibles, interest expense, depreciation, and our provision for income taxes. We believe that the exclusion of the amounts eliminated in calculating adjusted EBITDA can provide a useful measure for period-to-period comparisons of our operating performance. Further, we believe that adjusted EBITDA provides useful information in understanding and evaluating our operating results in the same manner as our management and our board of directors.

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Our use of adjusted EBITDA has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our results as reported under GAAP. Some of these limitations are:

Adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs;

Adjusted EBITDA does not reflect the significant interest expense or the cash requirements necessary to service interest or principal payments on our indebtedness;

Adjusted EBITDA does not reflect income tax payments that may represent a reduction in cash available to us;

Although depreciation and amortization are non-cash charges, the assets being depreciated and amortized may have to be replaced in the future, and adjusted EBITDA does not reflect cash capital expenditure requirements or contractual commitments for such replacements or for new capital expenditure requirements;

Adjusted EBITDA does not include the potentially dilutive impact of stock-based compensation and asset impairments;

Adjusted EBITDA does not reflect the timing of customers' product purchase prepayments;

Adjusted EBITDA does not include past restructuring and impairment charges; and

Other companies, including companies in our industry, may calculate adjusted EBITDA differently or not at all, which reduces its usefulness as a comparative measure.

Because of these limitations, you should consider adjusted EBITDA alongside other financial performance measures, including various cash flow metrics, net income (loss) attributable to us and our financial results presented in accordance with GAAP.

The following table reconciles our net income (loss) to adjusted EBITDA:

(In thousands; unaudited)	Six-months ended		Years ended	
	June 30, 2018	June 30, 2017	December 31, 2017	December 31, 2016
Reconciliation of GAAP net income (loss) and adjusted EBITDA:				
GAAP net income (loss)	\$ 663	\$ (8,399)	\$ (10,668)	\$ (32,048)

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Stock-based compensation expense	252	356	719	2,155
Restructuring and impairment charges		1,002	1,321	10,534
Amortization of intangible assets	55	56	112	111
Non-GAAP net income (loss)	970	(6,985)	(8,516)	(19,248)
EBITDA adjustments:				
Depreciation and amortization	340	389	747	998
Interest expense	427	447	927	687
Provision (benefit) for income taxes	2	12	(233)	45
Adjusted EBITDA	\$ 1,739	\$ (6,137)	\$ (7,075)	\$ (17,518)

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Modification of Senior Secured Convertible Notes

On September 13, 2018, we entered into a Memorandum of Understanding for Modification of 10% Senior Secured Convertible Notes (the "MOU") with the purchasers' agent and the holder of a majority-in-interest of such notes under the 10% Senior Secured Convertible Note Purchase Agreement, dated March 14, 2016 (the "Purchase Agreement"), pursuant to which the Company originally issued \$8,000,000 principal amount of 10% Senior Secured Convertible Notes initially due August 15, 2018 (the "Notes").

Under the terms of an amendment to the Purchase Agreement, and each of the Notes dated February 18, 2018, the maturity date of the Notes was extended to August 15, 2019 and the annual interest rate was reduced to 8% per annum, among other modifications.

The MOU includes the following principal changes to the Notes and the Purchase Agreement:

all indebtedness subject to the Notes will be restructured effective as of the closing date of the offering;

if the gross proceeds to be received by the Company on the closing date of the offering excluding securities to be purchased by the holders of the Notes, referred to as the base offering amount, are at least \$6,000,000, then, at the closing of the Offering, (a) we will use proceeds of the Offering equal to the base offering amount to repay a portion of indebtedness subject to the Notes and; the holders of the Notes will be purchasing at the closing of the offering an amount of the common units and/or pre-funded units being offered by us with a total purchase price equal to one-half of the base offering amount (but not in excess of 50% of the total amount of indebtedness subject to the Notes); and

simultaneously with the offering, and subject to repayment of indebtedness in accordance with the MOU:

the Agreement and the Notes will be amended to provide that the remaining balance of any indebtedness subject to the Notes will be due August 15, 2023;

the conversion price of the Notes will be reduced from \$4.25 per share to 115% of the price of a common stock unit sold in the Offering, if Nasdaq Listing Rule 5635(d) is applicable to the amendment specified in this paragraph 3, the greater of (x) market value on the date of such amendment and (y) book value per share of common stock, as such italicized terms are defined for purposes of such Listing Rule; and

The agreements to implement the foregoing terms for the modification of the Purchase Agreement and the Notes will provide that in no event can the total number of shares of common stock beneficially owned by a holder, or group of holders, of the Notes, exceed 19.9% of the number of shares of our common stock outstanding prior to the transactions described above, unless stockholder approval is obtained for such excess holding.

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RISK FACTORS

An investment in our securities is risky. Prior to making a decision about investing in our securities, you should carefully consider the specific risks discussed in this prospectus or otherwise incorporated by reference in this prospectus. The risks and uncertainties described in our SEC filings are not the only ones facing us. Additional risks and uncertainties not presently known to us, or that we currently see as immaterial, may also harm our business. If any of the risks or uncertainties described in this prospectus or our SEC filings or any such additional risks and uncertainties actually occur, our business, results of operations, cash flows and financial condition could be materially and adversely affected. In that case, the trading price of our common stock could decline, and you might lose part or all of your investment.

Risks Related to this Offering

This is a best efforts offering, no minimum amount of securities is required to be sold, and we may not raise the amount of capital we believe is required for our business.

We have retained Roth Capital Partners, LLC and The Benchmark Company, LLC to act as our placement agents in connection with this offering. The placement agents have agreed to use their reasonable best efforts to solicit offers to purchase the securities in this offering. The placement agents have no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of the securities. There is no required minimum number of securities that must be sold as a condition to completion of this offering. Because there is no minimum offering amount required as a condition to the closing of this offering, the actual offering amount, placement agent fees and proceeds to us are not presently determinable and may be substantially less than the maximum amounts set forth above. We may sell fewer than all of the securities offered hereby, which may significantly reduce the amount of proceeds received by us, and investors in this offering will not receive a refund in the event that we do not sell an amount of securities sufficient to pursue the business goals outlined in this prospectus. Thus, we may not raise the amount of capital we believe is required for our business and may need to raise additional funds, which may not be available or available on terms acceptable to us. Despite this, any proceeds from the sale of securities offered by us will be available for our immediate use, and because there is no escrow account and no minimum offering amount in this offering, investors could be in a position where they have invested in us, but we are unable to fulfill our objectives due to a lack of interest in this offering.

An investment in the common units and pre-funded units is extremely speculative and there can be no assurance of any return on any such investment.

An investment in the common units and pre-funded units is extremely speculative and there is no assurance that investors will obtain any return on their investment. Investors will be subject to substantial risks involved in an investment in us, including the risk of losing their entire investment.

Our management has broad discretion as to the use of the net proceeds from this offering.

We cannot specify with certainty the particular uses of the net proceeds we will receive from this offering, and these uses may vary from our current plans. Our management will have discretion in the application of the net proceeds, including for working capital, general corporate purposes and repayment of indebtedness as described in Use of Proceeds. Accordingly, you will have to rely upon the judgment of our management with respect to the use of the proceeds. Our management may spend a portion or all of the net proceeds from this offering in ways that holders of our common stock may not desire or that may not yield a significant return or any return at all. The failure by our management to apply these funds effectively could harm our business. Pending their use, we may also invest the net

proceeds from this offering in a manner that does not produce income or that loses value.

You will experience immediate and substantial dilution in the net tangible book deficit per share of the common stock included in the common units or issuable upon exercise of the warrants or pre-funded warrants in this offering.

Since the effective price per share of common stock included in the common units or issuable upon exercise of the warrants or the pre-funded warrants being offered is substantially higher than the net tangible book deficit per share of our common stock outstanding prior to this offering, you will suffer immediate and substantial dilution in the net tangible book deficit of the common stock included in the common units or issuable upon the exercise of the warrants or the pre-funded warrants issued in this offering. See the section titled "Dilution" below for a more detailed discussion of the dilution you will incur if you purchase units in this offering. The dilutive impact of the issuance of the securities offered under this prospectus could be increased substantially if the reset adjustment provisions of the pre-funded warrants included with the common units and the pre-funded units are triggered by a decline in the price of our common stock for the five-trading days immediately after the 60-day anniversary of the closing date of this offering. Moreover, the exercise price of the warrants included with the common units and the pre-funded units issued in this offering will be lowered in the event of certain dilutive issuances of common stock or common stock derivatives by us during the first three years after the closing date of this offering, which would result in the shares subject to those warrants being issued for substantially less than the current price of our common stock.

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Holders of our warrants will have no rights as a common stockholder until they acquire our common stock.

Until you acquire shares of our common stock upon exercise of your warrants, you will have no rights with respect to shares of our common stock issuable upon exercise of your warrants. Upon exercise of your warrants, you will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

A large number of shares issued in this offering may be sold in the market following this offering, which may depress the market price of our common stock.

A large number of shares issued in this offering may be sold in the market following this offering, which may depress the market price of our common stock. Sales of a substantial number of shares of our common stock in the public market following this offering could cause the market price of our common stock to decline. If there are more shares of common stock offered for sale than buyers are willing to purchase, then the market price of our common stock may decline to a market price at which buyers are willing to purchase the offered shares of common stock and sellers remain willing to sell the shares. All of the shares of common stock issued in the offering will be freely tradable without restriction or further registration under the Securities Act of 1933, as amended.

The warrants issued in this offering may not have any value.

Each warrant will have an exercise price equal to \$ _____ and will expire on the five-year anniversary of the date they first become exercisable. In the event our common stock price does not exceed the exercise price of the warrants during the period when the warrants are exercisable, the warrants may not have any value.

There is no public market for the warrants or the pre-funded warrants to purchase shares of our common stock included in the common units and the pre-funded units being offered by us in this offering.

There is no established public trading market for the warrants or the pre-funded warrants included in the common units and the pre-funded units being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply to list the warrants or the pre-funded warrants on any national securities exchange or other nationally recognized trading system, including the Nasdaq Capital Market. Without an active market, the liquidity of the warrants and the pre-funded warrants will be limited.

Our ability to utilize our net operating loss carryforwards may be limited as a result of an ownership change, as defined in Section 382 of the Internal Revenue Code of 1986, as amended, triggered by this offering.

As of December 31, 2017, we had approximately \$196 million of net operating loss (NOL) carryforwards for U.S. federal tax purposes. Under U.S. federal income tax law, we generally can use our NOL carryforwards (and certain related tax credits) to offset ordinary taxable income, thereby reducing our U.S. federal income tax liability, for up to 20 years from the year in which the losses were generated, after which time they will expire. Our California NOL carryforwards (and certain related tax credits) generally may be used to offset future state taxable income for 20 years from the year in which the losses are generated, depending on the state, after which time they will expire. The rate at which we can utilize our NOL carryforwards is limited (which could result in NOL carryforwards expiring prior to their use) each time we experience an ownership change, as determined under Section 382 of the Internal Revenue Code. A Section 382 ownership change generally occurs if a shareholder or a group of shareholders who are deemed to own at least 5% of our common stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. If an ownership change occurs, Section 382 generally would impose an annual limit on the amount of post-ownership change taxable income that may be offset with pre-ownership

change NOL carryforwards equal to the product of the total value of our outstanding equity immediately prior to the ownership change (reduced by certain items specified in Section 382) and the U.S. federal long-term tax-exempt interest rate in effect at the time of the ownership change. A number of special and complex rules apply in calculating this Section 382 limitation. While the complexity of Section 382 makes it difficult to determine whether and when an ownership change has occurred, we believe that an additional ownership change may occur upon the consummation of this offering. In addition, our ability to use our NOL carryforwards will be limited to the extent we fail to generate enough taxable income in the future before they expire. Existing and future Section 382 limitations and our inability to generate enough taxable income in the future could result in a substantial portion of our NOL carryforwards expiring before they are used. We have recorded a full valuation allowance for our deferred tax assets. In addition, under recent federal tax legislation, effective for losses arising in taxable years beginning after December 31, 2017, the deduction for NOLs is limited to 80 percent of taxable income, NOLs can no longer be carried back, and NOLs can be carried forward indefinitely.

Risks Related to our Business

We have a history of losses and we will need to raise additional capital in the future.

We recorded operating income of approximately \$1.1 million for the six-month period ended June 30, 2018, and we recorded an operating loss of approximately \$10.0 million for the year ended December 31, 2017. As of June 30, 2018, we had an accumulated deficit of approximately \$224 million. These and prior-year losses have resulted in significant negative cash flows and have required us to raise substantial amounts of additional capital during this period. To remain competitive and expand our product offerings to customers, we will need to increase revenues substantially beyond levels that we have attained in the past in order to generate sustainable operating profit and sufficient cash flows to continue doing business without raising additional capital from time to time. Given our history of fluctuating revenues and operating losses, the expected loss of a large IC customer, which will significantly reduce our revenue outlook, expected reduction in royalty revenues and challenges we face in securing and retaining customers for our IC products, we cannot be certain that we will be able to continue to achieve and maintain profitability on either a quarterly or annual basis in the future.

We currently lack the funds to repay the convertible notes due in August 2019, which raises doubt about our ability to continue as a going concern

In March 2016, we entered into a 10% Senior Secured Convertible Note Purchase Agreement and issued \$8 million aggregate principal amount of 10% Senior Secured Convertible Notes due August 15, 2018 (the Notes) to the purchasers of the Notes. Accrued interest is payable semi-annually in cash or in kind through the issuance of identical new Notes, or with a combination of the two, at our option. The terms of the Notes were amended pursuant to a written amendment effective as of February 18, 2018. The amendment extended the maturity date of the Notes to August 15, 2019. The principal amount of the Notes is convertible into our common stock, as is the accrued and unpaid interest on the Notes. We have the option of paying the interest in-kind by converting it into additional note principal. Through August 2018, we have made the required interest payments in-kind through the issuance of additional notes totaling approximately \$2.0 million.

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The February 2018 amendment also: (i) reduced the conversion rate of the Notes from one share of our common stock for each \$8.50 of outstanding debt to one share of our common stock for each \$4.25 of outstanding debt under the Notes, (ii) reduced the interest rate to 8%, and (iii) reduced the redemption purchase price in the event of certain transactions like an acquisition from 120% to 100% of the total amount of debt to be redeemed. The Notes are secured by substantially all of our assets.

However, as described under **Modification of Senior Secured Convertible Notes** above, we have entered into a MOU with the holders of the Notes and their agent to provide for repayment of a substantial portion of the Notes and a modification of the terms of the Notes to expand the due date for the remaining amount of the indebtedness to August 15, 2023, and a reduction in the conversion rate to one share of our common stock for each \$ of the remaining outstanding debt. If we fail to pay the Notes, including accrued interest, in full when due, the holders of the Notes, acting through their agent, will be entitled to pursue all of their remedies as secured creditors, including taking possession of the collateral securing the Notes and effecting a private sale of some or all of our assets securing the Notes. After the holders of the Notes take such actions, we may not have enough assets to make payments owed to other creditors, to continue operating our business, or distribute any funds to stockholders. Our inability to repay the convertible notes raises doubt about our ability to continue as a going concern.

Our failure to raise additional capital or generate the significant capital necessary to expand our operations and invest in new products could reduce our ability to compete and could harm our business.

We intend to continue spending substantial amounts to grow our business. Despite the extension of the repayment date for the Notes, as of the date of the prospectus, we still will need to obtain additional financing to pursue our business strategy, develop new products, respond to competition and market opportunities and acquire complementary businesses or technologies, in addition to repaying the Notes. There can be no assurance that such additional capital, whether in the form of debt or equity financing, will be sufficient or available and, if available, that such capital will be offered on terms and conditions acceptable to us.

If we were to raise additional capital through sales of our equity securities, our stockholders would suffer dilution of their equity ownership. If we engage in a subsequent debt financing, we may be required to accept terms that restrict our ability to incur additional indebtedness, prohibit us from paying dividends, repurchasing our stock or making investments, and force us to maintain specified liquidity or other ratios, any of which could harm our business, operating results and financial condition. If we need additional capital and cannot raise it on acceptable terms, we may not be able to, among other things:

Develop or enhance our products;

Continue to expand our product development and sales and marketing organizations;

Acquire complementary technologies, products or businesses;

Expand operations, in the United States or internationally;

Hire, train and retain employees; or

Respond to competitive pressures or unanticipated working capital requirements.

Our failure to do any of these things could seriously harm our ability to execute our business strategy and may force us to curtail our research and development plans or existing operations.

Our success depends upon the acceptance of our integrated circuits, or ICs, by equipment suppliers to the cloud networking, security and other systems markets.

The future prospects of our business depend on the adoption and acceptance by our target markets, which include cloud networking, communications, security appliances, video, test and monitoring, and data center. Our prospective customers may be unwilling to adopt and design-in our ICs due to the uncertainties and risks surrounding designing a new IC into their systems and relying on a supplier that has a limited history of manufacturing such ICs. In addition, our Bandwidth Engine IC products require our customers and their other IC suppliers to implement our proprietary GCI chip-to-chip communication protocol, which they may be unwilling to do. In the past, we have experienced reluctance to adopt the GCI interface from potential customers. We have determined and negotiated prices with a few customers for our ICs but to date still have limited experience with the cost of making and selling these products. Thus, currently, we do not know whether we will be able to generate adequate profit from making and selling these products.

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An important part of our strategy to gain market acceptance is to penetrate new markets by targeting market leaders to accept our IC solutions. This strategy is designed to encourage other participants in those markets to follow these leaders in adopting our solutions. If a high-profile industry participant adopts our ICs for one or more of its products but fails to achieve success with those products, or is unable to successfully implement our ICs, other industry participants' perception of our solutions could be harmed. Any such event could reduce the amount of future sales of our IC products.

Future revenue growth depends on our winning designs with existing and new customers, retaining current customers, and having those customers design our solutions into their product offerings and successfully selling and marketing such products. If we do not continue to win designs in the short term, our product revenue in the following years will not grow.

We sell our ICs to OEM customers that include our ICs in their products. Our technology is generally incorporated into products at the design stage, which we refer to as a design win, and which we define as the point at which a customer has made a commitment to build a board against a fixed schematic for his system, and this board will utilize our ICs. As a result, our future revenue depends on our OEM customers designing our ICs into their products, and on those products being produced in volume and successfully commercialized. If we fail to retain our current customers or convince our current or prospective customers to include our ICs in their products and fail to achieve a consistent number of design wins, our results of operations and business will be harmed. In addition, if a current or prospective customer designs a competitor's offering into its product, it becomes significantly more difficult for us to sell our IC solutions to that customer because changing suppliers involves significant cost, time, effort and risk for the OEM. Even if a customer designs one of our ICs into its product, we cannot be assured that the OEM's product will be commercially successful over time or at all or that we will receive or continue to receive any revenue from that customer. Furthermore, the customer product for which we obtain a design win may be canceled before the product enters production or before or after it is introduced into the market. Because of our extended sales cycle, our revenue in future years is highly dependent on design wins we are awarded today. Our lack of capital and uncertainty about our future technology roadmap also may limit our success in achieving additional design wins, as discussed under, "We may experience difficulties in transitioning to new wafer fabrication process technologies or in achieving higher levels of design integration, which may result in reduced manufacturing yields, delays in product deliveries and increased costs."

The design-win process is generally a lengthy, expensive and competitive process, with no guarantee of revenue, and, if we fail to generate sufficient revenue to offset our expenses, our business and operating results would suffer.

Achieving a design win is typically a lengthy, expensive and competitive process because our customers generally take a considerable amount of time to evaluate our ICs. In the markets we serve, the time from initial customer engagement to design win to production volume shipments can range from two to three years, though it may take longer for new customers or markets we intend to address. In order to win designs, we are required to both incur design and development costs and dedicate substantial engineering resources in pursuit of a single customer opportunity. Even though we incur these costs, we may not prevail in the competitive selection process, and, even if we do achieve a design win, we may never generate sufficient, or any, revenue to offset our development expenditures. Our customers have the option to decide whether or not to put our solutions into production after initially designing our products in the specification. The customer can make changes to its product after a design win has been awarded to us, which can have the effect of canceling a previous design win. This occurred in 2018 when a large customer decided to phase out its use of our products. The delays inherent in our protracted sales cycle increase the risk that a customer will decide to cancel, curtail, reduce or delay its product plans, causing us to lose anticipated revenue. In addition, any change, delay or cancellation of a customer's plans could harm our financial results, as we

may have incurred significant expense while generating no revenue.

If our foundries do not achieve satisfactory yields or quality, our cost of goods sold will increase, our operating margins will decline, and our reputation and customer relationships could be harmed.

We depend not only on sufficient foundry manufacturing capacity and wafer prices, but also on good production yields (the number of good die per wafer) and timely wafer delivery to meet customer demand and maintain profit margins. The fabrication of our products is a complex and technically demanding process. Minor deviations in the manufacturing process can cause substantial decreases in yields, and in some cases, cause production to be suspended. Our foundry, Taiwan Semiconductor Manufacturing Company, or TSMC, from time to time, experiences manufacturing defects and reduced manufacturing yields. Changes in manufacturing processes or the inadvertent use of defective or contaminated materials by our foundries could result in lower than anticipated manufacturing yields, which would harm our revenue or increase our costs. For example, in the past, our foundry produced ICs and met its process specification

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range but did not meet our customer's specifications causing us to write off a portion of our production lot. Many of these problems are difficult to detect at an early stage of the manufacturing process and may be time consuming and expensive to correct. Poor yields from our foundry, or defects, integration issues or other performance problems in our ICs, could cause us significant customer relations and business reputation problems, harm our operating results and give rise to financial or other damages to our customers. Our customers might consequently seek damages from us for their losses. A product liability claim brought against us, even if unsuccessful, would likely be time consuming and costly to defend.

We may experience difficulties in transitioning to new wafer fabrication process technologies or in achieving higher levels of design integration, which may result in reduced manufacturing yields, delays in product deliveries and increased costs.

We aim to use the most advanced manufacturing process technology appropriate for our solutions that is available from TSMC. As a result, we periodically evaluate the benefits of migrating our solutions to other technologies in order to improve performance and reduce costs. These ongoing efforts require us from time to time to modify the manufacturing processes for our products and to redesign some products, which in turn may result in delays in product deliveries. We are dependent on TSMC to support the production of wafers for future versions of our ICs, as TSMC is our sole foundry. Such production may require changes to TSMC's existing process technology. If TSMC elects to not alter their process technology to support future versions of our ICs, we would need to identify a new foundry.

In addition, our 1T-SRAM technology used in our Bandwidth Engine and PSE products is not available at process nodes below 40 nanometers. To date, we have not developed any memory products below the 40-nanometer process node. To continue the product roadmap for our Bandwidth Engine and PSE products, we will need to identify a new foundry and/or no longer use our 1T-SRAM technology. We do not consider this to adversely affect our current product offerings, but we expect to face difficulties, delays and increased expense as we transition our products to new processes, and potentially to new foundries for future products. For example, we believe our next generation of products will need to be designed using a FinFET process, which will require us to incur significantly high development costs for mask tooling and computer-aided design software. We currently lack the funds to pay for such development costs. Moreover, an inability to continue our product roadmap can adversely affect, and has in the past affected our efforts to win new customers, secure additional design wins and significantly grow our future revenues.

Because the manufacturing of integrated circuits is extremely complex, the process of qualifying a new foundry is a lengthy process and there can be no assurance that we will be able to find and qualify replacement suppliers without materially adversely affecting our business, financial condition, results of operations and prospects for future growth. We cannot assure you that we will be able to maintain our relationship with our current foundry or develop relationships with new foundries. If we or TSMC experience significant delays in transitioning to smaller geometries or fail to efficiently implement transitions, we could experience reduced manufacturing yields, delays in product deliveries and increased costs, any of which could harm our relationships with our customers and our operating results.

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Our main objective is the development and sale of our products to networking communications and data center systems providers and their subsystem and component vendors, and, if demand for these products does not grow, we may not achieve revenue growth and our strategic objectives.

We market and sell our ICs to cloud networking, communications, data center and other equipment providers and their subsystem and component vendors. We believe our future business and financial success depends on market acceptance and increasing sales of these products. In order to meet our growth and strategic objectives, networking infrastructure OEMs must incorporate our products into their systems, and the demand for their systems must grow as well. We cannot provide assurance that sales of our products to these OEMs will increase substantially in the future or that the demand for our customers' systems will increase. Our future revenues from these products may not increase in accordance with our growth and strategic objectives if instead our OEM customers modify their product designs, select products sold by our competitors or develop their own proprietary ICs. Moreover, demand for their products that incorporate our ICs may not grow or result in significant sales of such products due to factors affecting the customers and their business, such as industry downturns, declines in capital spending in the enterprise and carrier markets and unfavorable macroeconomic conditions. Thus, the future success of our business depends in large part on factors outside our control, and sales of our products may not meet our revenue growth and strategic objectives.

Our failure to continue to develop new products and enhance our products on a timely basis could diminish our ability to attract and retain customers.

The existing and potential markets for our products are characterized by ever-increasing performance requirements, evolving industry standards, rapid technological change and product obsolescence. These characteristics lead to periodic changes in customer requirements, shorter product life cycles and changes in industry demands and mandate new product introductions and enhancements to maintain customer engagements and design wins. In order to attain and maintain a significant position in the market, we will need to continue to enhance and evolve our products and the underlying proprietary technologies in anticipation of these market trends which may be impeded by our reductions in design engineering staff since the beginning of 2017.

Our future performance depends on a number of factors, including our ability to:

identify target markets and relevant emerging technological trends;

develop and maintain competitive technology by improving performance and adding innovative features that differentiate our products from alternative technologies;

enable the incorporation of our products into the customers' products on a timely basis and at competitive prices;

develop our products to be manufactured at smaller process geometries; and

respond effectively to new technological developments or new product introductions by others.

Our failure to enhance our existing IC products and develop future products that achieve broad market acceptance will harm our competitive position and impede our future growth.

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Our ICs have a lengthy sales cycle, which makes it difficult to predict success in this market and the timing of future revenue.

Our ICs have a lengthy sales cycle, ranging from six to 24 months from the date of our initial proposal to a prospective customer until the date on which the customer confirms that it has designed our product into its system. As lengthy, or an even lengthier period, could ensue before we would know the volume of products that such customer will, or is likely to, order. A number of factors can contribute to the length of the sales cycle, including technical evaluations of our products by the customers, the design process required to integrate our products into the customers' products and the timing of the customers' new product announcements. In anticipation of product orders, we may incur substantial costs before the sales cycle is complete and before we receive any customer payments. As a result, in the event that a sale is not completed or is cancelled or delayed, we may have incurred substantial expenses, making it more difficult for us to become profitable or otherwise negatively impacting our financial results. Furthermore, because of this lengthy sales cycle, the recording of revenues from our selling efforts may be substantially delayed, our ability to forecast our future revenue may be more limited and our revenue may fluctuate significantly from quarter to quarter. We cannot provide any assurances that our efforts to build a strong and profitable business based on the sale of ICs will succeed. If these efforts are not successful, in light of the substantial resources that we have invested, our future operating results and cash flows could be materially and adversely affected.

The semiconductor industry is cyclical in nature and subject to periodic downturns, which can negatively affect our revenue.

The semiconductor industry is cyclical and has experienced pronounced downturns for sustained periods of up to several years. To respond to any downturn, many semiconductor manufacturers and their customers will slow their research and development activities, cancel or delay new product developments, reduce their workforces and inventories and take a cautious approach to acquiring new equipment and technologies. As a result, our business has been in the past and could be adversely affected in the future by an industry downturn, which could negatively impact our future revenue and profitability. Also, the cyclical nature of the semiconductor industry may cause our operating results to fluctuate significantly from year-to-year, which may tend to increase the volatility of the price of our common stock.

We expect our royalty revenues to decrease compared with our historical results, and there is no guarantee revenues from our IC products will replace these lost revenues in the near future.

In 2011, we began to place greater emphasis on our IC business and re-deploy engineering, marketing and sales resources from IP to IC activities. We are no longer actively pursuing new license arrangements, and, as a result, our royalty and other revenues in 2017 declined when compared with prior years. In addition, the production volumes of the current royalty-bearing products shipped by our licensees are expected to decrease; therefore we expect our royalty revenue to decrease in 2018 and future periods. Historically, royalties have generated a 100% gross margin, and any decrease in royalties adversely affects our gross margin, operating results and cash flows.

Our revenue has been highly concentrated among a small number of licensees and customers, and our results of operations could be harmed if we lose a key revenue source and fail to replace it.

Our overall revenue has been highly concentrated, with a few customers accounting for a significant percentage of our total revenue. For the six-months ended June 30, 2018, our three largest customers represented 33%, 22% and 12% of total revenue, respectively. For the year ended December 31, 2017, our three largest customers represented 46%, 17% and 11% of total revenue, respectively. For the year ended December 31, 2016, our three largest customers represented 47%, 21% and 13% of total revenue, respectively. We expect that a relatively small number of customers

will continue to account for a substantial portion of our revenue for the foreseeable future. However, we were recently informed by a large customer that it will be phasing out our Bandwidth Engine IC products over the next 24 months. The loss of future business with this customer is expected to result in a material reduction in our revenue outlook beginning in the fourth quarter of 2018.

As a result of this revenue concentration, our results of operations could be adversely affected by the decision of a single key licensee or customer to cease using our technology or products or by a decline in the number of products that incorporate our technology that are sold by a single licensee or customer or by a small group of licensees or customers.

Our revenue concentration may also pose credit risks, which could negatively affect our cash flow and financial condition.

We might also face credit risks associated with the concentration of our revenue among a small number of licensees and customers. As of June 30, 2018, two customers represented 76% of total trade receivables. Our failure to collect receivables from any customer that represents a large percentage of receivables on a timely basis, or at all, could adversely affect our cash flow or results of operations and might cause our stock price to fall.

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Our products must meet exact specifications, and defects and failures may occur, which may cause customers to return or stop buying our products.

Our customers generally establish demanding specifications for quality, performance and reliability that our products must meet. However, our products are highly complex and may contain defects and failures when they are first introduced or as new versions are released. If defects and failures occur in our products during the design phase or after, we could experience lost revenues, increased costs, including warranty and customer support expenses and penalties for non-performance stipulated in customer purchase agreements, delays in or cancellations or rescheduling of orders or shipments, product returns or discounts, diversion of management resources or damage to our reputation and brand equity, and in some cases consequential damages, any of which would harm our operating results. In addition, delays in our ability to fill product orders as a result of quality control issues may negatively impact our relationship with our customers. We cannot assure you that we will have sufficient resources to satisfy any asserted claims. Furthermore, any such defects, failures or delays may be particularly damaging to us as we attempt to establish our reputation as a reliable provider of IC products.

Because we sell our products on a purchase order basis and rely on estimated forecasts of our customers' needs, inaccurate forecasts could adversely affect our business.

We sell our IC products pursuant to individual purchase orders, rather than long-term purchase commitments. Therefore, we will rely on estimated demand forecasts, based upon input from our customers, to determine how much product to manufacture. Because our sales will be based primarily on purchase orders, our customers may cancel, delay or otherwise modify their purchase commitments with little or no notice to us. For these reasons, we will generally have limited visibility regarding our customers' product needs. In addition, the product design cycle for networking OEMs is lengthy, and it may be difficult for us to accurately anticipate when they will commence commercial shipments of products that include our ICs.

Furthermore, if we experience substantial warranty claims, our customers may cancel existing orders or cease to place future orders. Any cancellation, delay or other modification in our customers' orders could significantly reduce our revenue, cause our operating results to fluctuate from period to period, and make it more difficult for us to predict our revenue. In the event of a cancellation or reduction of an order, we may not have enough time to reduce operating expenses to mitigate the effect of the lost revenue on our business.

If we overestimate customer demand for our products, we may purchase products from our manufacturers that we cannot sell. Conversely, if we underestimate customer demand or if sufficient manufacturing and testing capacity were unavailable, we would forego revenue opportunities and could lose market share in the markets served by our products and could incur penalty payments under our customer purchase agreements. In addition, our inability to meet customer requirements for our products could lead to delays in product shipments, force customers to identify alternative sources and otherwise adversely affect our ongoing relationships with our customers.

We depend on contract manufacturers for a significant portion of our revenue from the sale of our IC products.

Many of our current and prospective OEM customers use third party contract manufacturers to manufacture their systems, and these contract manufacturers purchase our products directly from us on behalf of the OEMs. Although we expect to work with our OEM customers in the design and development phases of their systems, these OEMs often give contract manufacturers some authority in product purchasing decisions. If we cannot compete effectively for the business of these contract manufacturers, or, if any of the contract manufacturers that work with our OEM customers experience financial or other difficulties in their businesses, our revenue and our business could be adversely affected. For example, if a contract manufacturer becomes subject to bankruptcy proceedings, we may not be able to obtain our

products held by the contract manufacturer or recover payments owed to us by the contract manufacturer for products already delivered to the contract manufacturer. If we are unable to persuade contract manufacturers to purchase our products, or if the contract manufacturers are unable to deliver systems with our products to OEMs on a timely basis, our business would be adversely affected.

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We rely on independent foundries and contractors for the manufacture, assembly, testing and packaging of our integrated circuits, and the failure of any of these third parties to deliver products or otherwise perform as requested could damage our relationships with our customers and harm our sales and financial results.

As a fabless semiconductor company, we rely on third parties for substantially all of our manufacturing operations. We depend on these parties to supply us with material in a timely manner that meets our standards for yield, cost and quality. We do not have long-term supply contracts with any of our suppliers or manufacturing service providers, and therefore they are not obligated to manufacture products for us for any specific period, in any specific quantity or at any specified price, except as may be provided in a particular purchase order. Any problems with our manufacturing supply chain could adversely impact our ability to ship our products to our customers on time and in the quantity required, which in turn could damage our customer relationships and impede market acceptance of our IC solutions.

Our third party wafer foundries, and testing and assembly vendors are located in regions at high risk for earthquakes and other natural disasters. Any disruption to the operations of these foundries and vendors resulting from earthquakes or other natural disasters could cause significant delays in the development, production, shipment and sales of our IC products.

TSMC, which manufactures our products, is located in Asia, as are other foundries we may use in the future. Our vendors that provide substrates and wafer sorting and handle the testing of our products, are headquartered in either Asia or the San Francisco Bay Area of California. Our primary manufacturing operations are located in San Jose, California. The risk of an earthquake in the Pacific Rim region is significant due to the proximity of major earthquake fault lines. The occurrence of earthquakes or other natural disasters could result in the disruption of the wafer foundry or assembly and test capacity of the third parties that supply these services to us and may impede our research and development efforts, as well as our ability to market and sell our products. We may not be able to obtain alternate capacity on favorable terms, if at all.

We might not be able to protect and enforce our intellectual property rights, which could impair our ability to compete and reduce the value of our technology.

Our technology is complex and is intended for use in complex SoCs and networking systems. Our licensees' products utilize our embedded memory and/or interface technology, and a large number of companies manufacture and market these products. Because of these factors, policing the unauthorized use of our intellectual property is difficult and expensive. We cannot be certain that we will be able to detect unauthorized use of our technology or prevent other parties from designing and marketing unauthorized products based on our technology. In the event we identify any past or present infringement of our patents, copyrights or trademarks, or any violation of our trade secrets, confidentiality procedures or licensing agreements, we cannot assure you that the steps taken by us to protect our proprietary information will be adequate to prevent misappropriation of our technology. Our inability to adequately protect our intellectual property would reduce significantly the barriers of entry for directly competing technologies and could reduce the value of our technology. Furthermore, we might initiate claims or litigation against third parties for infringement of our proprietary rights or to establish the validity of our proprietary rights. Litigation by us could result in significant expense and divert the efforts of our technical and management personnel, whether or not such litigation results in a determination favorable to us.

Our existing patents might not provide us with sufficient protection of our intellectual property, and our patent applications might not result in the issuance of patents, either of which could reduce the value of our core technology and harm our business.

We rely on a combination of patents, trademarks, trade secret laws and confidentiality procedures to protect our intellectual property rights. We cannot be sure that any patents will be issued from any of our pending applications or that any claims allowed from pending applications will be of sufficient scope or strength, or issued in all countries where our products can be sold, to provide meaningful protection or any commercial advantage to us. Failure of our patents or patent applications to provide meaningful protection might allow others to utilize our technology without any compensation to us.

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Any claim that our products or technology infringe third party intellectual property rights could increase our costs of operation and distract management and could result in expensive settlement costs or the discontinuance of our technology licensing or product offerings. In addition, we may incur substantial litigation expense, which would adversely affect our profitability.

The semiconductor industry is characterized by vigorous protection and pursuit of intellectual property rights or positions, which has resulted in often protracted and expensive litigation. We are not aware of any third party intellectual property that our products or technology would infringe. However, like many companies of our size with limited resources, we have not searched for all potentially applicable intellectual property in the public databases. It is possible that a third party now has, or may in the future obtain, patents or other intellectual property rights that our products or technology may now, or in the future, infringe. Our licensees and IC customers, or we, might, from time to time, receive notice of claims that we have infringed patents or other intellectual property rights of others. Litigation against us can result in significant expense and divert the efforts of our technical and management personnel, whether or not the litigation has merit or results in a determination adverse to us.

The discovery of defects in our technology and products could expose us to liability for damages.

The discovery of a defect in our technologies and products could lead our customers to seek damages from us. Many of our agreements with customers include provisions waiving implied warranties regarding our technology and products and limiting our liability to our customers. We cannot be certain, however, that the waivers or limitations of liability contained in our agreements with customers will be enforceable.

Royalty amounts owed to us might be difficult to verify, and we might find it difficult, expensive and time-consuming to enforce our license agreements.

The standard terms of our 1T-SRAM license agreements require our licensees to document the manufacture and sale of products that incorporate our technology and generally report this data to us after the end of each quarter. We have the right to audit these royalty reports periodically, although we have not conducted any such audits recently. These audits can be expensive, time-consuming and potentially detrimental to our business relationships. A failure to fully enforce the royalty provisions of our license agreements could cause our revenue to decrease and impede our ability to achieve and maintain profitability.

If we fail to retain key personnel, our business and growth could be negatively affected.

Our business has been dependent to a significant degree upon the services of a small number of executive officers and technical employees. The loss of key personnel could negatively impact our technology development efforts, our ability to deliver under our existing agreements, maintain strategic relationships with our partners, and obtain new customers. We generally have not entered into employment or non-competition agreements with any of our employees and do not maintain key-man life insurance on the lives of any of our key personnel.

Risks Related to Ownership of Our Common Stock

We may incur additional debt in the future, subject to certain limitations contained in our Notes.

The degree to which we are leveraged and the restrictions governing our indebtedness could have important consequences including, but not limited to:

limiting our ability to service all of our debt obligations;

impacting our ability to incur additional indebtedness or obtain additional financing in the future for working capital, capital expenditures, acquisitions or general corporate or other purposes;

increasing our vulnerability to general economic downturns and adverse industry conditions;

limiting our flexibility in planning for, or reacting to, changes in our business and our industry; and

limiting our ability to engage in certain transactions or capitalize on acquisition or other business opportunities.

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If we are in violation of the terms of the Notes in the future and do not receive a waiver, the Note holders could choose to accelerate payment on all outstanding loan balances. If we needed to obtain replacement financing, we may not be able to quickly obtain equivalent or suitable replacement financing. If we are unable to secure alternative sources of funding, such acceleration would have a material adverse impact on our financial condition.

Provisions of our certificate of incorporation and bylaws or Delaware law might delay or prevent a change-of-control transaction and depress the market price of our stock.

Various provisions of our certificate of incorporation and bylaws might have the effect of making it more difficult for a third party to acquire, or discouraging a third party from attempting to acquire, control of our company. These provisions could limit the price that certain investors might be willing to pay in the future for shares of our common stock. Certain of these provisions eliminate cumulative voting in the election of directors, limit the right of stockholders to call special meetings and establish specific procedures for director nominations by stockholders and the submission of other proposals for consideration at stockholder meetings.

We are also subject to provisions of Delaware law which could delay or make more difficult a merger, tender offer or proxy contest involving our company. In particular, Section 203 of the Delaware General Corporation Law prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years unless specific conditions are met. Any of these provisions could have the effect of delaying, deferring or preventing a change in control, including without limitation, discouraging a proxy contest or making more difficult the acquisition of a substantial block of our common stock.

Under our certificate of incorporation, our board of directors may issue up to 20,000,000 shares of preferred stock without stockholder approval on such terms as the board might determine. The rights of the holders of common stock will be subject to, and might be adversely affected by, the rights of the holders of any preferred stock that might be issued in the future.

Our stockholder rights plan could prevent stockholders from receiving a premium over the market price for their shares from a potential acquirer.

We adopted a stockholder rights plan that generally entitles our stockholders to rights to acquire additional shares of our common stock when a third party acquires 15% of our common stock or commences or announces its intent to commence a tender offer for at least 15% of our common stock. The plan also includes an exception to permit the acquisition of shares representing more than 15% of our common stock by a brokerage firm that manages independent customer accounts and generally does not have any discretionary voting power with respect to such shares. This plan could delay, deter or prevent an investor from acquiring us in a transaction that could otherwise result in stockholders receiving a premium over the market price for their shares of common stock. Our intention is to maintain and enforce the terms of this plan, which could delay, deter or prevent an investor from acquiring us in a transaction that could otherwise result in stockholders receiving a premium over the market price for their shares of common stock.

Potential volatility of the price of our common stock could negatively affect your investment.

We cannot assure you that there will continue to be an active trading market for our common stock. Historically, the stock market, as well as our common stock, has experienced significant price and volume fluctuations. Market prices of securities of technology companies have been highly volatile and frequently reach levels that bear no relationship to the operating performance of such companies. These market prices generally are not sustainable and are subject to wide variations. If our common stock trades to unsustainably high levels, it is likely that the market price of our common stock will thereafter experience a material decline. In the past, our board of directors approved stock

repurchase programs, and any future program could impact the price of our common stock and increase volatility.

In the past, securities class action litigation has often been brought against a company following periods of volatility in the market price of its securities. We could be the target of similar litigation in the future. Securities litigation could cause us to incur substantial costs, divert management's attention and resources, harm our reputation in the industry and the securities markets and negatively impact our operating results.

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Our stock price could drop, and there could be significantly less trading activity in our stock, if securities or industry analysts downgrade our stock or do not publish research or reports about our business.

Our stock price and the trading market for our stock are likely to be affected significantly by the research and reports concerning our company and our business which are published by industry and securities analysts. We do not have any influence or control over these analysts, their reports or their recommendations. Our stock price and the trading market for our stock could be negatively affected if any analyst downgrades our stock, publishes a report which is critical of our business, or discontinues coverage of us.

We are a smaller reporting company and, as a result of the reduced disclosure and governance requirements applicable to smaller reporting companies, our common stock may be less attractive to investors.

We are a smaller reporting company, and we are subject to lesser disclosure obligations in our SEC filings compared to other issuers. Specifically, smaller reporting companies are able to provide simplified executive compensation disclosures in their filings, are exempt from the provisions of Section 404(b) of the Sarbanes-Oxley Act requiring that independent registered public accounting firms provide an attestation report on the effectiveness of internal control over financial reporting and have certain other decreased disclosure obligations in their SEC filings, including, among other things, only being required to provide two years of audited financial statements in annual reports. Decreased disclosures in our SEC filings due to our status as a smaller reporting company may make it harder for investors to analyze our operating results and financial prospects.

If we fail to maintain compliance with the continued listing requirements of the Nasdaq Capital Market, our common stock may be delisted and the price of our common stock and our ability to access the capital markets could be negatively impacted.

Our common stock currently trades on the Nasdaq Capital Market under the symbol MOSY. This market has continued listing standards that we must comply with in order to maintain the listing of our common stock. The continued listing standards include, among others, a minimum bid price requirement of \$1.00 per share and any of: (i) a minimum stockholders' equity of \$2.5 million; (ii) a market value of listed securities of at least \$35.0 million; or (iii) net income from continuing operations of \$500,000 in the most recently completed fiscal year or in the two of the last three fiscal years. Our results of operations and fluctuating stock price directly impact our ability to satisfy these continued listing standards. In the event we are unable to maintain these continued listing standards, our common stock may be subject to delisting from the Nasdaq Capital Market.

On August 23, 2018, we received a deficiency notification letter from the Listing Qualifications Department (the Staff) of Nasdaq. Previously, on August 13, 2018, the Staff provided notification that the Company: (i) was not in compliance with the independent director and audit committee composition requirements, as set forth in Listing Rules 5605(b)(1) and 5605(c)(2), respectively, and (ii) would be provided a cure period to comply. However, the August 23, 2018 notification letter provided notice that due to the resignation of Stephen Domenik from our board of directors effective August 20, 2018, we are no longer eligible for the cure period described in the Staff's August 13, 2018 notification letter. We have 45 calendar days to submit a plan to regain compliance. If our plan is accepted, the Staff can grant an extension of up to 180 calendar days from the date of the letter to evidence compliance. If the Staff does not accept our plan, we will have the opportunity to appeal that decision before a Nasdaq Hearings Panel (Panel). There can be no assurance that, if we do appeal a subsequent delisting determination by the Staff to a Panel, that such appeal would be successful.

In addition, due to the recent resignation of a director, we no longer have at least two independent members serving on the compensation committee of the board of directors. We intend to fill the vacant board of directors and committee

seats prior to our next annual meeting of shareholders.

If we are delisted, we would expect our common stock to be traded in the over-the-counter market, which could adversely affect the liquidity of our common stock. Additionally, we could face significant material adverse consequences, including:

a limited availability of market quotations for our common stock;

a reduced amount of analyst coverage;

a decreased ability to issue additional securities or obtain additional financing in the future;

reduced liquidity for our stockholders;

potential loss of confidence by customers, collaboration partners and employees; and

loss of institutional investor interest.

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The following table sets forth the range of high and low sales prices of our common stock on Nasdaq for the periods indicated:

	High	Low
2018		
First Quarter (January 1 – March 31, 2018)	\$ 2.08	\$ 1.03
Second Quarter (April 1 – June 30, 2018)	\$ 2.23	\$ 1.14
2017		
First Quarter (January 1 – March 31, 2017)	\$ 4.32	\$ 1.75
Second Quarter (April 1 – June 30, 2017)	\$ 2.70	\$ 0.55
Third Quarter (July 1 – September 30, 2017)	\$ 1.81	\$ 0.89
Fourth Quarter (October 1 – December 31, 2017)	\$ 1.45	\$ 0.64
2016		
First Quarter (January 1 – March 31, 2016)	\$ 11.70	\$ 5.70
Second Quarter (April 1 – June 30, 2016)	\$ 6.50	\$ 3.23
Third Quarter (July 1 – September 30, 2016)	\$ 8.03	\$ 4.10
Fourth Quarter (October 1 – December 31, 2016)	\$ 7.80	\$ 2.30

Dividend Policy

We have never declared or paid any cash dividends on our common stock and do not currently anticipate declaring or paying cash dividends on our common stock in the foreseeable future. We currently intend to retain all of our future earnings, if any, to finance operations. Any future determination relating to our dividend policy 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 other factors that our board of directors may deem relevant.

Holders of Record

As of August 31, 2018, there were five holders of record of our common stock. The actual number of stockholders is greater than this number of record stockholders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees. This number of stockholders of record also does not include stockholders whose shares may be held in trust by other entities.

USE OF PROCEEDS

We estimate that we will receive net proceeds of approximately \$ _____ from the sale of units in this offering, after deducting placement agent fees and estimated offering expenses of approximately \$ _____ payable by us, based on an assumed public offering price of \$ _____ per common unit (the last reported sale price of our common stock on Nasdaq on _____, 2018).

We intend to use the net proceeds from this public offering for working capital and general corporate purposes (including research and development and sales and marketing, and capital expenditures) and to pay \$ _____ of the indebtedness represented by the Notes.

In addition, the amount and timing of what we actually spend for these purposes may vary and will depend on a number of factors, including our future revenue and cash generated by operations and the other factors described in Risk Factors. Accordingly, our management will have discretion and flexibility in applying the net proceeds of this offering. Pending use of the net proceeds as described above, we intend to invest the net proceeds in money market funds and investment-grade debt securities.

Because there is no minimum offering amount required as a condition to the closing of this offering, the actual offering amount, placement agent fees and proceeds to us are not presently determinable and may be substantially less than the amount set forth above. We may sell fewer than all of the securities offered hereby, which may significantly reduce the amount of proceeds received by us. Thus, we may not raise the amount of capital we believe is required for our business and may need to raise additional funds, which may not be available or available on terms acceptable to us.

Table of Contents**CAPITALIZATION**

The following table sets forth our actual cash and cash equivalents and our capitalization as of June 30, 2018, sale of the securities offered hereby and the use of proceeds, as described in the section entitled "Use of Proceeds."

The pro forma information set forth in the table below is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

	<u>As of June 30, 2018, (in thousands)</u>	
	Actual	Pro Forma(1)
Cash and cash equivalents	\$ 3,595	\$
Convertible notes payable	9,647	
Stockholders' equity:		
Convertible preferred stock, \$0.01 par value; 20,000 shares authorized and undesignated, actual, pro forma or as adjusted; no shares issued and outstanding, actual or pro forma		
Common stock, \$0.001 par value, 120,000 shares authorized; 8,171 shares issued and outstanding, actual; 11,312 shares issued and outstanding, pro forma	8	
Additional paid-in capital	232,228	
Accumulated deficit	(223,795)	
Total stockholders' equity	8,441	
Total capitalization	\$ 18,088	\$

(1) Pro-forma amounts assume the one-time reset of the pre-funded warrants and warrants does not take effect.

DILUTION

If you invest in the common units being offered by this prospectus, your ownership interest will be immediately diluted to the extent of the difference between the public offering price per common unit and the as adjusted net tangible book value per share of our common stock immediately after giving effect to this offering. Our unaudited net tangible book deficit as of June 30, 2018 was approximately \$(4.9) million, or \$(0.60) per share of our common stock. Net tangible book value (deficit) per share is equal to our total tangible assets minus total liabilities, divided by 8,170,910 shares of common stock outstanding as of June 30, 2018.

The following table illustrates this dilution based solely on the number of shares of common stock issued as part of the common units and pre-funded units at closing, and assumes that no warrants other than the pre-funded warrants offered hereby are exercised, prior to the reset taking effect.

	Proforma(1)
Assumed public offering price per common unit	\$ 0.79
Net tangible book deficit per share as of June 30, 2018	\$ (0.60)
Increase in pro forma net tangible book value (deficit) per share attributable to new investors in common stock from units purchased at closing	\$
Pro forma, as-adjusted, net tangible book value per share after this offering	\$
Dilution per share to investors in this offering	\$

(1) Pro-forma amounts assume the one-time reset of the pre-funded warrants and warrants does not take effect. The dilution information set forth in the table above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined at pricing.

This table does not take into account further dilution to new investors that could occur upon the exercise of the warrants offered hereby or outstanding options and warrants having a per share exercise price less than the public offering price per common unit in this offering. To the extent that outstanding options or warrants are exercised, or restricted stock units vest and settle, investors purchasing our common stock will experience further dilution. 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 convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

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The number of shares of our common stock shown above to be outstanding immediately before and after this offering is based on 8,170,910 shares outstanding as of June 30, 2018, and excludes, as of such date:

2,271,338 shares of common stock issuable upon conversion of the 8% Senior Secured Convertible Notes due August 15, 2019 (calculated without regard to the effects of the MOU);

94,122 shares of common stock issuable upon exercise of outstanding exercisable stock options with a weighted average exercise price of approximately \$7.68 per share;

249,354 shares of common stock issuable upon exercise of outstanding stock options that are not exercisable;

302,014 shares of common stock issuable upon vesting of restricted stock units;

186,403 shares of common stock available for future issuance under our equity incentive plan;

147,024 shares of common stock available for sale under our employee stock purchase plan;

662,500 shares of common stock issuable upon exercise of warrants dated July 6, 2017 at \$2.35 per share; and

23,571,257 shares of our common stock issuable upon exercise of the warrants and/or pre-funded warrants offered hereby.

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BUSINESS

Overview

We are a fabless semiconductor company focused on the development and sale of integrated circuits, or ICs, for the high-speed cloud networking, communications, security appliance, video, monitor and test, data center and computing markets. Our solutions deliver time-to-market, performance, power, area and economic benefits for system original equipment manufacturers, or OEMs. Our primary product line is marketed under the Bandwidth Engine and Programmable Search Engine names and marks, and these IC products integrate our proprietary, 1T-SRAM high-density embedded memory and a highly-efficient serial interface protocol resulting in a monolithic memory IC solution optimized for memory bandwidth and transaction access performance. Further performance benefits can be achieved to offload statistical, search or other custom functions using our optional integrated logic and processor elements. As data rates and the amount of high-speed processing increase, critical memory access bottlenecks occur. Our Bandwidth Engine, or BE, and Programmable Search Engine, or PSE, ICs drastically increase memory accesses per second, removing these bottlenecks. In addition, the serial interface and high-memory capacity reduce the board footprint, number of pins and complexity, while using less power.

In April 2017, we implemented restructuring initiatives to effect a reduction in our workforce and associated operating expenses, net loss and cash burn. Under these initiatives, we significantly reduced our headcount, closed international sales offices and relocated and downsized our corporate headquarters. We are primarily focusing our resources on producing and selling our existing products, and have substantially curtailed new product development. Despite the reduction in new product development, we believe our current product portfolio and roadmap position us for future growth and profitability, although we were recently informed by a large customer that it will be phasing out our Bandwidth Engine IC products over the next 24 months, which is expected to result in a material reduction in our revenue outlook beginning in the fourth quarter of 2018. We will continue to seek opportunities to sell existing products, license our technology and obtain third-party funding for new product development efforts. Our future success and ability to achieve and maintain profitability are dependent on the marketing and sales of our IC products into cloud networking, communications, security appliances, monitoring and test, data center, video, and other markets requiring high-bandwidth memory access.

Industry Background

The amount of data and the number of users and devices is growing exponentially, driven primarily by commercial and consumer cloud applications, video services, high speed mobile networks, Internet of Things, or IoT, and many other cloud applications. In order to meet these demands, the new cloud infrastructure; including the backbone, edge, access network and data centers must scale in both speed and intelligence to handle real-time security, bandwidth allocation, and service-level expectations. In addition, workloads or applications delivered at a massive scale from the cloud require flexible, efficient data and computing transmission to optimize resources to enable these applications and lower the overall cost, size and power of the data center. These increased demands strain communication between onboard IC devices, limiting the data throughput in network switches and routers and the network backbone.

To meet these demands, carrier and enterprise networks are merging with the cloud and are undergoing significant changes and, most significantly, are migrating to packet-based Ethernet networks that enable higher throughput, lower cost and uniform technology across access, core and metro network infrastructure. These networks are now being designed to deliver voice, video and high-speed Internet services on one converged, efficient and flexible network. These trends require networking systems, especially the high-speed switches and routers that primarily comprise these networks, to comply with evolving market requirements and be capable of providing new services and better quality of service while supporting new protocols and standards. To support these trends, traditional OEM network and

telecommunications equipment manufacturers, such as Alcatel-Lucent (a subsidiary of Nokia Corporation), Cisco Systems, Inc., Tel. LM Ericsson, Fujitsu Ltd., Hitachi Ltd., Huawei Technologies, Juniper Networks, Inc., Nokia Corporation, and ZTE Corporation, as well as a new set of white-box solutions from new vendors and cloud-service providers, must offer higher levels of packet forwarding rates, bandwidth density and be optimized to enable higher-density, lower power data path connectivity in the next generations of their networking systems.

Networking communications, security, video and computing systems throughout the cloud network must operate at higher speed and performance levels, and so require new generations of packet processors and improved memory subsystems to enable system performance. These systems and their component line cards generally need to support aggregate rates of 100 gigabits per second, or Gbps, and above to meet the continued growth in network traffic.

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Cloud services have accelerated this transition with applications such as security. Data centers and access equipment that were previously aggregating slower traffic at rates of 1Gbps to 10Gbps, and 40Gbps, now are being designed to aggregate traffic at 100 Gbps, or more. The transition to 100 Gbps networks is underway, and the increase in data rates for these networks is expected to continue to grow rapidly over the coming years.

Several types of semiconductors are included on each line card, including one or more processors and multiple memory chips. These processors are complex ICs or IC chipsets that perform high-speed data or packet processing for functions, such as traffic routing, shaping, metering, billing, statistics, detection, steering, security, video processing, monitoring and workload acceleration. The line cards use various types of memory ICs to facilitate temporary packet storage and assist in the analysis and tracking of information embedded within the data flowing through the processors. After a packet enters the line card, a packet or data processor helps separate the packet into smaller pieces for rapid analysis. In a typical packet-based network for example, the data is broken up into the packet header, which contains vital information on packet destination and type, such as the Internet protocol address, and the payload, which contains the data being sent. Generally, the line card operations must occur at full data rates and typically require accessing memory ICs many times. Simultaneously, the packet's payload, which may be substantially larger than the packet header, is also stored in memory ICs until processing is complete and the packet can re-combine and be sent to its next system destination. Within the line card, communication between the packet processor and memory ICs occurs through an interface consisting of combinations of physical pins on each type of chip. These pins are grouped together in a parallel or a serial architecture to form a pathway, called a bus, through which information is transferred from one IC to the next.

Today, the majority of physical buses that connect networking equipment and components use a parallel architecture to communicate between processors and memory ICs, which means information can travel only in one direction and in one instance at a time. As processing speeds increase, the number of pins required and the speed of the bus in a parallel architecture become a limitation on system performance and capability. In contrast, the number of connections is reduced substantially across fewer, higher-rate pins in a serial architecture, and data is transferred simultaneously in both directions. Data transfer rates are limited by the data access rates of the various ICs included on the line card, thus leading to bottlenecks when these ICs perform inadequately. In order to remove these bottlenecks and meet next-generation bandwidth requirements, the line card ICs need to support higher access rates enabled by internal memory or high-speed serial bus architectures and these more advanced interface protocols.

Most networking and communication systems sold and in operation today include line cards that process data at speeds ranging from 10 Gbps, to 100 Gbps, and support many aggregated slower ports. To accommodate the substantial and growing increase in demand for networking communications and applications, networking systems manufacturers are developing and bringing to market next-generation systems that run at aggregate speeds of 100 Gbps to 400 Gbps or more with developments underway to scale to thousands of Gbps, or terabits, per second. However, although processor performance in applications such as computing and networking has continued to double nearly every 18 months, or even sooner, the performance of memory technology has generally been able to double only once every 10 years. Existing memory IC solutions based on parallel interface architecture easily support speeds up to 40 Gbps, but are not optimal for meeting speeds of 100 Gbps and beyond due to system-level limitations for pin counts, power and performance. These networking and communications systems are generally comprised of a chassis populated by four to 16 line cards. Often, these systems are shipped to customers with only a portion of the line card slots populated, and the customer will add additional line cards subsequently to increase system performance, capacity and features.

Each line card requires a significant amount of memory to support its processing capabilities. Traditional external memory IC solutions currently used on line cards include both dynamic random access memory, or DRAM, and static random access memory, or SRAM. Line cards in networking systems use both specialized, high-performance DRAM

ICs, such as reduced-latency DRAM, or RLDRAM, low-latency DRAM, or LLDRAM, and commodity DRAM, such as double data rate, or DDR. The latest DDR memory called high-bandwidth memory, or HBM, provides high bandwidth, but has fundamentally slow access time. For very high access, networking systems use higher-performance SRAM ICs such as quad data rate, or QDR SRAM. These memories are very fast, but are much smaller, more costly and burn more power than traditional DRAM. Substantially all of these traditional memory IC solutions use parallel interfaces, which are slower than serial interfaces, so we believe they will be increasingly challenged to meet the performance, pin count, area and power requirements as networking systems expand beyond 100 Gbps. The result is a gap between processor and memory performance. To meet the higher performance requirements being demanded by the industry, while using current components and architectural approaches, system designers must add more discrete memory ICs to the line cards and/or add more embedded memory on the packet processor. This results in higher cost and

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power consumption, the use of more space on the line cards and additional communication interference between the ICs, which in turn results in additional bandwidth limitation problems. We believe our Bandwidth Engine family of products is well suited to address these challenges and replace these traditional memory solutions.

We have developed our ICs to synergistically address the need for high-speed data access and throughput currently confronting system designers. We expect our IC products to meet the increasing demands placed on conventional memory technology used on the line cards in high-speed systems. We believe that our products and technology are well positioned as replacements for existing IC solutions in order to meet the needs of a growing number of data processing applications with aggregate rates greater than 100 Gbps that require high bandwidth and high access rate to memory.

Our Approach

We have leveraged our proprietary intellectual property, or IP, to design our IC products to help networking OEMs address the growing bottlenecks in system performance. We have incorporated critical features into our product families to accomplish this objective.

On-Chip Acceleration

One significant performance bottleneck in any network line card is the need to transfer data between discrete ICs. Many of these data-transfer operations are iterative in nature, requiring subsequent, back-to-back accesses of the memory IC by the processor IC. Our Bandwidth Engine ICs include an arithmetic logic unit, or ALU, which enables the performance of mathematical operations on data. Moving certain processing functions from the processor IC to the Bandwidth Engine IC through the use of this embedded ALU, reduces the number of processing transactions and frees the processor IC to perform other important networking or micro-processing functions.

The PSE takes this concept one step further by incorporating integrated search-optimized processors. The processors can be programmed by the user to offload and accelerate standard and/or customized functions from the main processor thereby reducing memory transactions and data path complexity to provide improved performance and lower system latency.

High-Performance Interface

High-speed, efficient interfaces are critical building blocks to meet high data transfer rate requirements for communication between ICs on network line cards. We believe that current networking system requirements necessitate an industry transition from parallel to serial interface. As a result, semiconductor companies are increasingly turning to serial interface architectures to achieve needed system performance. For example, high-performance ICs that are sold into wide markets, such as field programmable gate arrays, or FPGAs, and network processing units, NPUs, are using serial interfaces to ensure they can compete with custom designed application specific ICs, or ASICs, by matching their performance. Using serial interfaces, IC developers also are able to reduce pin count (the wired electrical pins that connect an IC to the network line card on which it is mounted) on the IC. With reducing geometries, the size of most high-performance ICs is dictated by the number of pins required, rather than the amount of logic and memory embedded in the chip. As a result, using serial interface facilitates cost reduction and reduced system power consumption, while improving the performance of both the IC itself and the overall system. While serial interfaces provide significantly enhanced performance over parallel interfaces, SerDes interfaces traditionally have had higher power consumption, which is a challenge for IC designers. Our SerDes interfaces, however, are optimized to meet our customers' signal integrity, low- power consumption and latency requirements.

We make our interface technologies compliant with industry standards so that they can interoperate with interfaces on existing ICs. In addition, we make them programmable to support multiple data rates, which allows for greater flexibility for the system designer, while lowering their development and validation costs. Interoperability reduces development time, thereby reducing the overall time to market of our customers' systems.

Table of Contents*GigaChip Interface Protocol*

In addition to the physical characteristics of the serial interface, the protocol used to transmit data is also an important element that impacts speed and performance. To address this and complement our Bandwidth Engine devices, we have developed the GigaChip® Interface protocol, or GCI, which is an open-interface transport protocol optimized for efficient chip-to-chip communications. The GCI electrical interface is compatible with the current industry standard (Common Electrical Interface, release #11, or CEI-11G-SR and XFI) to simplify electrical interoperability between devices. GCI can enable highly efficient serial chip-to-chip communications, and its transport efficiency averages 90% for the data transfers it handles. GCI is included in our ICs and is offered to customers and prospective partners on terms intended to encourage widespread adoption.

High-Performance and High-Density Memory Architecture

The high-density of our proprietary 1T-SRAM technologies stems from the use of a single-transistor, or 1T, which is similar to DRAM, with a storage cell for each bit of information. Embedded memory utilizing our 1T-SRAM technologies is typically two to three times denser than the six-transistor storage cells used by traditional SRAM, or 6T-SRAM. Embedded memory utilizing our 1T-SRAM technologies typically provides speeds essentially equal to or greater than the speeds of traditional SRAM and DRAM, particularly for larger memory sizes. Our 1T-SRAM memory designs can sustain random access cycle times of less than three nanoseconds, significantly faster than DRAM technology. Embedded memory utilizing our 1T-SRAM technologies can consume as little as one-half the active power and generate less heat than traditional SRAM when operating at the same speed. The 1T-SRAM allows us to integrate more high-performance memory using less expensive processing technology, reduces system level heat dissipation and enables reliable operation using lower-cost packaging.

Our Strategy

Our primary business objective is to be a profitable IP-rich fabless semiconductor company offering ICs that deliver unparalleled memory bandwidth and access rate performance for high-performance data processing in cloud networking, security appliances, video, test and monitoring, and data center systems. The key components of our strategic plan include the following strategies:

Target Large and Growing Markets

Our initial strategy is to target the multi-billion-dollar networking telecommunications, security appliance and data center OEM equipment markets, and we have developed products to support the growth in 100 Gbps and higher networking speeds. We are currently supporting numerous customers, with whom we have achieved design wins. We continue to actively pursue additional design wins for the use of our ICs in our target markets. We believe our design wins represent the potential for significant future revenue growth. With limited history to date, however, we cannot estimate how much revenue each design win is likely to generate, or how much revenue all of these (and future design wins) are likely to generate. There is no assurance that these customer designs will be shipped in large volume by our customers to their customers, however.

Expand Adoption of the GigaChip Interface Protocol

We have provided our GCI interface protocol as an open industry standard that may be designed into other ICs in the system, as we believe this will further enable serial communication on network line cards and encourage adoption of our Bandwidth Engine IC products. A number of IC providers and partners have publicly announced their support of GCI and Bandwidth Engine, including the largest FPGA providers, Altera Corporation (a subsidiary of Intel

Corporation), Xilinx, Inc., and EZchip Semiconductor Ltd. (a subsidiary of Mellanox Technologies Ltd.), with whom we work closely to support common customers. In addition, multiple networking systems companies, including actual and prospective customers, have adopted GCI.

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Build Long-Term Relationships with FPGA Vendors and Suppliers of Data Processing Solutions

We believe that having long-term relationships with FPGA providers is critical to our success, as such relationships enable us to reduce our time-to-market, provide us with a competitive advantage and expand our target markets. A key consideration of network system designers is to demonstrate interoperability between our IC products and the data processing utilized in their systems. To obtain design wins, we must demonstrate this interoperability, and also show that our IC works optimally with the packet processor to achieve the performance requirements. In addition, our current strategy requires packet processor suppliers to adopt our GCI interface. To that end, we have been working closely with FPGA and application specific standard product providers, to enable interoperability between our Bandwidth Engine IC products and their high-performance products. To facilitate the acceptance of our Bandwidth Engine ICs, we have made available development and characterization kits for system designers to evaluate and develop code for next-generation networking systems. Our characterization kits are fully-functional hardware platforms that allow FPGA and ASIC providers, and their customers, to demonstrate interoperability of the Bandwidth Engine IC with the ASIC or FPGA the designers use within their networking systems.

Our Bandwidth Engine Products

The Bandwidth Engine is a memory-dominated IC that has been designed to be a high-performance companion IC to packet processors. While the Bandwidth Engine primarily functions as a memory device with a high-performance and high-efficiency interface, it also can accelerate certain processing operations by serving as a co-processor element. Our Bandwidth Engine ICs combine: (1) our proprietary high-density, high-speed, low latency embedded memory, (2) our high-speed serial interface technology, or SerDes, (3) an open-standard interface protocol and (4) intelligent access technology. We believe an IC combining our 1T-SRAM memory and serial interface with logic and other intelligence functions provides a system-level solution and significantly improves overall system performance at lower cost, size and power consumption. Our Bandwidth Engine ICs can provide up to and over 4.5 billion memory accesses per second, which is more than twice the performance of current memory-based solutions. They also can enable system designers to significantly narrow the gap between processor and memory IC performance. Customers that design Bandwidth Engine ICs onto the line cards in their networking systems will re-architect their systems at the line-card level and use our product to replace traditional memory solutions. When compared with existing commercially available solutions, our Bandwidth Engine ICs may:

provide up to four times the performance;

reduce power by approximately 50%;

reduce cost by greater than 50%; and

result in a dramatic reduction in IC pin counts on the line card.

Our first-generation Bandwidth Engine IC products contain 576 megabytes, or MB, of memory and use a serial interface with up to 16 lanes operating at up to 10.3 Gbps per lane. We announced the end-of-life of these products and expect to complete fulfillment of last-time customer orders by June 30, 2019.

Our second-generation Bandwidth Engine IC products contain 576 MB of memory and use a SerDes interface with up to 16 lanes operating at up to 15 Gbps per lane. In addition to a speed improvement of up to 50% over our first-generation products, the architecture has enabled multiple family-member parts with added specialized features. We have been shipping our Bandwidth Engine 2 IC products since 2013 and expect these products to be our primary revenue source for the foreseeable future.

Our third-generation Bandwidth Engine IC products contain 1152 MB of memory and use a SerDes interface with up to 16 lanes operating at up to 30 Gbps per lane. Bandwidth Engine 3 targets support for packet-processing applications with up to five billion memory single word accesses per second, as well as burst mode to enable full duplex buffering up to 400 Gbps for ingress, egress and oversubscription applications. The devices provide benefits of size, power, pin count and cost savings to our customers. We do not anticipate significant revenues from these products until 2019 or later.

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Programmable Search Engine (PSE)

We brought our PSE IC products to market in 2016 to further leverage our proven serial interface technology and high-density integrated memory with the processor engine architecture to enable high-speed customizable search, security, and data analysis functions for networking, security, and data center applications. Our PSE architecture features 32 search-optimized processor engines, data flow schedulers, and over a terabit of internal access bandwidth. The device leverages our GCI technology and high-density integrated memory (1152 Mb of 1T-SRAM embedded memory).

IP Licensing and Distribution

Historically, we have offered our memory and interface technologies on a worldwide basis to semiconductor companies, electronic product manufacturers, foundries, intellectual property companies and design companies through product development, technology licensing and joint marketing relationships. We licensed our technology to semiconductor companies who incorporated our technology into ICs that they sold to their customers. As a result of the change in our corporate strategy, since 2012, our licensing activities have primarily been limited to collecting royalties on existing agreements, and we expect this trend to continue. Royalty and other revenue represented 12% of our total revenues for the six-months ended June 30, 2018. Royalty and other revenue generated from our existing agreements represented 11%, 24%, and 45% of our total revenue for the years ended December 31, 2017, 2016, and 2015, respectively. Licensing and royalty revenues have been declining since 2010, and we expect continued decline of royalty revenues in 2018.

Research and Development

Our ability to compete in the future depends on successfully improving our technology to meet the market's increasing demand for higher performance and lower cost requirements. Development of our IC products requires specialized chip design and product engineers, as well as significant fabrication and testing costs, including mask costs, as we bring these products to market. During 2017, we substantially reduced our headcount, and have limited internal resources available for new IC product development, which will result in fewer product improvements and new developments. In the near term, our planned product roadmap will include software-based capabilities and features that leverage our existing base of IC products.

Sales and Marketing

We believe that systems OEMs typically prefer to extend the use of traditional memory solutions and their parallel interfaces, despite performance and costs challenges, and are reluctant to change their technology platforms and adopt new designs and technologies, such as serial interfaces, which are an integral part of our product solutions. Therefore, our principal selling and marketing activities to date have been focused on persuading these OEMs and key component specialists that our solutions provide critical performance advantages, as well as on securing design wins with them.

In addition to our direct sales personnel, we sell through sales representatives and distributors in the United States and Asia. We also have applications engineers who support our customer engagements and engage with the customers system architects and designers to propose and implement our IC and IP solutions, such as the GCI Interface, to address their systems challenges.

In the markets we serve, the time from initial customer engagement to design win to production volume shipments can range from 18 to 36 months. Networking, communications and security appliance systems can have a product life

from a few years to over 10 years once a product like ours has been designed into the system.

Our revenue has been highly concentrated, with a few customers accounting for a significant percentage of our total revenue. For the six-months ended June 30, 2018, Flextronics International, Ltd., or Flextronics, and Nokia, formerly Alcatel-Lucent, and Palo Alto Networks, Inc., represented 33%, 8% and 22% of total revenue, respectively. For the year ended December 31, 2017, Flextronics, Clavis Company and Nokia, represented 46%, 17% and 11% of total revenue, respectively. For the year ended December 31, 2016, Alcatel-Lucent, Clavis Company and Taiwan Semiconductor Manufacturing Co., Ltd., or TSMC, represented 47%, 21% and 13% of total revenue, respectively.

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Intellectual Property

We regard our patents, copyrights, trademarks, trade secrets and similar intellectual property as critical to our success, and rely on a combination of patent, trademark, copyright, and trade secret laws to protect our proprietary rights.

As of August 31, 2018, we held 68 U.S. and 43 foreign patents on various aspects of our technology, with expiration dates ranging from 2018 to 2035. We also held 10 pending patent applications in the U.S. and abroad. There can be no assurance that others will not independently develop or patent similar or competing technology or design around any patents that may be issued to us, or that we will be able to successfully enforce our patents against infringement by others.

The semiconductor industry is characterized by frequent litigation regarding patent and other intellectual property rights. Our licensees or we might, from time to time, receive notice of claims that we have infringed patents or other intellectual property rights owned by others. Our successful protection of our patents and other intellectual property rights and our ability to make, use, import, offer to sell, and sell products free from the intellectual property rights of others are subject to a number of factors, particularly those described under the, Risk Factors above.

Competition

The markets for our products are highly competitive. We believe that the principal competitive factors are:

processing speed and performance;

density and cost;

power consumption;

reliability;

interface requirements;

ease with which technology can be customized for and incorporated into customers' products; and

level of technical support provided.

We believe that our products compete favorably with respect to each of these criteria. Our proprietary 1T-SRAM embedded memory and high-speed serial interface IP can provide our Bandwidth Engine ICs with a competitive advantage over alternative devices. Alternative solutions are either DRAM or SRAM-based and can support either the memory size or speed requirements of high-performance networking systems, but generally not both. DRAM solutions provide a significant amount of memory at competitive cost, but DRAM solutions do not have the required fast access and cycle times to enable high-performance. The DRAM solutions currently used in networking systems

include RLDRAM from Micron Technology, Inc., or Micron, and Integrated Silicon Solutions, Inc., LLDRAM from Renesas, DDR from Samsung Electronics Co., Ltd., Micron and others, and HBM, which is stacked memory from Samsung Electronics Co. and SK Hynix. SRAM solutions can meet high-speed performance requirements, but often lack adequate memory size. The SRAM solutions currently used in networking systems primarily include QDR or similar SRAM products from Cypress Semiconductor Corporation and GSI Technology, Inc. Most of the currently available SRAM and DRAM solutions use a parallel, rather than a serial interface. To offset these drawbacks, system designers generally must use more discrete memory ICs, resulting in higher power consumption and greater utilization of space on the line card.

Our competitors include established semiconductor companies with significantly longer operating histories, greater name recognition and reputation, large customer bases, dedicated manufacturing facilities and greater financial, technical, sales and marketing resources. This may allow them to respond more quickly than us to new or emerging technologies or changes in customer requirements. Generally, customers prefer suppliers with greater financial resources than we have currently. Many of our competitors also have significant influence in the semiconductor industry. They may be able to introduce new technologies or devote greater resources to the development, marketing and sales of their products than we can. Furthermore, in the event of a manufacturing capacity shortage, these competitors may be able to manufacture products when we are unable to do so.

Our Bandwidth Engine ICs compete with embedded memory solutions, stand-alone memory ICs, including both DRAM and SRAM ICs, and ASICs designed by customers in-house to meet their system requirements. Our prospective customers may be unwilling to adopt and design-in our ICs due to the uncertainties and risks surrounding

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designing a new IC into their systems and relying on a supplier that has limited history of manufacturing such ICs and limited financial resources. In addition, Bandwidth Engine ICs require the customer and its other IC suppliers to implement our chip-to-chip communication protocol, the GCI interface. These parties may be unwilling to do this if they believe it could adversely impact their own future product developments or competitive advantages, or, if they believe it might complicate their development process or increase the cost of their products. To remain competitive, we believe we must provide unparalleled memory IC solutions with the highest bandwidth capability for our target markets, which solutions are engineered and built for high-reliability carrier and enterprise applications.

Manufacturing

We depend on third-party vendors to manufacture, package, assemble and test our IC products, as we do not own or operate a semiconductor fabrication, packaging or production testing facility for boards and system assembly. By outsourcing manufacturing, we can avoid the high cost associated with owning and operating our own facilities, allowing us to focus our efforts on the design and marketing of our products.

We perform an ongoing review of product manufacturing and testing processes. Our IC products are subjected to extensive testing to assess whether their performance meets design specifications. Our test vendors provide us with immediate test data and the ability to generate characterization reports that are made available to our customers. We have achieved ISO 9001:2015 certification, and all of our manufacturing vendors have also achieved ISO 9001 certification.

Employees

As of August 31, 2018, we had 22 employees all of whom are located in the United States, consisting of 13 in research and development and manufacturing operations and 9 in sales, general and administrative functions.

Available Information

We were founded in 1991, and reincorporated in Delaware in September 2000. Our website address is www.mosys.com. The information in our website is not incorporated by reference into this report. Through a link on the Investor section of our website, we make available our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as soon as reasonably practicable after they are filed with, or furnished to, the Securities and Exchange Commission, or SEC. You can also read and obtain copies of any materials we file with the SEC at the SEC's Public Reference Room at 450 Fifth Street, NW, Washington, DC 20549. You can obtain additional information about the operation of the Public Reference Room by calling the SEC at 1.800.SEC.0330. In addition, the SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including us.

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**SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED
STOCKHOLDER MATTERS**

The following table sets forth certain information as of August 31, 2018 concerning the ownership of our common stock by:

each stockholder known by us to be the beneficial owner of more than 5% of the outstanding shares of our common stock (currently our only class of voting securities);

each of our directors;

each of the named executive officers; and

all directors and executive officers as a group.

Beneficial ownership is determined in accordance with Rule 13d-3 of the Exchange Act, and includes all shares over which the beneficial owner exercises voting or investment power. Shares that are issuable upon the exercise of options, warrants and other rights to acquire common stock that are presently exercisable or exercisable within 60 days of August 31, 2018 are reflected in a separate column in the table below. These shares are taken into account in the calculation of the total number of shares beneficially owned by a particular holder and the total number of shares outstanding for the purpose of calculating percentage ownership of the particular holder. We have relied on information supplied by our officers, directors and certain stockholders and on information contained in filings with the SEC. Except as otherwise indicated, and subject to community property laws where applicable, we believe, based on information provided by these persons, that the persons named in the table have sole voting and investment power with respect to all shares of common stock shown as beneficially owned by them. The percentage of beneficial ownership is based on 8,273,886 shares of common stock outstanding as of August 31, 2018.

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Unless otherwise stated, the business address of each of our directors and named executive officers listed in the table is 2309 Bering Drive, San Jose, California 95131.

Name and Address of Beneficial Owner	Number of Shares		Percent of Class
	Number of Shares Beneficially Owned (Excluding Outstanding Options)(1)	Number of Shares Issuable on Exercise of Outstanding Securities(2) or Convertible Securities(3)	
Ingalls & Snyder LLC 1325 Avenue of the Americas New York, NY 10019	-	736,548(3)	9.9
Directors and Officers:			
Daniel Lewis		33,334	*
Daniel O Neil	-	33,334	*
Leonard Perham	176,853		2.1
James Sullivan	20,700	17,025	*
John Monson	18,047	14,906	*
All current directors and executive officers as a group (5 persons)	255,600	172,916	5.2

* Represents holdings of less than one percent.

- (1) Excludes shares subject to outstanding options, warrants, convertible securities or other rights to acquire common stock that are exercisable within 60 days of August 31, 2018.
- (2) Represents the number of shares subject to outstanding options, warrants, convertible securities or other rights to acquire common stock that are exercisable within 60 days of August 31, 2018.
- (3) The beneficial ownership of Ingalls includes shares of common stock issuable upon conversion of \$6,033,238 par amount of the Notes that are held by Ingalls & Snyder Value Partners, an investment partnership managed under an investment advisory contract with Ingalls, and for which Ingalls & Snyder Value Partners would have voting and dispositive power if such shares were converted. The individual at Ingalls with dispositive power or voting power with respect to the shares included in the table is Thomas O. Boucher, Managing Director. By their terms, the notes are not convertible at any time that, as a result of such conversion, the note holder would beneficially own more than 9.9% of our outstanding shares of common stock. This number of shares does not take into account the effects of the provisions of the MOU.

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DESCRIPTION OF CAPITAL STOCK

General

The following description of our capital stock, warrants and provisions of our certificate of incorporation and bylaws is a summary only and not a complete description.

Our authorized capital stock consists of 120,000,000 shares of common stock, par value \$0.001 per share, and 20,000,000 shares of preferred stock, par value \$0.01 per share

Common Stock

As of August 31, 2018, 8,273,886 shares of our common stock were outstanding and held of record by five stockholders. Each holder of our common stock is entitled to

one vote per share on all matters submitted to a vote of the stockholders;

dividends as may be declared by our board of directors out of funds legally available for that purpose, subject to the rights of any preferred stock that may be outstanding; and

his, her or its pro rata share in any distribution of our assets after payment or providing for the payment of liabilities and the liquidation preference of any outstanding preferred stock in the event of liquidation.

Holders of common stock have no cumulative voting rights, redemption rights or preemptive rights to purchase or subscribe for any shares of our common stock or other securities. All of the outstanding shares of common stock are fully paid and nonassessable. The rights, preferences and privileges of holders of our 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

We have designated 20,000 shares of our preferred stock as Series AA preferred stock for issuance pursuant to the exercise of rights under our rights plan, none of which are outstanding. For more information on the rights plan, see the discussion below.

Our board of directors has the authority, subject to any limitations prescribed by Delaware law, to issue shares of preferred stock in one or more series and to fix and determine the relative rights and preferences of the shares constituting any series to be established, without any further vote or action by the stockholders. Any shares of our preferred stock so issued may have priority over our common stock with respect to dividend, liquidation and other rights.

Our board of directors may authorize the issuance of our preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. Although the issuance of our preferred stock could provide us with flexibility in connection with possible acquisitions and other corporate purposes, under some circumstances, it could have the effect of delaying, deferring or preventing a change of control.

Outstanding Common Stock Warrants

On July 6, 2017, we issued warrants to purchase 662,500 shares of our common stock. The warrants have an exercise price of \$2.35 per share of our common stock, may be exercised from time to time beginning January 6, 2018 (the Initial Exercise Date), and at any time thereafter up to the date that is five years from the Initial Exercise Date, at which time any unexercised warrants will expire and cease to be exercisable.

The warrants are exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and by payment in full in immediately available funds for the number of shares of common stock purchased upon such exercise. If a registration statement registering the issuance of the shares of common stock underlying the warrants under the Securities Act is not then effective or available, the holder may exercise the warrant

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through a cashless exercise, in whole or in part, in which case the holder would receive upon such exercise the net number of shares of common stock determined according to the formula set forth in the warrant. No fractional shares of common stock will be issued in connection with the exercise of a warrant. In lieu of fractional shares, we will either pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price or round up to the next whole share. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock.

A holder will not have the right to exercise any portion of the warrant if the holder (together with its affiliates) would beneficially own in excess of 4.99% (or on election of the holder, 9.99%) of the number of shares of our stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the warrants. However, any holder may increase or decrease such percentage to any other percentage not in excess of 9.99% upon notice to us, provided that any increase in such percentage shall not be effective until 61 days after such notice to us.

In the event of a fundamental transaction, as described in the warrants, which generally includes any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the holders of the warrants will be entitled to receive upon exercise of the warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the warrants immediately prior to such fundamental transaction.

We filed a registration statement on Form S-1 to fulfill our obligation under the purchase agreement to provide for the resale by these investors of up to 662,500 shares of common stock issuable upon exercise of the warrants, which registration statement was declared effective by the SEC on February 2, 2018. We agreed to use commercially reasonable efforts to keep such registration statement effective at all times until (a) the warrant shares are sold under such registration statement or pursuant to Rule 144 under the Securities Act, (b) the warrant shares may be sold without volume or manner-of-sale restrictions pursuant to Rule 144 under the Securities Act, and (c) the five-year anniversary of the Initial Exercise Date, whichever is the earliest to occur.

Antitakeover Effects of Provisions of Our Certificate of Incorporation and Bylaws and of Delaware Law.

Certain provisions of our charter documents and Delaware law could have an anti-takeover effect and could delay, discourage or prevent a tender offer or takeover attempt that a stockholder might consider to be in its best interests, including attempts that might otherwise result in a premium being paid over the market price of our common stock.

Certificate of Incorporation and Bylaws.

Our certificate of incorporation provides that stockholders can take action only at a duly called annual or special meeting of the stockholders and not by written consent. At the same time, our bylaws provide that special meetings of stockholders may be called only by our chairman of the board, our chief executive officer, a majority of the total number of authorized directors or any individual holder of 25% of the outstanding shares of common stock. These provisions could delay consideration of a stockholder proposal until the next annual meeting. Our bylaws provide for an advance notice procedure for the nomination, other than by or at the direction of our board of directors, of candidates for election as directors, as well as for other stockholder proposals to be considered at annual meetings of stockholders. In addition, under our bylaws newly created directorships resulting from any increase in the number of directors or any vacancies in the board resulting from death, resignation, retirement, disqualification, removal from office or other cause during a director's term in office can be filled by the vote of the remaining directors in office, and the board is expressly authorized to amend the bylaws, without stockholder consent. These provisions may preclude a third party from removing incumbent directors and can control of our board of directors. Accordingly, these

provisions could discourage a third party from initiating a proxy contest, making a tender offer or otherwise attempting to gain control of our company.

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Delaware Takeover Statute.

Section 203 of the Delaware General Corporation Law, or DGCL, generally prohibits a publicly-held Delaware corporation from engaging in an acquisition, asset sale or other transaction resulting in a financial benefit to any person who, together with affiliates and associates, owns, or within three years did own, 15.0% or more of a corporation's voting stock. The prohibition continues for a period of three years after the date of the transaction in which the person becomes an owner of 15.0% or more of the corporation's voting stock, unless the business combination is approved in a prescribed manner. The statute could prohibit, delay, defer or prevent a change in control with respect to our company.

Antitakeover Effects of Our Rights Plan

On November 10, 2010, we executed a rights agreement in connection with the declaration by our board of directors of a dividend of one preferred stock purchase right to be paid on November 10, 2010, referred to as the record date, for each share of our common stock issued and outstanding at the close of business on the record date. Each right entitles the registered holder to purchase one one-thousandth of a share of our Series AA Preferred Stock, \$0.01 par value per share, at a price of \$48.00 per one one-thousandth of a share of such Series AA Preferred Stock, subject to adjustment, including as a result of our one-for-ten reverse stock split in February 2017 (which adjustment is not reflected here). Generally, the rights will not be exercisable until a third party acquires 15% of our common stock or commences or announces its intent to commence a tender offer for at least 15% of our common stock, other than holders of grandfathered stock as defined in the rights agreement.

Under the rights agreement, the firm of Ingalls & Snyder LLC, or Ingalls, and its managed account beneficial owners collectively will not trigger the rights as long as none of their shares are held for the purpose of acquiring control or effecting change or influence in control of us. This exclusion applies only to shares of common stock for which there is only shared dispositive power and Ingalls has only non-discretionary voting power.

The rights agreement could delay, deter or prevent an investor from acquiring us in a transaction that could otherwise result in our stockholders receiving a premium over the market price for their shares of common stock. The above discussion of the rights agreement is not complete, and we urge you to read the entire rights agreement and our certificate of incorporation, as amended, to see all of the terms and conditions applicable to the Series AA Preferred Stock and the rights to acquire shares of such stock. (See item (n) under Information Incorporated by Reference.)

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Equiniti Trust Company.

Nasdaq Capital Market Listing

Our common stock is listed on Nasdaq under the symbol MOSY.

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DESCRIPTION OF SECURITIES WE ARE OFFERING

The following description summarizes the material terms and provisions of the warrants that we may offer under this prospectus and any related warrant agreements and warrant certificates.

We are offering up to (i) 3,037,975 common units, each common unit consisting of one share of our common stock, one warrant to purchase three quarters of one share of common stock, and one pre-funded warrant to purchase a number of additional shares of common stock based on a purchase price adjustment determinable thereunder, and up to (ii) 12,167,301 pre-funded units, each pre-funded unit consisting of one pre-funded warrant to purchase one share of our common stock (and to purchase a number of additional shares of common stock based on a purchase price adjustment determinable thereunder), and one warrant to purchase three quarters of one share of our common stock. The share of common stock, warrant and pre-funded warrant included in each common unit will be issued separately, and the pre-funded warrant to purchase one share of common stock and the accompanying warrant included in each pre-funded unit will be issued separately. Units will not be issued or certificated. We are also registering the shares of common stock included in the common units and the shares of common stock issuable from time to time upon exercise of the pre-funded warrants included in pre-funded units and warrants included in the common units and the pre-funded units offered hereby. We may issue a larger number or smaller number of common units and a larger or smaller number of pre-funded units depending on relative investor demand for each type of unit.

Common Stock

The material terms and provisions of our common stock and each other class of our securities which qualifies or limits our common stock are described under the caption *Description of Capital Stock* in this prospectus.

Warrants

The following summary of certain terms and provisions of the warrants included in the common units and the pre-funded units that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the warrants, the form of which will be filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of warrant for a complete description of the terms and conditions of the warrants.

Duration and Exercise Price

Each warrant included in the common units and the pre-funded units offered hereby will have an initial exercise price per whole share equal to \$. The warrants will be immediately exercisable and will expire on the five-year anniversary of the original issuance date. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. If, at any time after the initial issuance of the warrants until the three year anniversary of the initial issuance date, we sell or grant any option to purchase or sell or grant any right to reprice, or otherwise dispose of or issue, any of our common stock or securities convertible into or exercisable for shares of our common stock at an effective price per share that is lower than the then exercise price of the warrant, then the exercise price will be reduced to equal such lower price, subject to a floor of % of the original exercise price of the warrants; except that no adjustment will be made with respect to issuances (a) of equity securities pursuant to our equity compensation plans, (b) securities issuable upon the exercise or exchange of or conversion of securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of the securities purchase agreement, provided that such securities have not been amended since the date of the securities purchase agreement to increase the number of such securities or to decrease the exercise price, exchange price or

conversion price of such securities (other than in connection with stock splits or combinations) or to extend the term of such securities, but this provision will not prohibit the issuance of securities in exchange for, or payment of, debt owed under the Notes, (c) unregistered securities issued pursuant to acquisitions or strategic transactions approved by a majority of the disinterested directors of the Company, and (d) up to \$ _____ of units, including shares of common stock, pre-funded warrants, and common warrants issued to other purchasers pursuant to the Prospectus concurrently with the closing of this offering at the common unit purchase price or pre-funded unit purchase price.

The warrants will be issued separately from the common stock included in the common units, or the pre-funded warrants included in the pre-funded units, as the case may be, and may be transferred separately immediately thereafter. A warrant to purchase three quarters of one share of our common stock will be included in each common unit or pre-funded unit purchased in this offering.

Exercisability

The warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the warrant to the extent that the holder would own more than 4.99% (or, at the election of a purchaser prior to issuance of the warrant, 9.99%) of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the warrants.

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Cashless Exercise

If, at the time a holder exercises its warrants, a registration statement registering the issuance of the shares of common stock underlying the warrants under the Securities Act is not then effective or available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the warrants.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the warrants. Rather, the number of shares of common stock to be issued will, at our election, either be rounded up to the nearest whole number or we will pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price.

Transferability

Subject to applicable laws, a warrant may be transferred at the option of the holder upon surrender of the warrant to us together with the appropriate instruments of transfer.

Exchange Listing

We do not intend to list the warrants on any securities exchange or nationally recognized trading system.

Rights as a Stockholder

Except as otherwise provided in the warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their warrants.

Fundamental Transaction

In the event of a fundamental transaction, as defined in the warrant, and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding common stock, the holders of the warrants will be entitled to receive upon exercise of the warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the warrants immediately prior to such fundamental transaction.

Pre-Funded Warrants

The following summary of certain terms and provisions of pre-funded warrants included in the pre-funded units and common units that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the pre-funded warrant, the form of which will be filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of pre-funded warrant for a complete description of the terms and conditions of the pre-funded warrants.

Duration and Exercise Price

Each pre-funded warrant will have an initial exercise price per share equal to \$0.001. The pre-funded warrants will be immediately exercisable and may be exercised at any time until the pre-funded warrants are exercised in full. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The pre-funded warrants issued with each pre-funded unit and common unit also include a price reset adjustment to be determined after the 60-day anniversary of the closing date, if 85% of the VWAP, during the five-trading days immediately following such date is less than the price per share of common stock sold in this offering (the reset price). Pursuant to this adjustment provision, we will potentially issue to the purchasers in this offering a number of additional shares of our common stock under the terms of the pre-funded warrant at an additional purchase price of \$0.001 per share, equal to (x) the purchaser's total subscription amount paid at the closing of this offering divided by the reset price minus (y) the sum of (i) the number of shares of common stock issued to the purchaser at the closing of this offering and still held by the purchaser on such determination date plus (ii) the number of unexercised shares of common stock then subject to any pre-funded warrant issued to the purchaser as part of a pre-funded unit. The reset price will be subject to a floor equal to ___% of the closing bid price of our common stock on the trading day prior to execution of the purchase agreement. In the event that such VWAP is higher than the initial closing price, no additional shares will be issued. The pre-funded warrants issued with each common unit include only warrants for the purchase of shares of common stock pursuant to the price reset adjustment. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the pre-funded warrants issued pursuant to the reset provision. The pre-funded warrants will be issued separately from the accompanying warrants included in the pre-funded units and the common units, and may be transferred separately immediately thereafter.

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Exercisability

The pre-funded warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the pre-funded warrant to the extent that the holder would own more than 4.99% (or, at the election of a purchaser prior to issuance of the warrant, 9.99%) of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's pre-funded warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants.

Cashless Exercise

If, at the time a holder exercises its pre-funded warrants, a registration statement registering the issuance of the shares of common stock underlying the pre-funded warrants under the Securities Act is not then effective or available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the pre-funded warrants.

Transferability

Subject to applicable laws, a pre-funded warrant may be transferred at the option of the holder upon surrender of the pre-funded warrant to us together with the appropriate instruments of transfer.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the pre-funded warrants. Rather, the number of shares of common stock to be issued will, at our election, either be rounded up to the nearest whole number or we will pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price.

Trading Market

There is no trading market available for the pre-funded warrants on any securities exchange or nationally recognized trading system.

Rights as a Stockholder

Except as otherwise provided in the pre-funded warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the pre-funded warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their pre-funded warrants.

Fundamental Transaction

In the event of a fundamental transaction, as defined in the pre-funded warrant, and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or

substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding common stock, the holders of the warrants will be entitled to receive upon exercise of the pre-funded warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the pre-funded warrants immediately prior to such fundamental transaction.

PLAN OF DISTRIBUTION

Roth Capital Partners, LLC, which we refer to as Roth Capital Partners is acting as the lead placement agent in connection with this offering, subject to the terms and conditions of a placement agency agreement dated , 2018. The Benchmark Company, LLC, which we refer to as Benchmark is acting as co-placement agent. The placement agents are not purchasing or selling any of the units offered by this prospectus, nor are the placement agents required to

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arrange the purchase or sale of any specific number or dollar amount of the units. The placement agents have agreed to use reasonable best efforts to arrange for the sale of all of the units offered hereby. Therefore, we may not sell the entire amount of the units offered pursuant to this prospectus. The placement agents may engage one or more sub-agents or selected dealers in connection with this offering.

In connection with the offering, we will be entering into a securities purchase agreement with each purchaser of not less than \$100,000 of common units or pre-funded units. This agreement includes representations and warranties by us and the purchaser. This agreement also includes a covenant that in no event shall the total number of shares of common stock owned by a purchaser, or a group of which such purchaser is a part, exceed 19.9% of the number of shares of common stock outstanding prior to the offering, unless stockholder approval is obtained for such excess holding.

Only certain institutional investors purchasing the securities offered hereby will execute, at such investors' option, a securities purchase agreement with us, providing such investors with certain representations, warranties and covenants from us, which representations, warranties and covenants will not be available to other investors who will not execute a securities purchase agreement in connection with the purchase of the securities offered pursuant to this prospectus. Therefore, those investors shall rely solely on this prospectus in connection with the purchase of securities in the offering.

We will deliver the securities being issued to the investors upon receipt of investor funds for the purchase of the securities offered pursuant to this prospectus. We expect to deliver the securities being offered pursuant to this prospectus on or about [redacted], 2018.

Commissions and Expenses

We have agreed to pay the placement agents an aggregate cash placement fee equal to 6.5% of the gross proceeds received at the closing from the sale of the units with respect to the base offering amount which is the amount of gross proceeds from the sale of units to investors excluding the proceeds of sales of units to the holders of Notes at the closing.

The following table shows per-unit and total cash placement agent fees we will pay to the placement agents in connection with the sale of the units offered pursuant to this prospectus.

	Per Common Unit	Per Pre-funded Unit
Placement Agent Fees		
Total		

Because there is no minimum offering amount required as a condition to closing in this offering, the actual aggregate cash placement fee, if any, is not presently determinable and may be substantially less than the maximum amount set forth above. In addition, subject to FINRA Rule 5110(f)(2)(d)(i), we have agreed to reimburse the placement agents for reasonable out-of-pocket expenses up to a maximum of \$80,000. We estimate that the total expenses of the offering payable by us, excluding the placement agent fees, will be approximately \$380,000.

Determination of Offering Price

The public offering price of the securities we are offering was negotiated between us and the investors, in consultation with the placement agents based on the trading of our common stock prior to the offering, among other things. Other

factors considered in determining the public offering price of our common stock we are offering include the history and prospects of the Company, the stage of development of our business, our business plans for the future and the extent to which they have been implemented, an assessment of our management, general conditions of the securities markets at the time of the offering and such other factors as were deemed relevant.

Indemnification

We have agreed to indemnify the placement agents against liabilities under the Securities Act. We have also agreed to contribute to payments the placement agents may be required to make in respect of such liabilities.

The placement agents may be deemed to be underwriters within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by it and any profit realized on the resale of the shares sold by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. As an underwriter, each placement agent would be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 415(a)(4) under the Securities Act and Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of shares by the placement agents acting as principals. Under these rules and regulations, the placement agents may not engage in any stabilization activity in connection with our securities; and may not bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until they have completed their participation in the distribution.

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Electronic Distribution

This prospectus may be made available in electronic format on websites or through other online services maintained by the placement agents, or by an affiliate. Other than this prospectus in electronic format, the information on the placement agents' website and any information contained in any other website maintained by the placement agents or by an affiliate is not part of this prospectus or the registration statement of which this prospectus is a part, has not been approved and/or endorsed by us or the placement agents, and should not be relied upon by investors.

The foregoing does not purport to be a complete statement of the terms and conditions of the placement agency agreement or the securities purchase agreement, copies of which are incorporated by reference into the registration statement of which this prospectus is a part. See [Where You Can Find More Information](#).

Regulation M Restrictions

The placement agents may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by it and any profit realized on the resale of any units sold by it while acting as a principal might be deemed to be underwriting discounts or commissions under the Securities Act. As an underwriter, the placement agents would be required to comply with the requirements of the Securities Act and the Securities Exchange Act of 1934, as amended, or the Exchange Act, including Rule 415(a)(4) under the Securities Act and Rule 10b-5 and Regulation M promulgated under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of shares offered hereby by any placement agent acting as a principal. Under these rules and regulations, a placement agent:

must not engage in any stabilization activity in connection with our securities; and

must not bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until it has completed its participation in the distribution.

Passive Market Making

In connection with this offering, the placement agents may engage in passive market making transactions in our Common Stock on the Nasdaq Capital Market in accordance with Rule 103 of Regulation M promulgated under the Exchange Act during a period before the commencement of offers or sales of the units and extending through the completion of the distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. If all independent bids are lowered below the passive market maker's bid, however, that bid must then be lowered when specified purchase limits are exceeded.

Lock-Up Agreements

We and each of our officers and directors have agreed not to offer, pledge, sell, contract to sell, grant any option or contract to purchase, purchase any option or contract to sell, or otherwise dispose of, directly or indirectly, any common stock or any securities convertible into, exercisable for, or exchangeable for 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 the common stock for a period of 90 days after the effective date of the registration statement of which this prospectus is a part without the prior written consent of Roth Capital Partners, except for sales of shares to satisfy

tax withholding obligations upon settlement of restricted stock units outstanding as of the date of the lock-up agreement. This consent may be given at any time without public notice. Each officer and director shall be immediately and automatically released from all restrictions and obligations under the lock up agreement in the event that he or she ceases to be a director or officer of our company and has no further reporting obligations under Section 16 of the Exchange Act.

Other

From time to time, the placement agents and their affiliates may in the future provide various investment banking, financial advisory and other services to us and our affiliates for which services they may receive customary fees, but we have no present arrangements to do so. Subject to Regulation M and other applicable statutes and regulations, in the course of its businesses, the placement agents and their affiliates may actively trade our securities or loans for their own account or for the accounts of customers, and, accordingly, the placement agents may at any time hold long or short positions in such securities or loans.

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Listing

Our common stock is listed on the Nasdaq Capital Market under the symbol MOSY. There is no established trading market for the warrants or the pre-funded warrants offered by this prospectus, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the warrants or the pre-funded warrants offered by this prospectus on any securities exchange or recognized trading system.

Selling Restrictions

European Economic Area

This prospectus does not constitute an approved prospectus under Directive 2003/71/EC and no such prospectus is intended to be prepared and approved in connection with this offering. Accordingly, in relation to each Member State of the European Economic Area which has implemented Directive 2003/71/EC (each, a Relevant Member State) an offer to the public of any shares of common stock, which are the subject of the offering contemplated by this prospectus may not be made in that Relevant Member State except that an offer to the public in that Relevant Member State of any shares of common stock may be made at any time under the following exemptions under the Prospectus Directive, if and to the extent that they have been implemented in that Relevant Member State:

- (a) to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- (b) to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), subject to obtaining the prior consent of the representatives of the underwriter for any such offer; or
- (c) in any other circumstances which do not require any person to publish a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an offer to the public in relation to any shares of common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares of common stock to be offered so as to enable an investor to decide to purchase any shares of common stock, as the expression may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State and the expression Prospectus Directive means Directive 2003/71/EC (and any amendments thereto including the 2010 PD Amending Directive to the extent implemented in each Relevant Member State) and includes any relevant implementing measure in each Relevant Member State and the expression 2010 PD Amending Directive means Directive 2010/73/EU.

United Kingdom

This prospectus is not an approved prospectus for purposes of the UK Prospectus Rules, as implemented under the EU Prospectus Directive (2003/71/EC), and have not been approved under section 21 of the Financial Services and Markets Act 2000 (as amended) (the FSMA) by a person authorized under FSMA. The financial promotions contained in this prospectus is directed at, and this prospectus is only being distributed to (1) persons who receive this prospectus outside of the United Kingdom, and (2) persons in the United Kingdom who fall within the exemptions

under articles 19 (investment professionals) and 49(2)(a) to (d) (high net worth companies, unincorporated associations, etc.) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (all such persons together being referred to as Relevant Persons). This prospectus must not be acted upon or relied upon by any person who is not a Relevant Person. Any investment or investment activity to which this prospectus relates is available only to Relevant Persons and will be engaged in only with Relevant Persons. This prospectus and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other person that is not a Relevant Person.

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The placement agents have represented, warranted and agreed that:

- (a) they have only communicated or caused to be communicated and will only communicate or cause to be communicated any invitation or inducement to engage in investment activity (within the meaning of section 21 of the FSMA in connection with the issue or sale of any of the shares of common stock in circumstances in which section 21(1) of the FSMA does not apply to the issuer; and
- (b) they have complied with and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares of common stock in, from or otherwise involving the United Kingdom.

LEGAL MATTERS

The validity of the issuance of shares of common stock offered hereby will be passed upon for us by Pillsbury Winthrop Shaw Pittman LLP, Palo Alto, California. Ellenoff Grossman & Schole LLP, New York, New York is acting as counsel for the placement agents in connection with this offering.

EXPERTS

The consolidated financial statements of MoSys, Inc. as of December 31, 2017 and 2016 and for each of the three years in the period ended December 31, 2017, incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2017, have been so incorporated in reliance on the report of BPM 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 were founded in 1991 and reincorporated in Delaware in September 2000. Our website address is www.mosys.com. The information in our website is not incorporated by reference into this report. Through a link on the Investor section of our website, we make available our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as soon as reasonably practicable after they are filed with, or furnished to, the Securities and Exchange Commission, or SEC. You can also read and obtain copies of any materials we file with the SEC at the SEC's Public Reference Room at 450 Fifth Street, NW, Washington, DC 20549. You can obtain additional information about the operation of the Public Reference Room by calling the SEC at 1.800.SEC.0330. In addition, the SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including us.

This prospectus is part of a registration statement on Form S-1 that we filed with the SEC, of which this prospectus is a part, under the Securities Act, with respect to the shares of common stock offered hereby. This prospectus omits some information contained in the registration statement in accordance with SEC rules and regulations. You should review the information and exhibits in the registration statement for further information about us and the securities being offered hereby. Statements in this prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to the filings. You should review the complete document to evaluate these statements.

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INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference the information we file with them, which means that we can disclose important information by referring you to those documents. The information incorporated by reference is considered to be part of the accompanying prospectus, and information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below:

- (a) our Annual Report on Form 10-K for the fiscal year ended December 31, 2017, filed with the SEC on March 12, 2018;
- (b) our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2017, filed with the SEC on August 10, 2017;
- (c) our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2018, filed with the SEC on May 11, 2018;
- (d) our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2018, filed with the SEC on August 8, 2018;
- (e) our Current Report on Form 8-K filed with the SEC on February 27, 2018, other than item 2.01 and exhibit 99.1 thereof;
- (f) our Current Report on Form 8-K filed with the SEC on August 17, 2018;
- (g) our Current Report on Form 8-K filed with the SEC on August 29, 2018;
- (h) our Current Report on Form 8-K filed with the SEC on September 17, 2018; and
- (i) the description of our capital stock set forth in our Registration Statement on Form 8-A, filed with the SEC on June 26, 2001, as amended by Amendment No. 2 to Registration Statement on Form 8-A/A, filed with the SEC on November 12, 2010, Amendment No. 3 on Form 8-A/A, filed on July 27, 2011, and Amendment No. 4 on Form 8-A/A, filed on May 24, 2012.

In addition, all filed information contained in reports and documents filed with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act subsequent to the date of filing the registration statement that includes the accompanying prospectus and prior to the filing of a post-effective amendment to the registration statement containing the accompanying prospectus, which indicates that all securities offered have been sold or which deregisters all of such securities then remaining unsold, shall be deemed to be incorporated by reference in this prospectus. Any statement contained herein or in a document incorporated or deemed to be incorporated by reference herein shall be

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deemed to be modified or superseded for purposes hereof to the extent that a statement contained herein or in any other subsequently filed document which is also incorporated or deemed to be incorporated herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

MoSys, Inc.

2309 Bering Drive

San Jose, CA 95131

(408) 418-7500

Attention: Chief Financial Officer

In addition, you may obtain a copy of these filings from the SEC as described in the section entitled [Where You Can Find More Information](#).

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Up to 3,037,975 Common Units (each Common Unit contains one Share of Common Stock, one Warrant to purchase three quarters of one Share of Common Stock, and one Pre-funded Warrant to purchase a number of additional Shares of Common Stock based on a purchase price adjustment determinable thereunder)

and

Up to 12,167,301 Pre-Funded Units (each Pre-Funded Unit contains one Pre-funded Warrant to purchase one Share of Common Stock and a number of additional Shares of Common Stock based on a purchase price adjustment determinable thereunder, and one Warrant to purchase three quarters of one Share of Common Stock)

and

Shares of Common Stock Underlying the Warrants and

Shares of Common Stock Underlying the Pre-funded Warrants

PROSPECTUS

Lead Placement Agent

Roth Capital Partners

Co-Placement Agent

The Benchmark Company

, 2018

Table of Contents**PART II****INFORMATION NOT REQUIRED IN THE PROSPECTUS****Item 13. Other Expenses of Issuance and Distribution.**

The following table sets forth the estimated costs and expenses payable by the registrant in connection with the offering of the securities being registered.

SEC registration fee	\$ 2,615
FINRA filing fee	2,000
Accounting fees and expenses	50,000
Legal fees and expenses	255,000
Printing and miscellaneous expenses	70,385
Total	\$380,000

Item 14. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law, or the DGCL, authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities (including reimbursement for expenses incurred) arising under the Securities Act.

As permitted by the DGCL, our bylaws provide that we shall indemnify our directors and officers, and may indemnify our employees and other agents, to the fullest extent permitted by law. The bylaws also permit us to secure insurance on behalf of any officer, director, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability arising out of his or her actions in that capacity if he or she is serving at our request. We have obtained officer and director liability insurance with respect to liabilities arising out of various matters, including matters arising under the Securities Act.

We have entered into agreements with our directors that, among other things, indemnify them for certain expenses (including attorneys' fees), judgments, fines and settlement amounts incurred by them in any action or proceeding, including any action by us or in our right, arising out of the person's services as a director or officer of ours or any other company or enterprise to which the person provides services at our request.

Item 15. Recent Sales of Unregistered Securities

On July 6, 2017, we sold warrants to purchase an aggregate of 662,500 shares of our common stock to purchasers of shares of our common stock in a concurrent public offering of registered shares of common stock on Form S-3. The warrants and the shares of our common stock issuable upon the exercise of the warrants were not registered under the Securities Act, pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and Rule 506(b). Our total proceeds from the sale were \$2,252,500, less expenses of \$113,822, and payments to the placement agent, Roth Capital Partners, LLC, of \$160,150 for placement fees and reimbursement of selling commissions and expenses.

On August 23, 2016, we accepted for cancellation exchanged options to purchase an aggregate of 4,569,959 shares of common stock and issued from the Amended and Restated 2010 Equity Incentive Plan replacement options covering 3,340,273 shares of common stock. The exchange was effected pursuant to the exemption from registration provided under Section 3(a)(9) of the Securities Act of 1933, as amended. The option exchange resulted in a net reduction in the number of shares underlying our outstanding derivative equity securities of 1,229,686.

On March 14, 2016, we entered into a 10% Senior Secured Convertible Note Purchase Agreement with the purchaser of \$8,000,000 principal amount of 10% Senior Secured Convertible Notes due August 15, 2018, at par, in a private placement transaction effected pursuant to an exemption from the registration requirements under the Securities Act of 1933 pursuant to Section 4(a)(2) thereof. Pursuant to an amendment to the Notes and related documents effective February 18, 2018, the interest rate has been reduced to 8% and the maturity date of the Notes has been extended to August 15, 2019.

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Item 16.

Reference is hereby made to the attached Exhibit Index, which is incorporated herein by reference.

Item 17. Undertakings.

The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933.

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the Calculation of Registration Fee table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

Provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) above do not apply if the registration statement is on Form S-1, Form S-3, Form SF-3 or Form F-3 and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment 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.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use; or

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

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The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(6) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement 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.

(7) The undersigned registrant hereby undertakes to supplement the prospectus, after the expiration of the subscription period, to set forth the results of the subscription offer, the transactions by the underwriters during the subscription period, the amount of unsubscribed securities to be purchased by the underwriters, and the terms of any subsequent reoffering thereof. If any public offering by the underwriters is to be made on terms differing from those set forth on the cover page of the prospectus, a post-effective amendment will be filed to set forth the terms of such offering.

(8) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the provisions described in Item 15 above, 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 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 Act and will be governed by the final adjudication of such issue.

(9) The undersigned registrant hereby undertakes that:

- (i) For purposes of determining any liability under the Securities Act of 1933, 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.

(ii) For the purpose of determining any liability under the Securities Act of 1933, 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.

Table of Contents**EXHIBIT INDEX****EXHIBIT**

NUMBER	DESCRIPTION
3.1(1)	<u>Restated Certificate of Incorporation of the Registrant</u>
3.1.1(1A)	<u>Certificate of Amendment to Restated Certificate of Incorporation of the Registrant</u>
3.2(2)	<u>Amended and Restated Bylaws of the Registrant</u>
4.1(3)	<u>Specimen Common Stock Certificate</u>
4.4(4)	<u>Rights Agreement, dated November 10, 2010, by and between Registrant and Wells Fargo Bank, N.A., as Rights Agent</u>
4.4.1(4)	<u>Form of Right Certificate</u>
4.4.2(4)	<u>Summary of Rights to Purchase Shares</u>
4.4.3(5)	<u>Amendment No. 1 to Rights Agreement, dated July 22, 2011, by and between Registrant and Wells Fargo Bank, N.A. as Rights Agent</u>
4.4.4(6)	<u>Amendment No. 2 to Rights Agreement, dated May 18, 2012, by and between Registrant and Wells Fargo Bank, N.A. as Rights Agent</u>
4.5(7)	<u>Form of Common Stock Purchase Warrant dated July 6, 2017</u>
4.6**	<u>Form of Common Stock Purchase Warrant</u>
4.7**	<u>Form of Pre-Funded Warrant</u>
5.1**	<u>Opinion of Pillsbury Winthrop Shaw Pittman LLP</u>
10.1(3)	<u>Form of Indemnity Agreement between Registrant and each of its directors and executive officers</u>
10.2(8)	<u>Placement Agency Agreement</u>
10.3(9)*	<u>Amended and Restated 2000 Stock Option and Equity Incentive Plan</u>
10.4(10)*	<u>Form of Stock Option Agreement pursuant to Amended and Restated 2000 Stock Option and Equity Incentive Plan</u>
10.5(11)*	<u>Form of New Employee Inducement Grant Stock Option Agreement</u>
10.6(12)*	<u>Employment offer letter agreement and Mutual Agreement to Arbitrate between Registrant and Leonard Perham dated as of November 8, 2007</u>
10.7(13)	<u>Form of Securities Purchase Agreement dated June 30, 2017</u>
10.8(14)*	<u>Employment offer letter agreement between Registrant and James Sullivan dated December 21, 2007</u>
10.9(15)*	<u>Amended and Restated 2010 Equity Incentive Plan</u>
10.10(16)*	<u>Form of Option Agreement for Stock Option Grant pursuant to 2010 Equity Incentive Plan</u>
10.11(17)*	<u>2010 Employee Stock Purchase Plan</u>

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10.12(18)	<u>Lease Agreement between Registrant and M West Propco XII, LLC. dated July 19, 2010</u>
10.13(19)*	<u>Form of Notice of Restricted Stock Unit Award and Agreement</u>
10.14(20)	<u>Lease Termination Agreement with M West Propco XII LLC dated October 3, 2017</u>
10.15(21)	<u>Sublease Agreement with Cyren, Inc. dated October 3, 2017</u>
10.16(22)	<u>Amendment to 10% Senior Secured Convertible Note Purchase Agreement and every 10% Senior Secured Convertible Note due August 15, 2018 Issued Thereunder</u>
10.17(23)*	<u>Offer to Exchange Certain Outstanding Stock Options for a Number of Replacement Stock Options</u>
10.18(24)*	<u>Form of New Employee Inducement Grant Stock Option Agreement (revised February 2012)</u>
10.19(25)*	<u>Form of Indemnification Agreement used from June 5, 2012</u>
10.20(26)*	<u>Form of Notice of Grant of Restricted Stock Unit Award and Agreement under the Amended and Restated 2010 Equity Incentive Plan</u>
10.21(27)*	<u>Employment Offer Letter Agreement between Registrant and John Monson dated February 21, 2012</u>
10.22(28)	<u>10% Senior Secured Convertible Note Purchase Agreement</u>
10.23(29)	<u>Security Agreement</u>
10.24(30)	<u>10% Senior Secured Convertible Note due August 15, 2018</u>
10.25(31)*	<u>Executive Change-in-Control and Severance Policy</u>
10.26**	<u>Form of Securities Purchase Agreement</u>
10.27**	<u>Form of Placement Agency Agreement</u>
10.28*,**	<u>Employment offer letter agreement between Registrant and Daniel Lewis dated August 8, 2018</u>
10.29**	<u>Memorandum of Understanding for modification of 10% Senior Secured Convertible Notes</u>
23.1**	<u>Consent of Independent Registered Public Accounting Firm BPM LLP</u>
23.2**	<u>Consent of Pillsbury Winthrop Shaw Pittman LLP (included in Exhibit 5.1)</u>
24	<u>Power of Attorney (filed as part of signature page to Registration Statement)</u>

* Management contract, compensatory plan or arrangement.

** Filed herewith.

(1) Incorporated by reference to Exhibit 3.6 to Form 8-K filed by the Registrant on November 12, 2010 (Commission File No. 000-32929).

(1A) Incorporated by reference to Exhibit 3.1 to Form 8-K filed by the Registrant on February 14, 2017 (Commission File No. 000-32929).

(2) Incorporated by reference to Exhibit 3.4 to Form 8-K filed by the Registrant on October 29, 2008 (Commission File No. 000-32929).

(3) Incorporated by reference to the same-numbered exhibit to the Registration Statement on Form S-1, as amended, originally filed by the Registrant with the SEC on August 4, 2000, declared effective June 27, 2001 (Commission File No. 333-43122).

(4) Incorporated by reference to the same-numbered exhibit to Form 8-K by the Registrant on November 12, 2010 (Commission File No. 000-32929).

- (5) Incorporated by reference to Exhibit 4.2.3 to the Current Report on Form 8-K, filed by the Registrant on July 27, 2011 (Commission File No. 000-32929).

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- (6) Incorporated by reference to Exhibit 4.2.4 to the Current Report on Form 8-K, filed by the Registrant on May 24, 2012 (Commission File No. 000-32929).
- (7) Incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K, filed by the Registrant on June 30, 2017 (Commission File No. 000-32929).
- (8) Incorporated by reference to the same-numbered exhibit to Form 8-K by the Registrant on June 30, 2017 (Commission File No. 000-32929).
- (9) Incorporated by reference to Appendix B to the Registrant's proxy statement on Schedule 14A filed by the Registrant on October 7, 2004 (Commission File No. 000-32929).
- (10) Incorporated by reference to Exhibit 10.15 to Form 10-Q filed by the Registrant on August 9, 2005 (Commission File No. 000-32929).
- (11) Incorporated by reference to Exhibit 10.25 to Form 10-K filed by the Registrant on March 17, 2008 (Commission File No. 000-32929).
- (12) Incorporated by reference to Exhibit 10.24 to Form 10-K filed by the Registrant on March 17, 2008 (Commission File No. 000-32929).
- (13) Incorporated by reference to the Exhibit 10.1 to Form 8-K by the Registrant on June 30, 2017 (Commission File No. 000-32929).
- (14) Incorporated by reference to Exhibit 10.26 to Form 10-K filed by the Registrant on March 17, 2008 (Commission File No. 000-32929).
- (15) Incorporated by reference to Exhibit 4.8 to Form S-8 filed by the Registrant on August 8, 2014 (Commission File No. 000-197989).
- (16) Incorporated by reference to Exhibit 4.10 to Form S-8 filed by the Registrant on July 28, 2010 (Commission File No. 333-168358).
- (17) Incorporated by reference to Appendix B to the proxy statement on Schedule 14A filed by the Registrant on May 26, 2010 (Commission File No. 000-32929).
- (18) Incorporated by reference to Exhibit 10.35 to Form 8-K filed by the Registrant on July 22, 2010 (Commission File No. 000-32929).
- (19) Incorporated by reference to Exhibit 4.8 to Form S-8 filed by the Registrant on June 5, 2009 (Commission File No. 333-159753).
- (20) Incorporated by reference to Exhibit 99.1 to Form 10-Q filed by the Registrant on November 14, 2017 (Commission File No. 000-32929).
- (21) Incorporated by reference to Exhibit 99.2 to Form 10-Q filed by the Registrant on November 14, 2017 (Commission File No. 000-32929).
- (22) Incorporated by reference to Exhibit 10.4 to Form 8-K filed by the Registrant on February 27, 2018 (Commission File No. 000-32929).
- (23) Incorporated by reference to Exhibit 99(A)(1)(A) to Schedule TO filed by the Registrant on July 26, 2016 (Commission File No. 005-78033), as amended).
- (24) Incorporated by reference to Exhibit 10.19 to Form 10-K filed by the Registrant on March 15, 2012 (Commission File No. 000-32929).
- (25) Incorporated by reference to Exhibit 10.22 to Form 10-Q filed by the Registrant on August 9, 2012 (Commission File No. 000-32929).
- (26) Incorporated by reference to Exhibit 10.24 to Form 10-K filed by the Registrant on March 14, 2014 (Commission File No. 000-32929).
- (27) Incorporated by reference to Exhibit 10.25 to Form 10-K filed by the Registrant on March 14, 2014 (Commission File No. 000-32929).
- (28) Incorporated by reference to Exhibit 10.1 to Form 8-K filed by the Registrant on March 15, 2016 (Commission File No. 000-32929).
- (29) Incorporated by reference to Exhibit 10.2 to Form 8-K filed by the Registrant on March 15, 2016 (Commission File No. 000-32929).

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- (30) Incorporated by reference to Exhibit 10.3 to Form 8-K filed by the Registrant on March 15, 2016 (Commission File No. 000-32929 (Commission File No. 333-159753)).
- (31) Incorporated by reference to Exhibit 99(D)(7) to Schedule TO filed by the Registrant on July 26, 2016 (Commission File No. 005-78033), as amended).

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Pursuant to the requirements of the Securities Act, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Jose, State of California, on September 17, 2018.

MOSYS, INC

By: /s/ Daniel Lewis
 Daniel Lewis
 Chief Executive Officer, President and
 Director (principal executive officer)

By: /s/ James W. Sullivan
 James W. Sullivan
 Vice President and Chief Financial
 Officer (principal accounting officer and
 principal financial officer)

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

SIGNATURE	TITLE	DATE
/s/ Daniel Lewis Daniel Lewis	Chief Executive Officer, President and Director (principal executive officer)	September 17, 2018
/s/ James W. Sullivan James W. Sullivan	Vice President and Chief Financial Officer (principal accounting officer and principal financial officer)	September 17, 2018
*	Director	September 17, 2018
Leonard Perham		
*	Director	September 17, 2018
Daniel O Neil		

*By: /s/ James W.Sullivan
 Attorney-in-fact