PACIFIC BIOSCIENCES OF CALIFORNIA, INC.
Form 10-Q
August 03, 2018

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2018

Or

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

For the transition period from to

Commission File Number 001-34899

Pacific Biosciences of California, Inc.

(Exact name of registrant as specified in its charter)

Delaware	16-1590339
(State or other jurisdiction of	(I.R.S. Employer
incorporation or organization)	Identification No.)
1305 O'Brien Drive	94025

Menlo Park, CA 94025
(Address of principal executive offices) (Zip Code)

(650) 521-8000

(Registrant's telephone number, including area code)

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

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

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

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

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

Number of shares outstanding of the issuer's common stock as of July 31, 2018: 131,941,955

Table of Contents

TABLE OF CONTENTS

2

Table of Contents

PART I. FINANCIAL INFORMATION

Item 1.Financial Statements

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Condensed Consolidated Balance Sheets

(Unaudited)

(in thousands, except per share amounts)	June 30, 2018	December 31, 2017
Assets		
Current assets		
Cash and cash equivalents	$ 23,058	$ 16,507
Investments	40,433	46,365
Accounts receivable	7,446	13,433
Inventory	23,440	23,065
Prepaid expenses and other current assets	2,035	2,249
Total current assets	96,412	101,619
Property and equipment, net	36,103	37,920
Long-term restricted cash	4,500	4,500
Other long-term assets	43	45
Total assets	$ 137,058	$ 144,084
Liabilities and Stockholders’ Equity		
Current liabilities		
Accounts payable	$ 4,169	$ 9,093
Accrued expenses	10,935	12,618
Deferred service revenue, current	6,416	6,319
Other liabilities, current	744	605
Total current liabilities	22,264	28,635
Deferred service revenue, non-current	1,053	1,075
Deferred rent, non-current	14,106	14,453
Notes payable, non-current	14,121	13,635
Financing derivative	40	183
Total liabilities	51,584	57,981
Commitments and contingencies		
Stockholders’ equity		

Preferred Stock, $0.001 par value:		
Authorized 50,000 shares; No shares issued or outstanding	—	—
Common Stock, $0.001 par value:		
Authorized 1,000,000 shares; Issued and outstanding 131,888 and 116,277 shares at June 30, 2018 and December 31, 2017, respectively	132	116
Additional paid-in-capital	1,011,621	965,752
Accumulated other comprehensive loss	(16)	(32)
Accumulated deficit	(926,263)	(879,733)
Total stockholders' equity	85,474	86,103
Total liabilities and stockholders' equity	$ 137,058	$ 144,084

See accompanying notes to the condensed consolidated financial statements.

Table of Contents

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Condensed Consolidated Statements of Operations and Comprehensive Loss

(Unaudited)

(in thousands, except per share amounts)	Three-Month Periods Ended June 30, 2018	2017	Six-Month Periods Ended June 30, 2018	2017
Revenue:				
Product revenue	$ 18,485	$ 16,548	$ 34,767	$ 37,842
Service and other revenue	3,093	3,525	6,173	7,146
Total revenue	21,578	20,073	40,940	44,988
Cost of revenue:				
Cost of product revenue	9,858	8,155	18,877	19,517
Cost of service and other revenue	2,858	3,917	5,905	8,533
Total cost of revenue	12,716	12,072	24,782	28,050
Gross profit	8,862	8,001	16,158	16,938
Operating expense:				
Research and development	15,664	16,883	31,975	33,854
Sales, general and administrative	14,943	15,505	29,877	30,770
Total operating expense	30,607	32,388	61,852	64,624
Operating loss	(21,745)	(24,387)	(45,694)	(47,686)
Interest expense	(598)	(826)	(1,179)	(1,664)
Other income (expense), net	(197)	(326)	154	(56)
Net loss	(22,540)	(25,539)	(46,719)	(49,406)
Other comprehensive loss:				
Unrealized income (loss) on investments	22	(13)	16	(21)
Comprehensive loss	$ (22,518)	$ (25,552)	$ (46,703)	$ (49,427)
Net loss per share:				
Basic and diluted net loss per share	$ (0.17)	$ (0.26)	$ (0.37)	$ (0.52)
Shares used in computing basic and diluted net loss per share	131,882	97,360	127,847	95,177

See accompanying notes to the condensed consolidated financial statements.

4

Table of Contents

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Condensed Consolidated Statements of Cash Flows

(Unaudited)

(in thousands)	Six-Month Periods Ended June 30, 2018	2017
Cash flows from operating activities		
Net loss	$ (46,719)	$ (49,406)
Adjustments to reconcile net loss to net cash used in operating activities		
Depreciation	3,611	4,839
Amortization of debt discount and financing costs	486	652
(Gain) Loss on derivative	(143)	485
Stock-based compensation	10,506	9,994
Other items	(194)	87
Changes in assets and liabilities		
Accounts receivable	5,987	1,896
Inventory	(560)	(2,240)
Prepaid expenses and other assets	337	6,368
Accounts payable	(4,765)	(1,944)
Accrued expenses	(1,683)	(2,266)
Deferred service revenue	75	(349)
Other liabilities	(208)	2,404
Net cash used in operating activities	(33,270)	(29,480)
Cash flows from investing activities		
Purchase of property and equipment	(1,700)	(6,116)
Disposal of property and equipment	—	12
Purchase of investments	(44,500)	(61,181)
Sales of investments	2,442	3,662
Maturities of investments	48,200	46,511
Net cash provided by (used in) investing activities	4,442	(17,112)
Cash flows from financing activities		
Proceeds from issuance of common stock from equity plans	2,517	6,231
Notes payable principal paying off	—	(4,500)
Proceeds from issuance of common stock from at-the-market equity offering, net of issuance costs	—	11,865
Proceeds from issuance of common stock from underwritten public equity offering, net of issuance costs	32,862	52,709
Net cash provided by financing activities	35,379	66,305

Net increase in cash and cash equivalents and restricted cash	6,551	19,713
Cash and cash equivalents and restricted cash at beginning of period	21,007	21,265
Cash and cash equivalents and restricted cash at end of period	$ 27,558	$ 40,978
Cash and cash equivalents at end of period	23,058	36,478
Restricted cash at end of period	4,500	4,500
Cash and cash equivalents and restricted cash at end of period	$ 27,558	$ 40,978
Supplemental disclosure of non-cash investing and financing activities		
Inventory transferred to property and equipment	$ 492	$ 608
Changes in unpaid property and equipment	$ 159	$ 3,323
Property and equipment paid by landlord	$ —	$ 12,600
Changes in deposits for property and equipment paid in prior period	$ —	$ 9,694
Property and equipment returned to landlord	$ —	$ 1,854

See accompanying notes to the condensed consolidated financial statements.

Table of Contents

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Notes to Condensed Consolidated Financial Statements

(Unaudited)

NOTE 1. OVERVIEW

We design, develop and manufacture sequencing systems to help scientists resolve genetically complex problems. Based on our novel Single Molecule, Real-Time (SMRT®) sequencing technology, our products enable: de novo genome assembly to finish genomes in order to more fully identify, annotate and decipher genomic structures; full-length transcript analysis to improve annotations in reference genomes, characterize alternatively spliced isoforms in important gene families, and find novel genes; targeted sequencing to more comprehensively characterize genetic variations; and real-time kinetic information for epigenome characterization. Our technology provides high accuracy, ultra-long reads, uniform coverage and the ability to simultaneously detect epigenetic changes. PacBio® sequencing systems, including consumables and software, provide a simple and fast end-to-end workflow for SMRT sequencing.

Our most advanced products offered today include the Sequel instrument and the Sequel SMRT Cell 1M, which together are capable of sequencing up to approximately one million DNA molecules simultaneously. We are continuously developing new products including what we refer to as the SMRT Cell 8M, which is designed to have up to eight times as much throughput capability as the current Sequel SMRT Cell 1M. We anticipate starting beta testing of the SMRT Cell 8M in early 2019 and launching this new product more broadly some months thereafter.

The names “Pacific Biosciences,” “PacBio,” “SMRT,” “SMRTbell,” “Sequel” and our logo are our trademarks.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation and Consolidation

In the opinion of management, our accompanying unaudited Condensed Consolidated Financial Statements (“Financial Statements”) have been prepared on a consistent basis with our December 31, 2017 audited Consolidated Financial Statements and include all adjustments, consisting of only normal recurring adjustments, necessary to fairly state the information set forth herein. The Financial Statements have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission (“SEC”) and, as permitted by such rules and regulations, omit certain information and footnote disclosures necessary to present the statements in accordance with accounting principles generally accepted in the United States (“U.S. GAAP”). These Financial Statements should be read in conjunction with the audited consolidated financial statements and notes thereto included in our Annual Report on Form 10-K for the year ended December 31, 2017. The results of operations for the three- and six- month periods ended June 30, 2018 are not necessarily indicative of the results to be expected for the entire year or any future periods.

The consolidated financial statements include the accounts of Pacific Biosciences and our wholly-owned subsidiaries. All intercompany transactions and balances have been eliminated. Translation adjustments resulting from translating foreign subsidiaries’ results of operations and assets and liabilities into U.S. dollars are immaterial for all periods presented.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes to the financial statements. Our estimates include, but are not limited to, the valuation of inventory, revenue valuation, the valuation of a financing derivative and long-term notes, the valuation and recognition of share-based compensation, the expected renewal period for service contracts, the useful lives assigned to long-lived assets, and the computation of provisions for income taxes. Actual results could differ materially from these estimates.

Fair Value of Financial Instruments

The carrying amount of our accounts receivable, prepaid expenses, other current assets, accounts payable, accrued expenses and other liabilities, current, approximate fair value due to their short maturities. The carrying value of our other liabilities, non-current, approximates fair value due to the time to maturity and prevailing market rates.

The fair value hierarchy established under U.S. GAAP requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The three levels of inputs that may be used to measure fair value are as follows:

- Level 1: quoted prices in active markets for identical assets or liabilities;
- Level 2: inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices in active markets for similar assets or liabilities, quoted prices for identical or similar assets or liabilities in markets that are

Table of Contents

not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and

- Level 3: unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

We consider an active market as one in which transactions for the asset or liability occurs with sufficient frequency and volume to provide pricing information on an ongoing basis. Conversely, we view an inactive market as one in which there are few transactions for the asset or liability, the prices are not current, or price quotations vary substantially either over time or among market makers. Where appropriate, our non-performance risk, or that of our counterparty, is considered in determining the fair values of liabilities and assets, respectively.

We classify our cash deposits and money market funds within Level 1 of the fair value hierarchy because they are valued using bank balances or quoted market prices. We classify our investments as Level 2 instruments based on market pricing and other observable inputs. We did not classify any of our investments within Level 3 of the fair value hierarchy.

Assets and liabilities measured at fair value are classified in their entirety based on the lowest level input that is significant to the fair value measurement. Our assessment of the significance of a particular input to the entire fair value measurement requires management to make judgments and consider factors specific to the asset or liability.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The following table sets forth the fair value of our financial assets and liabilities that were measured on a recurring basis as of June 30, 2018 and December 31, 2017 respectively (in thousands):

	June 30, 2018				December 31, 2017			
(in thousands)	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets								
Cash and cash equivalents:								
Cash and money market funds	$ 16,438	$ —	$ —	$ 16,438	$ 14,858	$ —	$ —	$ 14,858
Commercial paper	—	6,620	—	6,620	—	1,649	—	1,649
Total cash and cash equivalents	16,438	6,620	—	23,058	14,858	1,649	—	16,507
Investments:								
Commercial paper	—	22,062	—	22,062	—	20,394	—	20,394
Corporate debt securities	—	4,369	—	4,369	—	9,034	—	9,034
US government & agency securities	—	14,002	—	14,002	—	16,937	—	16,937
Total investments	—	40,433	—	40,433	—	46,365	—	46,365
Long-term restricted cash:								

Cash	4,500	—	—	4,500	4,500	—	—	4,500
Total assets measured at fair value	$ 20,938	$ 47,053	$ —	$ 67,991	$ 19,358	$ 48,014	$ —	$ 67,372
Liabilities								
Financing derivative	$ —	$ —	$ 40	$ 40	$ —	$ —	$ 183	$ 183
Total liabilities measured at fair value	$ —	$ —	$ 40	$ 40	$ —	$ —	$ 183	$ 183

The estimated fair value of the Financing Derivative liability was determined using Level 3 inputs, or significant unobservable inputs.

During the six-month period ended June 30, 2018, there were no transfers between Level 1, Level 2, or Level 3 assets or liabilities reported at fair value on a recurring basis and our valuation techniques did not change compared to the prior year.

Financial Assets and Liabilities Not Measured at Fair Value on a Recurring Basis

We determined the fair value of the Notes from the debt facility that we entered into during the first quarter of 2013 using Level 3 inputs, or significant unobservable inputs. The value of the Notes was determined by comparing the difference between the fair value of the Notes with and without the Financing Derivative by calculating the respective present values from future cash flows using 9.3% and 10.3% weighted average market yield at June 30, 2018 and December 31, 2017, respectively. Refer to “Note 5. Notes Payable” for additional details regarding the Notes. The estimated fair value and carrying value of the Notes are as follows (in thousands):

Table of Contents

The estimated fair value and carrying value of the Notes are as follows (in thousands):

	June 30, 2018		December 31, 2017	
	Fair Value	Carrying Value	Fair Value	Carrying Value
Notes payable	$ 15,939	$ 14,121	$ 15,664	$ 13,635

Net Loss per Share

The following outstanding common stock options, restricted stock units, or “RSUs”, with time-based vesting and RSUs with performance-based vesting were excluded from the computation of diluted net loss per share for the periods presented because including them would have had an anti-dilutive effect. See “Note 7. Stockholders’ Equity” for detailed information on RSUs with time-based vesting and RSUs with performance-based vesting

	Six Months Ended June 30,	
(in thousands)	2018	2017
Options to purchase common stock	28,601	25,592
RSUs with time-based vesting	355	—
RSUs with performance-based vesting	652	—

Concentration and Other Risks

For the three- and six- month periods ended June 30, 2018, one of our customers, Gene Company Limited, accounted for approximately 33% and 31% of our total revenue, respectively. For the three- and six- month periods ended June 30, 2017, the same customer, Gene Company Limited, accounted for approximately 26% and 28% of our total revenue, respectively. Gene Company Limited is our distributor in China.

Going Concern

Cash, cash equivalents and investments, excluding restricted cash, at June 30, 2018 totaled $63.5 million, compared to $62.9 million at December 31, 2017. We believe that our existing cash, cash equivalents and investments will be sufficient to fund our projected operating requirements for at least twelve months from the filing of this Quarterly Report on Form 10-Q; however, we may need to raise additional capital in the future. Our view regarding sufficiency of cash and liquidity is primarily based on our operating plans and financial forecast for 2018, which includes various assumptions regarding demand for our products.

Factors that may affect our capital needs include, but are not limited to, slower than expected adoption of our products resulting in lower sales of our products and services; future acquisitions; our ability to obtain new collaboration, distribution and customer arrangements; the progress of our research and development programs; initiation or expansion of research programs and collaborations; litigation costs, including the costs involved in preparing, filing, prosecuting, defending and enforcing intellectual property rights; the purchase of patent licenses; and other factors.

To the extent we raise additional funds through the sale of equity or convertible debt securities, the issuance of such securities will result in dilution to our stockholders. There can be no assurance that such funds will be available on favorable terms, or at all, particularly in light of restrictions under our debt agreement. If adequate funds are not available, we may be required to obtain funds by entering into collaboration, licensing or debt agreements on unfavorable terms. If we are unable to raise funds on favorable terms, or at all, we may have to reduce our cash burn rate and may not be able to support our commercialization efforts, or to increase or maintain the level of our research and development activities. If we are unable to generate sufficient cash flows or to raise adequate funds to finance our forecasted expenditures, we may have to make significant changes to our operations, including delaying or reducing the scope of or eliminating some or all of our development programs. We also may have to reduce sales, marketing, engineering, customer support or other resources devoted to our existing or new products or cease operations. If our cash, cash equivalents and investments are insufficient to fund our projected operating requirements, and we are unable to raise capital, it would have a material adverse effect on our business, financial condition and results of operations.

Significant Accounting Policies

Except as noted below relating to our adoption of ASC 606, there have been no material changes to our significant accounting policies as discussed in our Annual Report on Form 10-K for the year ended December 31, 2017.

Table of Contents

Recent Accounting Pronouncements

Recently Issued Accounting Standards

In June 2018, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, 2018-07, Improvements to Nonemployee Share-Based Payment Accounting, to simplify the accounting for nonemployee share-based payment transactions by expanding the scope of Accounting Standards Codification, or ASC, Topic 718, Compensation - Stock Compensation, to include share-based payment transactions for acquiring goods and services from nonemployees. Under the new standard, most of the guidance on stock compensation payments to nonemployees would be aligned with the requirements for share-based payments granted to employees. This standard is effective for annual reporting periods beginning after December 15, 2018, including interim reporting periods within those annual reporting periods, with early adoption permitted. We expect to adopt this standard beginning in 2019. While we continue to assess the potential impact of this standard, we do not expect the adoption of this standard to have a material impact on our condensed consolidated financial statements.

In February 2018, the FASB issued ASU 2018-02, Income Statement – Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income, that allows for an entity to elect to reclassify the income tax effects on items within accumulated other comprehensive income resulting from U.S. tax reform to retained earnings. The guidance is effective for fiscal years beginning after December 15, 2018 with early adoption permitted, including interim periods within those years. We are currently evaluating the impact of this standard on our Consolidated Financial Statements and whether we will make the allowed election.

In February 2016, the FASB issued ASU 2016-02, Leases. The guidance in ASU 2016-02 supersedes the lease recognition requirements in ASC Topic 840, Leases. ASU 2016-02 requires an entity to recognize assets and liabilities arising from a lease for both financing and operating leases, along with additional qualitative and quantitative disclosures. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, with early adoption permitted. We are currently evaluating the impact of the adoption of this standard on our consolidated financial statements. We expect to adopt this standard beginning in 2019. We do not expect that this standard will have a material impact on our operating results, but we do expect that upon adoption, it will have a material impact on our assets and liabilities. The primary effect of adoption will be the requirement to record right-of-use assets and corresponding lease obligations for current operating leases. We are currently quantifying the impact of adoption.

Recently Adopted Accounting Standards

In November 2016, the FASB issued ASU 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash, which requires restricted cash to be presented with cash and cash equivalents on the statement of cash flows and disclosure of how the statement of cash flows reconciles to the balance sheet if restricted cash is shown separately from cash and cash equivalents on the balance sheet. ASU 2016-18 is effective for interim and annual periods beginning after December 15, 2017, with early adoption permitted. We adopted this standard effective January 1, 2018 using the retrospective transition method by restating our condensed consolidated statements of cash flows to include restricted cash of $4.5 million in the beginning and ending cash, cash equivalents, and restricted cash balances for all periods presented. As a result of adoption, net cash flows for the six months ended June 30, 2017 did not change as a result of including restricted cash with cash and cash equivalents when reconciling the beginning-of-period and end-of-period amounts presented on the statements of cash flows.

In May 2014, the FASB issued ASU No. 2014-09, “Revenue from Contracts with Customers (Topic 606)” as modified by subsequently issued ASUs 2015-14, 2016-08, 2016-10, 2016-12 and 2016-20 (collectively ASC 606). ASC 606 superseded existing revenue recognition standards with a single model unless those contracts are within the scope of other standards, such as leases, insurance, collaboration arrangements and financial instruments. The revenue recognition principle in ASC 606 is that an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of Topic 606, the entity performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. On January 1, 2018, we adopted ASC 606 using the modified retrospective method with the cumulative effect of adoption recognized as an adjustment to our accumulated deficit on January 1, 2018. Prior period financial statements and disclosures have not been restated and continue to be reported under the accounting standards in effect for those periods. The adoption of ASC 606 did not have a material impact on our condensed consolidated financial position, results of operations, equity or cash flows as of the adoption date or for the three-and six- month periods ended June 30, 2018. In addition, the standard requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers.

Upon adopting ASC 606, the incremental direct costs of obtaining a contract are now deferred and amortized over the period of contract performance or a longer period if renewals are expected and the renewal commission is not commensurate with the

Table of Contents

initial commission. We classify deferred commissions as current and included it in “Prepaid expenses and other current assets” in our condensed consolidated balance sheets.

The cumulative effect of the changes made to our consolidated January 1, 2018 balance sheet for the adoption of ASC 606 was as follows (in thousands):

Balance Sheet	Balance at December 31, 2017	Adjustments Due to ASC 606	Balance at January 1, 2018
Assets			
Prepaid expenses and other current assets	$ 2,249	$ 189	$ 2,438
Liabilities and Stockholders' Equity			
Accumulated deficit	(879,733)	189	(879,544)

In accordance with ASC 606, the disclosure of the impact of adoption on our condensed consolidated statement of operations and comprehensive loss, condensed consolidated balance sheets, and condensed consolidated statements of cash flows for the three- and six- month periods ended June 30, 2018 was as follows (in thousands):

	For the three-month period ended June 30, 2018			For the six-month period ended June 30, 2018		
Statement of Operations and Comprehensive Loss	As Reported	Balances Without Adoption of ASC606	Effect of Change Higher/(Lower)	As Reported	Balances Without Adoption of ASC606	Effect of Change Higher/(Lower)
Operating Expense:						
Sales, general and administrative	$ 14,943	$ 14,963	$ (20)	$ 29,877	$ 29,912	$ (35)

	As of June 30, 2018		
Balance Sheet	As Reported	Balances Without Adoption of ASC606	Effect of Change Higher/(Lower)
Assets			
Prepaid expenses and other current assets	$ 2,035	$ 1,812	$ 223
Liabilities and Stockholders' Equity			

Accumulated deficit	$ (926,263)	$ (926,040)	$ 223

	For the six-month period ended June 30, 2018		
Statement of Cash Flows	As Reported	Balances Without Adoption of ASC606	Effect of Change Higher/(Lower)
Cash Flows from Operating Activities			
Net loss	$ (46,719)	$ (46,754)	$ 35
Adjustments to reconcile net loss to net cash used in operating activities			
Prepaid expenses and other current assets	$ 337	$ 302	$ 35

At June 30, 2018, we had $0.2 million of deferred commissions included in “Prepaid expenses and other current assets” which will be recognized as the related revenue is recognized. Additionally, as a practical expedient, we expense costs to obtain a contract as incurred if the amortization period would have been a year or less.

Table of Contents

A summary of our revenue by category for the three-and six-month periods ended June 30, 2018 and 2017 is as follows (in thousands):

	Three-month periods ended June 30,		Six-month periods ended June 30,	
(in thousands)	2018	2017 (1)	2018	2017 (1)
Instrument revenue	$ 8,525	$ 7,119	$ 15,669	$ 19,752
Consumable revenue	9,960	9,429	19,098	18,090
Product revenue	18,485	16,548	34,767	37,842
Service and other revenue	3,093	3,525	6,173	7,146
Total revenue	$ 21,578	$ 20,073	$ 40,940	$ 44,988

(1) As noted above, prior period amounts have not been adjusted under the modified retrospective method.

A summary of our revenue by geographic location for the three- and six-month periods ended June 30, 2018 and 2017 is as follows (in thousands):

	Three-month periods ended June 30,		Six-month periods ended June 30,	
	2018	2017 (1)	2018	2017 (1)
North America	$ 9,204	$ 10,227	$ 17,015	$ 21,012
Europe (including the Middle East and Africa)	3,687	2,909	7,700	7,233
Asia Pacific	8,687	6,937	16,225	16,743
Total	$ 21,578	$ 20,073	$ 40,940	$ 44,988

(1) As noted above, prior period amounts have not been adjusted under the modified retrospective method.

Our revenue is generated primarily from the sale of products and services. Product revenue primarily consists of sales of our instruments and related consumables; Service and other revenue consist primarily of revenue earned from product maintenance agreements with some additional revenue from instrument lease agreements and grant revenue.

We account for a contract with a customer when there is a legally enforceable contract between the Company and the customer, the rights of the parties are identified, the contract has commercial substance, and collectability of the contract consideration is probable. Revenues are recognized when control of the promised goods or services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services. Taxes we collect concurrent with revenue-producing activities are excluded from revenue.

Our instrument sales are generally sold in a bundled arrangement and commonly include the instrument, instrument accessories, installation, training, and consumables. Additionally, our instrument sale arrangements generally include a one-year period of service. For such bundled arrangements, we account for individual products and services separately if they are distinct, that is, if a product or service is separately identifiable from other items in the bundled package and if a customer can benefit from it on its own or with other resources that are readily available to the customer. Our customers cannot benefit from the system without installation, and installation can only be performed by us or qualified distributors. As a result, the system and installation are considered to be a single performance obligation recognized after installation is completed except for sales to qualified distributors, in which case the system is distinct and recognized when control has transferred to the distributor which typically occurs upon shipment.

The consideration for bundled arrangements is allocated between separate performance obligations based on their individual standalone selling price (“SSP”). The SSP is determined based on observable prices at which we separately sell the products and services. If an SSP is not directly observable, then we will estimate the SSP by considering multiple factors including, but not limited to, overall market conditions, including geographic or regional specific factors, internal costs, profit objectives, pricing practices and other observable inputs.

We recognize revenues as the performance obligations are satisfied by transferring control of the product or service to the customer or over the term of a product maintenance agreement with a customer. Our revenue arrangements generally do not provide

Table of Contents

a right of return.

Contract liabilities and contract assets - Contract liabilities primarily consist of deferred revenue. We record deferred service revenues when cash payments are received or due in advance of our performance for product maintenance agreements. Deferred service revenue is recognized over the related performance period, generally one to three years, on a straight-line basis as the Company is standing ready to provide services and a time-based measure of progress best reflects the satisfaction of the performance obligation. As of June 30, 2018, we had a total of $7.5 million of deferred service revenue from our service contracts, $6.4 million of which was recorded as “deferred service revenue, current” to be recognized over the next year and the remaining $1.1 million was recorded as “deferred service revenue, non-current” to be recognized in the next 2 to 4 years. Revenue recorded in the six months ended June 30, 2018 includes $4.2 million of previously deferred revenue that was included in “deferred service revenue, current” and “deferred service revenue, non-current”, respectively, as of December 31, 2017. Contract assets as of December 31, 2017 and June 30, 2018 were not material.

Instrument lease agreements - Instrument leases are generally classified as operating-type leases and revenue from these leases is recognized on a straight-line basis over the respective lease term, once the lessee takes (or has the right to take) control/possession of the property under the lease. Effectively, this occurs once the installation is complete and control of the instrument is transferred to our customers.

Other practical expedients and exemptions - Customers generally are invoiced upon acceptance of the system, which is also the start of the one-year service period. As such, there is typically not more than a one-year difference between the receipt of cash and the provision of services. Therefore, we apply the practical expedient and do not account for any potential significant financing benefit. However, it is noted that some customers will pre-order extended service periods at the time of the initial system sale. These customers may choose to make quarterly or annual payments or prepay multiple years of service upfront but there is no pricing difference between these different payment options. As such, no significant financing component is believed to exist with any of our existing arrangements.

Table of Contents

NOTE 3. CASH, CASH EQUIVALENTS AND INVESTMENTS

The following tables summarize our cash, cash equivalents and investments as of June 30, 2018 and December 31, 2017 (in thousands):

	As of June 30, 2018			
	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair Value
Cash and cash equivalents:				
Cash and money market funds	$ 16,438	$ —	$ —	$ 16,438
Commercial paper	6,621	—	(1)	6,620
Total cash and cash equivalents	23,059	—	(1)	23,058
Investments:				
Commercial paper	22,065	—	(3)	22,062
Corporate debt securities	4,375	—	(6)	4,369
US government & agency securities	14,008	—	(6)	14,002
Total investments	40,448	—	(15)	40,433
Total cash, cash equivalents and investments	$ 63,507	$ —	$ (16)	$ 63,491
Long-term restricted cash:				
Cash	$ 4,500	$ —	$ —	$ 4,500

	As of December 31, 2017			
	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair Value
Cash and cash equivalents:				
Cash and money market funds	$ 14,858	$ —	$ —	$ 14,858
Commercial paper	1,649	—	—	1,649
Total cash and cash equivalents	16,507	—	—	16,507
Investments:				
Commercial paper	20,408	—	(14)	20,394
Corporate debt securities	9,043	—	(9)	9,034
US government & agency securities	16,946	—	(9)	16,937
Total investments	46,397	—	(32)	46,365
Total cash, cash equivalents and investments	$ 62,904	$ —	$ (32)	$ 62,872
Long-term restricted cash:				
Cash	$ 4,500	$ —	$ —	$ 4,500

The following table summarizes the contractual maturities of our cash equivalents and available-for-sale investments, excluding money market funds, as of June 30, 2018:

(in thousands)	Fair Value
Due in one year or less	$ 47,053

Actual maturities may differ from contractual maturities because issuers may have the right to call or prepay obligations without call or prepayment penalties.

Table of Contents

NOTE 4. BALANCE SHEET COMPONENTS

Inventory

As of June 30, 2018 and December 31, 2017, our inventory consisted of the following components:

(in thousands)	June 30, 2018	December 31, 2017
Purchased materials	$ 6,877	$ 8,884
Work in process	10,358	9,994
Finished goods	6,205	4,187
Inventory	$ 23,440	$ 23,065

NOTE 5. NOTES PAYABLE

As of June 30, 2018, payments due under our notes payable, which include interest and principal, are as follows:

Years ending December 31,	Amount (in thousands)
Remaining of 2018	$ 702
2019	1,400
2020	16,491
Total remaining payments	18,593
Less: interest and discounts	(4,472)
Notes payable	$ 14,121

NOTE 6. COMMITMENTS AND CONTINGENCIES

As of June 30, 2018, the future annual minimum lease payments under all noncancelable operating leases with remaining term in excess of one year are as follows:

Years ending December 31,	Amount (in thousands)
Remaining of 2018	$ 3,420
2019	6,930
2020	7,056
2021	7,272
2022	7,488
Thereafter	39,222
Total minimum lease payments	$ 71,388

Rent expense for three- and six-month periods ended June 30, 2018 was $1.5 million and $3.1 million, respectively. Rent expense for three- and six-month periods ended June 30, 2017 was $1.6 million and $3.1 million, respectively;

Legal

USITC Proceedings

On November 2, 2016, we filed a complaint against Oxford Nanopore Technologies Ltd. (“ONT Ltd.”), Oxford Nanopore Technologies, Inc. (“ONT Inc.”) and Metrichor, Ltd. (“Metrichor” and, together with ONT Ltd. and ONT Inc., “ONT”) with the U.S. International Trade Commission (“USITC”) for patent infringement. On December 5, 2016, the USITC provided notice that an

Table of Contents

investigation had been instituted based on the complaint. We sought exclusionary relief with respect to several ONT products, including ONT's MinION and PromethION devices. The complaint was based on our U.S. Patent No. 9,404,146, entitled "Compositions and methods for nucleic acid sequencing" which covers novel methods for sequencing single nucleic acid molecules using linked double-stranded nucleic acid templates, providing improved sequencing accuracy. On March 1, 2017, we filed an amended complaint to add a second patent in the same patent family, U.S. Patent No. 9,542,527, which was granted on January 10, 2017, to the investigation. We sought, among other things, an exclusion order permanently barring entry of infringing ONT products into the United States, and a cease and desist order preventing ONT from advertising and selling infringing products in the United States. On May 23, 2017, the Administrative Law Judge ("ALJ") assigned to the matter issued an order construing certain claim terms of the asserted patents. On June 8, 2017, ONT filed a summary determination motion to terminate the proceedings based on the ALJ's claim construction decision, and we did not oppose the motion. The ALJ granted the motion on July 19, 2017, and, on July 31, 2017, we filed a petition to review with the USITC to correct what we believe was an incorrect construction of the claims. On September 5, 2017, the USITC issued a notice granting our petition to review the ALJ's claim construction decision. On February 7, 2018, the USITC issued a notice indicating that it had determined to adopt the ALJ's claim construction and terminating the investigation. On February 13, 2018, we filed a petition to appeal the USITC's ruling to the U.S. Court of Appeals for the Federal Circuit.

U.S. District Court Proceedings

On March 15, 2017, we filed a complaint in the U.S. District Court for the District of Delaware against ONT Inc. for patent infringement. The complaint is based on our U.S. Patent No. 9,546,400 (the "400 Patent"), entitled "Nanopore sequencing using n-mers" which covers novel methods for nanopore sequencing of nucleic acid molecules using the signals from multiple monomeric units. This patent was granted on January 17, 2017. We are seeking remedies including injunctive relief, damages and costs. On May 8, 2017, the defendants filed a motion to dismiss the complaint, alleging that the asserted patent claims recite patent ineligible subject matter. On November 9, 2017, the judge denied ONT Inc.'s motion to dismiss. On June 1, 2018, we filed a motion for leave to amend the complaint to add ONT Ltd. as a defendant.

Related to this proceeding, on March 15, 2018, ONT Inc. filed a petition to institute an inter partes review with the Patent Trial and Appeal Board ("PTAB") of the U.S. Patent and Trademark Office, alleging invalidity of the '400 Patent. On July 5, 2018, we filed a preliminary response outlining for the PTAB why the petition should be denied, and no review should be instituted.

On September 25, 2017, we filed a second complaint in the U.S. District Court for the District of Delaware against ONT Inc. for patent infringement. The complaint is based on our U.S. Patent No. 9,678,056 (the "056 Patent") entitled "Control of Enzyme Translation in Nanopore Sequencing", granted June 13, 2017, and U.S. Patent No. 9,738,929 entitled "Nucleic Acid Sequence Analysis", granted August 22, 2017. We are seeking remedies including injunctive relief, damages and costs. On December 14, 2017, the defendants filed a motion to dismiss the complaint, alleging that the asserted patent claims in the 9,738,929 patent recite patent ineligible subject matter. On March 22, 2018, the judge denied ONT Inc.'s motion to dismiss. On March 28, 2018, we added a claim for infringement of our U.S. Patent No. 9,772,323 (the "'323 Patent"), also entitled "Nanopore sequencing using n-mers." On April 25, 2018, ONT Inc. filed its answer, defenses and counterclaims, seeking declaratory judgements of non-infringement and invalidity of the asserted patents and unenforceability of the '056 and '323 patents based on alleged inequitable conduct before the U.S. Patent and Trademark Office, as well as antitrust, false advertising, and unfair competition counterclaims. On June 1, 2018, we filed a motion for leave to amend the complaint to add ONT Ltd. as a defendant. On June 15, 2018, we filed

a motion to dismiss ONT Inc.'s counterclaims and, on June 18, 2018, we filed a motion to bifurcate and stay discovery on ONT Inc.'s antitrust counterclaims.

A trial for the U.S. District Court matters is scheduled to occur in March 2020.

UK and German Court Proceedings

On February 2, 2017, we filed a claim in the High Court of England and Wales against ONT Ltd. and Metrichor for infringement of Patent EP(UK) 3 045 542 (the "'542 Patent"), which is in the same patent family as the patents asserted in the USITC action referred to above. We are seeking remedies including injunctive relief, damages, and costs. On March 27, 2017, the defendants in the case filed their defense and counterclaim, denying infringement and seeking a declaration that the asserted patent is invalid. We filed our reply and defense to counterclaim on April 12, 2017. A case management conference was held on June 13, 2017. On August 31, 2017 we added a claim for infringement of a newly granted divisional, EP(UK) 3 170 904 (the "'904 Patent"). On December 22, 2017, ONT Ltd. added to the action a request for declaration of non-infringement of its 1D2 product. On January 12, 2018 we served reply to ONT Ltd.'s request for a declaration of non-infringement, asserting infringement of both patents by ONT's 1D2 product. A trial for these matters was scheduled to occur in May 2018.

On April 21, 2017, ONT Ltd. and Harvard University filed a claim against us in the High Court of England and Wales for infringement of Patent EP(UK) 1 192 453 (the "'453 Patent"), a patent owned by Harvard University and entitled "Molecular and atomic scale evaluation of biopolymers," and for which ONT Ltd. alleges it holds an exclusive license. ONT Ltd. and Harvard University are seeking remedies including injunctive relief, damages, and costs. On April 25, 2017, ONT Ltd. announced that it also

Table of Contents

had filed a claim against us in the District Court of Mannheim, Germany, for infringement of the German version of the patent. On November 2, 2017, we filed our statement of defense in the German infringement matter and we also filed a separate nullity action in Germany to establish that the ‘453 Patent is invalid. On December 6, 2017, we filed a cross-complaint in the German infringement matter alleging ONT Ltd.’s infringement in Germany of our ‘542 Patent. The trial date for the German infringement matter and cross-complaint was set for July 27, 2018. A trial for the UK matter was scheduled to occur in March 2019.

On May 8, 2018, the parties entered a settlement of all UK and German court proceedings pending as of such date. Under the terms of the settlement, ONT agreed not to make, dispose of, use or import any “2D” nanopore sequencing products, or to induce or assist others to carry out a “2D” sequencing process, in the UK or Germany, through the end of 2023. During this time, we agreed not to assert the ‘542 Patent and ‘904 Patent against either ONT or its customers in the UK or Germany. Accordingly, the High Court of England and Wales entered an order staying our UK action against ONT through the end of 2023. As part of the settlement, ONT and Harvard University dismissed their UK and German actions under the ‘453 Patent and agreed not to assert the ‘453 Patent against us or our customers through the end of 2023. We correspondingly agreed to dismiss our separate German nullity action seeking to invalidate the ‘453 Patent, which expires on June 22, 2020.

Related to these proceedings, on August 15, 2017, ONT Ltd. filed a notice of opposition to our ‘542 Patent with the European Patent Office, and on August 16, 2017, an anonymous party filed a second notice of opposition to the same patent, each alleging invalidity of the patent. On April 5, 2018, we filed our response to the combined opposition. An oral hearing in the matter is scheduled for January 22, 2019.

Also related to these proceedings, on May 16, 2018, ONT Ltd. filed a notice of opposition to our ‘904 Patent with the European Patent Office alleging invalidity of the ‘904 Patent. We intend to file our response to the opposition prior the October 1, 2018 date for filing observations in the matter.

Litigation is inherently unpredictable, and it is too early in the proceedings to predict the outcome of these lawsuits or any impact they may have on us. As such, the estimated financial effect associated with these complaints cannot be made as of the date of filing of this Quarterly Report on Form 10-Q. Litigation is a significant ongoing expense with an uncertain outcome, and has been in the past and may in the future be a material expense for the Company. Management believes this investment is important to protect the Company’s intellectual property position, even recognizing the uncertainty of the outcome.

From time to time, we may also be involved in a variety of other claims, lawsuits, investigations and proceedings relating to securities laws, product liability, patent infringement, contract disputes, employment and other matters that arise in the normal course of our business. In addition, third parties may, from time to time, assert claims against us in the form of letters and other communications. We record a provision for contingent losses when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. We currently do not believe that the ultimate outcome of any of the matters described above is probable or reasonably estimable, or that these matters will have a material adverse effect on our business; however, the results of litigation and claims are inherently unpredictable. Regardless of the outcome, litigation can have an adverse impact on us because of litigation and settlement costs, diversion of management resources and other factors.

NOTE 7. STOCKHOLDERS' EQUITY

Underwritten Public Equity Offering

In August 2017, we filed a shelf registration statement on Form S-3 with the SEC pursuant to which we may, from time to time, sell up to an aggregate of $150.0 million of our common stock, preferred stock, depository shares, warrants, units or debt securities. On August 18, 2017, the registration statement was declared effective by the SEC, which allows us to access the capital markets for the three-year period following this effective date.

In February 2018, we entered into an underwriting agreement, relating to the public offering of 12,500,000 shares of our common stock, $0.001 par value per share, at a price to the public of $2.40 per share. Under the terms of the underwriting agreement, we also granted the Underwriters a 30-day option to purchase up to an additional 1,875,000 shares of our common stock, which was subsequently exercised in full, and the offering as well as the sale of shares of common stock subject to the Underwriters' option, closed in February 2018. In total, we sold 14.4 million shares of our common stock at a price of $2.40 per share. We paid a commission equal to 4% of the gross proceeds from the sale of shares of our common stock under the underwriting agreement. The total net proceeds to us from the offering after deducting the underwriting discount were approximately $33.1 million, which excludes approximately $0.3 million of offering expenses.

Subject to certain exceptions set forth in our Facility Agreement, holders of our Notes may elect to receive up to 25% of the net proceeds from financing activities that include an equity component as prepayment of the Notes to be applied first, to accrued and unpaid interest and second, to principal. However, in February 2018 holders representing a majority of the aggregate principal amount of the outstanding Notes waived such right in connection with the issuance and sale of shares of common stock in our public offering.

Table of Contents

Equity Plans

As of June 30, 2018, we had three active equity compensation plans: the 2010 Equity Incentive Plan ("2010 Plan"), the 2010 Outside Director Equity Incentive Plan ("2010 Director Plan"), and the 2010 Employee Stock Purchase Plan ("ESPP"). Under the 2010 Plan, with the approval of the Compensation Committee of the Board of Directors, we may grant restricted stock, RSU, stock appreciation rights and new shares of common stock upon exercise of stock options.

In January 2018, an additional 5.8 million shares were reserved under the 2010 Plan, an additional 1.2 million shares were reserved under the 2010 Director Plan and an additional 2.3 million shares were reserved under the ESPP.

Stock Options

The following table summarizes stock option activity for all our stock option plans for the six-month period ended June 30, 2018 (in thousands, except per share amounts):

		Stock Options Outstanding		
	Shares available for grant	Number of shares	Exercise price	Weighted average exercise price
Balances, December 31, 2017	6,795	25,404	$ 1.16 – 16.00	$ 6.10
Additional shares reserved	6,976			
Options granted	(4,141)	4,141	2.47 – 3.40	2.55
Options exercised	—	(123)	1.16 – 2.54	2.29
Options canceled	821	(821)	1.16 – 16.0	5.63
Balances, June 30, 2018	10,451	28,601	$ 1.16 – 16.00	$ 5.61

Restricted Stock Units, or "RSUs"

Time-based RSUs

Beginning in the three-month period ended March 31, 2018, the Compensation Committee of the Board of Directors has approved awards of RSUs with time-based vesting from the 2010 Plan to certain employees. Each RSU represents one equivalent share of our common stock to be awarded after the vesting period. These RSUs vest over four years at a rate of 25% annually. The fair value for these RSUs is based on the closing price of our common stock on the date of grant. We measure compensation expense for these RSUs at fair value on the date of grant and recognize the expense over the expected vesting period on a straight-line basis. The RSUs do not entitle participants to the rights of holders

of common stock, such as voting rights, until the shares are issued. For RSUs that vest, we withhold a number of shares of common stock equal in value to the amount of the minimum statutory tax withholding obligations that arise due to such vesting, and issue shares of common stock for the remainder of the vested amount. The settlement of vested RSUs on a net share basis results in fewer shares issued by us.

The following table summarizes the time-based RSUs activity for the six-month period ended June 30, 2018 (in thousands, except per share amounts):

	Number of shares	Weighted average grant date fair value
RSUs outstanding at December 31, 2017	—	$ —
RSUs granted	365	2.57
RSUs released	—	—
RSUs forfeited	(10)	2.54
Unvested RSUs outstanding at June 30, 2018	355	$ 2.57

For the three- and six-month period ended June 30, 2018, we recorded compensation expense of $54,000 and $73,000, respectively, related to time-based RSUs.

Performance-based RSUs

During the three-month period ended March 31, 2018, the Compensation Committee of the Board of Directors approved awards of RSUs with performance-based vesting from the 2010 Plan to certain employees. Each RSU represents one equivalent

Table of Contents

share of our common stock to be awarded upon vesting at the end of the performance periods, if specific performance goals set by the Compensation Committee of the Board of Directors are achieved. No RSUs with performance-based vesting will vest if the performance goals are not met. The fair value of these RSUs is based on the closing price of our common stock on the date of grant. We make a quarterly probability assessment as to whether the performance goals will be achieved. Changes in our assessment of the probability of vesting results in adjustments to stock-based compensation, which may include either a cumulative catch-up of expense or a reduction of expense depending on whether the likelihood of vesting has increased or decreased, that is recognized in the period such determination is made. The RSUs do not entitle participants to the rights of holders of common stock, such as voting rights, until the shares are issued. For RSUs that vest, we withhold a number of shares of common stock equal in value to the amount of the minimum statutory tax withholding obligations that arise due to such vesting, and issue shares of common stock for the remainder of the vested amount. The settlement of vested RSUs on a net share basis results in fewer shares issued by us.

The following table summarizes the performance-based RSUs activity for the six-month period ended June 30, 2018 (in thousands, except per share amounts):

	Number of shares	Weighted average grant date fair value
PSUs outstanding at December 31, 2017	—	$ —
PSUs granted	657	2.58
PSUs released	—	—
PSUs forfeited	(5)	2.54
Unvested PSUs outstanding at June 30, 2018	652	$ 2.58

For the three-and six-month period ended June 30, 2018, we recognized compensation expense of $162,000 and $252,000, respectively, related to performance-based RSUs.

ESPP shares

Shares issued under our ESPP totaled 1,113,790 and 750,005 shares during the six-month periods ended June 30, 2018 and 2017, respectively. As of June 30, 2018, 2,513,677 shares of our common stock remain available for issuance under our ESPP.

Stock-Based Compensation

The following table summarizes the stock-based compensation expense for stock options, RSUs and shares from the ESPP for the three-and six-month periods ended June 30, 2018 and 2017, respectively (in thousands):

	Three-Month Periods Ended June 30,		Six-Month Periods Ended June 30,	
	2018	2017	2018	2017
Cost of revenue	$ 633	$ 572	$ 1,297	$ 1,095
Research and development	2,229	2,029	4,451	4,060
Sales, general and administrative	2,362	2,408	4,758	4,839
Total stock-based compensation expense	$ 5,224	$ 5,009	$ 10,506	$ 9,994

We estimated the fair value of employee stock options on the grant date using the Black-Scholes option pricing model. The estimated fair value of employee stock options is amortized on a straight-line basis over the requisite service period of the awards. The fair value of employee stock options was estimated using the following weighted average assumptions:

	Three-Month Periods Ended June 30,		Six-Month Periods Ended June 30,	
Stock Option	2018	2017	2018	2017
Expected term in years	5.2	6.1	5.2	6.1
Expected volatility	65%	70%	67%	70%
Risk-free interest rate	2.8%	1.9%	2.5%	2.1%
Dividend yield	—	—	—	—

Table of Contents

We estimate the value of employee stock purchase rights on the grant date using the Black-Scholes option pricing model. The fair value of shares to be purchased under our ESPP was estimated using the following assumptions:

	Three-Month Periods Ended June 30,		Six-Month Periods Ended June 30,	
ESPP	2018	2017	2018	2017
Expected term in years	0.5-2.0	0.5-2.0	0.5-2.0	0.5-2.0
Expected volatility	67%	70%	67%	70%
Risk-free interest rate	1.9%-2.2%	0.8%-1.3%	1.9%-2.2%	0.8%-1.3%
Dividend yield	—	—	—	—

NOTE 8. SUBSEQUENT EVENT

On July 27, 2018, our Board of Directors appointed Mr. Christian O. Henry as a Class I director, to serve on the Board effective immediately. As such, Mr. Henry will be up for election in 2020 to serve an additional three years.

Table of Contents

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

You should read the following discussion and analysis of our financial condition and results of operations together with our condensed consolidated financial statements and the related notes included in this Quarterly Report on Form 10-Q and those in our Annual Report on Form 10-K for the year ended December 31, 2017. Some of the information contained in this discussion and analysis or set forth elsewhere in this report, including information with respect to our products, plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties, including statements regarding our expected financial results in future periods. The words "anticipates," "believes," "could," "estimates," "expects," "intends," "may," "might," "plans," "potential," "predicts," "projects," "target," "will," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. You should read the "Risk Factors" section of this Quarterly Report on Form 10-Q for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis. We do not assume any obligation to update any forward-looking statements.

Overview

We design, develop and manufacture sequencing systems to help scientists resolve genetically complex problems. Based on our novel Single Molecule, Real-Time (SMRT®) sequencing technology, our products enable: de novo genome assembly to finish genomes in order to more fully identify, annotate and decipher genomic structures; full-length transcript analysis to improve annotations in reference genomes, characterize alternatively spliced isoforms in important gene families, and find novel genes; targeted sequencing to more comprehensively characterize genetic variations; and real-time kinetic information for epigenome characterization. Our technology provides high accuracy, ultra-long reads, uniform coverage and the ability to simultaneously detect epigenetic changes. PacBio® sequencing systems, including consumables and software, provide a simple and fast end-to-end workflow for SMRT sequencing.

Our most advanced products offered today include the Sequel instrument and the Sequel SMRT Cell 1M, which together are capable of sequencing up to approximately one million DNA molecules simultaneously. We are continuously developing new products including what we refer to as the SMRT Cell 8M, which is designed to have up to eight times as much throughput capability as the current Sequel SMRT Cell 1M. We anticipate starting beta testing of the SMRT Cell 8M in early 2019 and launching this new product more broadly some months thereafter.

Basis of Presentation

Revenue

During the three-and six-month periods ended June 30, 2018 and 2017, product revenue was primarily derived from the sale of 1) Sequel instruments, and 2) consumables associated with Sequel and RSII instruments. Service and other revenue was primarily derived from product maintenance agreements sold on our installed instruments.

Cost of Revenue

Cost of revenue reflects the direct cost of product components, third-party manufacturing services and our internal manufacturing overhead and customer service infrastructure costs incurred to produce, deliver, maintain and support our instruments, consumables, and services. There are no incremental costs associated with our contractual revenue; all product development costs are reflected in research and development expense.

Manufacturing overhead is predominantly comprised of labor and facility costs. We determine and capitalize manufacturing overhead into inventory based on a standard cost model that approximates actual costs.

Service costs include the direct costs of components used in support, repair and maintenance of customer instruments as well as the cost of personnel, materials, shipping and support infrastructure necessary to support the installed customer base.

Research and Development Expense

Research and development expenses consist primarily of expenses for personnel engaged in the development of our SMRT Sequencing technology, the design and development of our future products and current product enhancements. These expenses also include prototype-related expenditures, development equipment and supplies, facilities costs and other related overhead. We expense research and development costs during the period in which the costs are incurred. However, we defer and capitalize non-refundable advance payments made for research and development activities until the related goods are received or the related services are rendered.

Table of Contents

Sales, General and Administrative Expense

Sales, general and administrative expenses include costs for sales, marketing and administrative personnel, sales and marketing activities, tradeshow expenses, legal expenses, regulatory fees and general corporate expenses.

Interest Expense

Interest expense is primarily related to our debt facility and includes the amortization of debt discount and other related costs. To a lesser extent, through the second quarter of 2017, these amounts also include interest expense relating to our facility financing obligations resulting from a lease agreement entered into in 2010.

Other Income (Expense), Net

Other income (expense), net consists primarily of interest income earned on cash and investments, accretion of discounts and amortization of premiums related to investments, net gains or losses on foreign currency transactions, net gains or losses resulting from changes in the estimated fair value of the financing derivative and foreign income taxes.

Income Taxes

Except for the three-month period ended September 30, 2015, we have incurred net losses in every quarter since inception and have not recorded any U.S. federal or state income tax benefits for such losses as they have been fully offset by valuation allowances.

Critical Accounting Policies and Estimates

The discussion and analysis of our financial condition and results of operations are based upon our unaudited Financial Statements, which have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission (“SEC”). The preparation of these Financial Statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses. On an ongoing basis, we evaluate our critical accounting policies and estimates. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Revenue Recognition

We adopted FASB ASC 606, Revenue from Contracts with Customers on January 1, 2018, using the modified retrospective method. Please see "Revenue Recognition" policy in the Note 2 “Summary of significant Accounting Policies” of Item 1. Financial Statements.

Except as noted above, there have been no other material changes to our significant accounting policies as discussed in our Annual Report on Form 10-K for the year ended December 31, 2017.

21

Table of Contents

Results of Operations

Comparison of the three-month periods ended June 30, 2018 and 2017

(in thousands, except percentages)	Three-Month Periods Ended June 30, 2018	2017	$ Change	% Change
	(unaudited)			
Revenue:				
Product revenue	$ 18,485	$ 16,548	$ 1,937	12%
Service and other revenue	3,093	3,525	(432)	(12%)
Total revenue	21,578	20,073	1,505	7%
Cost of Revenue:				
Cost of product revenue	9,858	8,155	1,703	21%
Cost of service and other revenue	2,858	3,917	(1,059)	(27%)
Total cost of revenue	12,716	12,072	644	5%
Gross profit	8,862	8,001	861	11%
Operating Expense:				
Research and development	15,664	16,883	(1,219)	(7%)
Sales, general and administrative	14,943	15,505	(562)	(4%)
Total operating expense	30,607	32,388	(1,781)	(5%)
Operating loss	(21,745)	(24,387)	2,642	11%
Interest expense	(598)	(826)	228	28%
Other income (expense), net	(197)	(326)	129	40%
Net loss	$ (22,540)	$ (25,539)	$ 2,999	12%

Revenue

Total revenue for the three-month period ended June 30, 2018 was $21.6 million, compared to $20.1 million for the same period during 2017.

Product revenue of $18.5 million for the three-month period ended June 30, 2018 consisted of $8.5 million from sales of Sequel instruments and $10.0 million from sales of consumables, compared to total product revenue of $16.5 million for the same period during 2017, consisting of $7.1 million from sales of Sequel and RS II instruments and $9.4 million from sales of consumables. The increase in instrument sales was primarily attributable to a higher number of Sequel instrument shipments and installations. The increase in consumable sales was primarily attributable to an increase in instrument utilization and a larger installed base of instruments.

Service and other revenue of $3.1 million and $3.5 million for the three-month periods ended June 30, 2018 and 2017, respectively, was primarily derived from product maintenance agreements sold on our installed instruments. Lower year-over-year service revenue is expected to continue until the Sequel service revenue from a growing installed base

outstrips the decrease in the higher-priced RS II service revenue which is declining as RS II customers transition to Sequel instruments.

Gross Profit

Gross profit for the three-month period ended June 30, 2018 was $8.9 million, resulting in a gross margin of 41.1%, compared to gross profit of $8.0 million, resulting in a gross margin of 39.9% for the same period during 2017.

Cost of product revenue was $9.9 million for the three-month period ended June 30, 2018, compared to cost of product revenue of $8.2 million for the same period during 2017. Cost of service and other revenue for the three-month period ended June 30, 2018 was $2.9 million, compared to $3.9 million for the same period during 2017. The increase in cost of product revenue of $1.7 million was primarily driven by the higher product revenue. The decrease in cost of service and other revenue of $1.0 million was partially due to lower service material costs. In addition, during the second quarter of 2017, we recorded a charge to cost of revenue of $0.3 million relating to leased RS II instruments primarily due to a change in the estimated useful life of these instruments.

Research and Development Expense

During the three-month period ended June 30, 2018, research and development expense decreased by $1.2 million, or 7.2%, compared to the same period during 2017. The decrease in research and development expense was primarily attributable to a lower chip development costs. Research and development expense included stock-based compensation expense of $2.2 million and $2.0 million during the three-month periods ended June 30, 2018 and 2017, respectively.

Table of Contents

Sales, General and Administrative Expense

During the three-month period ended June 30, 2018, sales, general and administrative expense decreased by $0.6 million, or 3.6%, compared to the same period during 2017. The decrease in sales, general and administrative expense was primarily attributable to a decrease of $0.8 million in consulting and professional fees, including legal fees incurred in connection with patent infringement litigation compared to the three-month period ended June 30, 2017. Sales, general and administrative expense included stock-based compensation expense of $2.4 million and $2.4 million during the three-month periods ended June 30, 2018 and 2017, respectively.

We generally expect our total operating expenses to be lower in the second half of 2018.

Interest Expense

Interest expense for the three-month period ended June 30, 2018 decreased by $0.2 million compared to the same period during 2017. Interest expense related primarily to the debt facility entered into in February 2013. In June 2017, we repaid $4.5 million out of the original $20.5 million debt facility. As of June 30, 2018, a balance of $16.0 million aggregate principal amount of debt remained outstanding under this facility.

Comparison of the six-month periods ended June 30, 2018 and 2017

(in thousands, except percentages)	Six-Month Periods Ended June 30, 2018	2017	$ Change	% Change
	(unaudited)			
Revenue:				
Product revenue	$ 34,767	$ 37,842	$ (3,075)	(8%)
Service and other revenue	6,173	7,146	(973)	(14%)
Total revenue	40,940	44,988	(4,048)	(9%)
Cost of Revenue:				
Cost of product revenue	18,877	19,517	(640)	(3%)
Cost of service and other revenue	5,905	8,533	(2,628)	(31%)
Total cost of revenue	24,782	28,050	(3,268)	(12%)
Gross profit	16,158	16,938	(780)	(5%)
Operating Expense:				
Research and development	31,975	33,854	(1,879)	(6%)
Sales, general and administrative	29,877	30,770	(893)	(3%)
Total operating expense	61,852	64,624	(2,772)	(4%)
Operating loss	(45,694)	(47,686)	1,992	4%

Interest expense	(1,179)	(1,664)	485	29%
Other expense, net	154	(56)	210	375%
Net loss	$ (46,719)	$ (49,406)	$ 2,687	5%

Revenue

Total revenue for the six-month period ended June 30, 2018 was $40.9 million, compared to $45.0 million for the same period during 2017. The revenue reduction was largely due to a spike in Sequel system installations in the first quarter of 2017 as we worked down the backlog of instrument orders that we had built up from 2016.

Product revenue of $34.8 million for the six-month period ended June 30, 2018 consisted of $15.7 million from sales of Sequel instruments and $19.1 million from sales of consumables, compared to total product revenue of $37.8 million for the same period during 2017, consisting of $19.7 million from sales of Sequel and RS II instruments and $18.1 million from sales of consumables. The increase in consumable sales was primarily attributable to an increase in instrument utilization and a larger installed base of instruments.

Service and other revenue of $6.2 million and $7.1 million for the six-month periods ended June 30, 2018 and 2017, respectively, was primarily derived from product maintenance agreements sold on our installed instruments. Lower year-over-year service revenue is expected to continue until the Sequel service revenue from a growing installed base outstrips the decrease in the higher-priced RS II service revenue, which is declining as RS II customers transition to Sequel instruments.

Table of Contents

Gross Profit

Gross profit for the six-month period ended June 30, 2018 was $16.2 million, resulting in a gross margin of 39.5%, compared to gross profit of $16.9 million, resulting in a gross margin of 37.7% for the same period during 2017.

Cost of product revenue was $18.9 million for the six-month period ended June 30, 2018, compared to cost of product revenue of $19.5 million for the same period during 2017. Cost of service and other revenue for the six-month period ended June 30, 2018 was $5.9 million, compared to $8.5 million for the same period during 2017. The decrease in cost of service and other revenue of $2.6 million was partially due to lower service material costs. In addition, during the first quarter of 2017, we recorded a charge to cost of revenue of $1.3 million, and in the second quarter of 2017, we recorded an additional charge to cost of revenue of $0.3 million relating to leased RS II instruments primarily due to a change in the estimated useful life of these instruments.

Research and Development Expense

During the six-month period ended June 30, 2018, research and development expense decreased by $1.9 million, or 5.6%, compared to the same period during 2017. The decrease in research and development expense was primarily attributable to a lower chip development costs. Research and development expense included stock-based compensation expense of $4.5 million and $4.1 million during the six-month periods ended June 30, 2018 and 2017, respectively.

Sales, General and Administrative Expense

During the six-month period ended June 30, 2018, sales, general and administrative expense decreased by $0.9 million, or 2.9%, compared to the same period during 2017. The decrease in sales, general and administrative expense was primarily attributable to a decrease in consulting and professional fees, including legal fees incurred in connection with our ongoing patent infringement litigation compared to the six-month period ended June 30, 2017. Sales, general and administrative expense included stock-based compensation expense of $4.8 million and $4.8 million during the six-month periods ended June 30, 2018 and 2017, respectively.

Interest Expense

Interest expense for the six-month period ended June 30, 2018 decreased by $0.5 million compared to the same period during 2017. Interest expense related primarily to the debt facility entered into in February 2013. In June 2017, we repaid $4.5 million out of the original $20.5 million debt facility. As of June 30, 2018, a balance of $16.0 million aggregate principal amount of debt remained outstanding under this facility.

Liquidity and Capital Resources

Liquidity

Cash, cash equivalents and investments, excluding restricted cash, at June 30, 2018 totaled $63.5 million, compared to $62.9 million at December 31, 2017. We believe that our existing cash, cash equivalents and investments will be

sufficient to fund our projected operating requirements for at least twelve months from the filing of this Quarterly Report on Form 10-Q; however, we may need to raise additional capital in the future. Our view regarding sufficiency of cash and liquidity is primarily based on our operating plans and financial forecast for 2018, which includes various assumptions regarding demand for our products.

Factors that may affect our capital needs include, but are not limited to, slower than expected adoption of our products resulting in lower sales of our products and services; future acquisitions; our ability to obtain new collaboration, distribution and customer arrangements; the progress of our research and development programs; initiation or expansion of research programs and collaborations; litigation costs, including the costs involved in preparing, filing, prosecuting, defending and enforcing intellectual property rights; the purchase of patent licenses; and other factors.

To the extent we raise additional funds through the sale of equity or convertible debt securities, the issuance of such securities will result in dilution to our stockholders. There can be no assurance that such funds will be available on favorable terms, or at all, particularly in light of restrictions under our debt agreement. If adequate funds are not available, we may be required to obtain funds by entering into collaboration, licensing or debt agreements on unfavorable terms. If we are unable to raise funds on favorable terms, or at all, we may have to reduce our cash burn rate and may not be able to support our commercialization efforts, or to increase or maintain the level of our research and development activities. If we are unable to generate sufficient cash flows or to raise adequate funds to finance our forecasted expenditures, we may have to make significant changes to our operations, including delaying or reducing the scope of or eliminating some or all of our development programs. We also may have to reduce sales, marketing, engineering, customer support or other resources devoted to our existing or new products or cease operations. If our cash, cash equivalents and investments are insufficient to fund our projected operating requirements, and we are unable to raise capital, it would have a material adverse effect on our business, financial condition and results of operations.

Table of Contents

Operating Activities

Our primary uses of cash in operating activities are for the development of ongoing product enhancements and future products, manufacturing, and support functions related to our sales, general and administrative activities. The net cash used for the six-month periods ended June 30, 2018 and 2017 primarily reflected the net loss for those periods, partially offset by non-cash operating expenses including depreciation and stock-based compensation, as well as changes in working capital.

We used $33.3 million of cash from operating activities for the six-month period ended June 30, 2018, compared to cash usage of $29.5 million for the same period in 2017.

Cash used in operating activities for the six-month period ended June 30, 2018 was due primarily to a net loss of $46.7 million, offset by non-cash items such as stock-based compensation of $10.5 million and depreciation of $3.6 million. The change in net operating assets and liabilities was primarily attributed to a decrease of $6.0 million in accounts receivable, partially offset by a decrease of $4.8 million in accounts payable and a decrease of $1.7 million in accrued expenses.

Cash used in operating activities for the six-month period ended June 30, 2017 was due primarily to a net loss of $49.4 million, adjusted for non-cash items such as stock-based compensation of $10.0 million and depreciation of $4.8 million. The change in net operating assets and liabilities was primarily attributed to a decrease in prepaid expenses and other assets of $6.4 million, of which $4.3 million related to the payments we received from our Prior Landlord as a result of exiting a portion of our prior facilities, partially offset by a decrease of $2.3 million in accrued expenses and an increase of $2.2 million in inventory.

Investing Activities

Our investing activities consist primarily of capital expenditures and investment purchases, sales and maturities. We received $4.4 million of cash from investing activities for the six-month period ended June 30, 2018, compared to using cash of $17.1 million from investing activities for the six-month period ended June 30, 2017.

Cash used in investing activities for the six-month period ended June 30, 2018 was due primarily to net maturities and sales of investments of $6.1 million.

Cash used in investing activities for the six-month period ended June 30, 2017 was due primarily to net purchases of investments of $11.0 million and net purchases of property and equipment of $6.1 million.

Financing Activities

We had $35.4 million of cash provided from financing activities for the six-month period ended June 30, 2018, compared to $66.3 million of cash provided from financing activities for the same period in 2017.

Cash provided by financing activities during the six-month period ended June 30, 2018 was due primarily to net proceeds of $32.9 million from our underwritten public equity follow-on offering, after deducting underwriter commissions and offering expenses, and $2.5 million from the issuance of common stock through our equity compensation plans.

Cash provided by financing activities during the six-month period ended June 30, 2017 was due primarily to net proceeds of $52.7 million from our underwritten public equity offering, after deducting underwriter commissions and paid offering expenses, net proceeds of $11.9 million from our common stock “at-the-market” offering program and $6.2 million from the issuance of common stock through our equity compensation plans, partially offset by our payment of $4.5 million in outstanding principal under our debt facility in the second quarter of 2017.

Capital Resources

In August 2017, we filed a shelf registration statement on Form S-3 with the SEC pursuant to which we may, from time to time, sell up to an aggregate of $150.0 million of our common stock, preferred stock, depository shares, warrants, units or debt securities. On August 18, 2017, the registration statement was declared effective by the SEC, which allows us to access the capital markets for the three-year period following this effective date.

Underwritten Public Equity Offering

In February 2018, we entered into an underwriting agreement, relating to the public offering of 12,500,000 shares of our common stock, $0.001 par value per share, at a price to the public of $2.40 per share. Under the terms of the underwriting agreement, we also granted the Underwriters a 30-day option to purchase up to an additional 1,875,000 shares of our common stock, which was subsequently exercised in full, and the offering including the sale of shares of common stock subject to the underwriters’ option, closed in February 2018. In total, we sold 14.4 million shares of our common stock at a price of $2.40 per share. We paid a commission equal to 4% of the gross proceeds from the sale of shares of our common stock under the underwriting agreement. The

Table of Contents

total net proceeds to us from the offering after deducting the underwriting commissions and offering expenses were approximately $32.9 million.

Subject to certain exceptions set forth in our Facility Agreement, holders of our Notes may elect to receive up to 25% of the net proceeds from financing activities that include an equity component as prepayment of the Notes to be applied first, to accrued and unpaid interest and second, to principal. However, in February 2018 holders representing a majority of the aggregate principal amount of the outstanding Notes waived such right in connection with the issuance and sale of shares of common stock in our public offering.

Debt Facility Agreement

Under the terms of our February 2013 debt agreement with Deerfield (the “Facility Agreement”), we received $20.5 million and issued promissory notes in the aggregate principal amount of $20.5 million (the “Notes”). The Notes bear simple interest at a rate of 8.75% per annum, payable quarterly in arrears commencing on April 1, 2013 and on the first business day of each January, April, July and October thereafter. The Facility Agreement has a maximum term of seven years. We received net proceeds of $20.0 million, representing $20.5 million of gross proceeds, less a $500,000 facility fee, before deducting other expenses of the transaction. On June 23, 2017, pursuant to a partial exercise by the Notes holders of their right to elect to receive up to 25% of the net proceeds from any financing that includes an equity component, we paid $4.5 million of outstanding principal, together with accrued and unpaid interest, to one of the Notes holders with proceeds from our underwritten public equity offering. As of June 30, 2018, we had an outstanding principal amount $16.0 million remaining in the Notes.

The Facility Agreement also contains various representations and warranties, and affirmative and negative covenants, customary for financings of this type, including restrictions on our ability to incur additional indebtedness or liens on our assets, except as permitted under the Facility Agreement. In addition, the Facility Agreement requires us to maintain consolidated cash and cash equivalents on the last day of each calendar quarter of not less than $2.0 million. As security for our repayment of our obligations under the Facility Agreement, we granted the lenders a security interest in substantially all of our property and interests in property.

Subject to certain exceptions set forth in the Facility Agreement, holders representing a majority of the aggregate principal amount of the outstanding Notes issued pursuant to the Facility Agreement may elect to receive up to 25% of the net proceeds from any financing that includes an equity component. To the extent we raise additional capital in the future through the sale of common stock, including without limitation, sales of common stock pursuant to an “at-the-market” offering program, we may be obligated, at the election of the holders of the Notes, to pay 25% of the net proceeds from any such financing activities as partial payment of the Notes.

Lease

On July 22, 2015, we entered into a lease agreement (the “O’Brien Lease”) with respect to our facility located at 1305 O’Brien Drive, Menlo Park, California (the “O’Brien Premises”). The term of the O’Brien Lease is one hundred thirty-two (132) months. In December 2016, we entered into an amendment to the O’Brien Lease which defined the commencement date of the lease to be October 25, 2016, notwithstanding that such substantial completion did not occur until the first quarter of 2017. Base monthly rent was abated for the first six (6) months of the lease term and

thereafter was $540,000 per month during the first year of the lease term, with specified annual increases thereafter until reaching $711,000 per month during the last twelve (12) months of the lease term. We were required to establish a letter of credit for the benefits of the landlord and to submit $4.5 million as a deposit for the letter of credit in October 2015; and, as such, $4.5 million was recorded at such time and continued to be recorded in “Long-term restricted cash” in the consolidated balance sheet as of both June 30, 2018 and December 31, 2017.

The landlord was obligated to construct certain warm shell improvements at the landlord’s cost and expense and provide us with a tenant improvement allowance in the amount of $12.6 million. Construction was completed in phases and we began moving into the O’Brien Premises during January 2017. By the end of the first quarter of 2017, improvements associated with the entire O’Brien Premises were substantially completed. As a result, during the first quarter of 2017 we capitalized $28.8 million of tenant improvements, of which $12.6 million was paid by the landlord as a tenant improvement allowance. As the $12.6 million tenant improvement allowance is accounted for as a lease incentive, we recorded the $12.6 million to “Deferred rent, non-current”, which will be amortized over the lease term of approximately 11 years. In addition, as the premises were completed in phases in 2017, tenant improvements were placed into service in phases once construction was substantially complete and the related asset was ready for its intended use.

Off-Balance Sheet Arrangements

As of June 30, 2018, we did not have any off-balance sheet arrangements.

Table of Contents

In the ordinary course of business, we enter into standard indemnification arrangements. Pursuant to these arrangements, we indemnify, hold harmless, and agree to reimburse the indemnified parties for losses suffered or incurred by the indemnified party in connection with any trade secret, copyright, patent or other intellectual property infringement claim by any third party with respect to its technology, or from claims relating to our performance or non-performance under a contract, any defective products supplied by us, or any acts or omissions, or willful misconduct, committed by us or any of our employees, agents or representatives. The term of these indemnification agreements is generally perpetual after the execution of the agreement. The maximum potential amount of future payments we could be required to make under these agreements is not determinable because it involves claims that may be made against us in future periods, but have not yet been made. To date, we have not incurred costs to defend lawsuits or settle claims related to these indemnification agreements.

We also enter and have entered into indemnification agreements with our directors and officers that may require us to indemnify them against liabilities that arise by reason of their status or service as directors or officers, except as prohibited by applicable law. In addition, we may have obligations to hold harmless and indemnify third parties involved with our fundraising efforts and their respective affiliates, directors, officers, employees, agents or other representatives against any and all losses, claims, damages and liabilities related to claims arising against such parties pursuant to the terms of agreements entered into between us and such third parties in connection with such fundraising efforts. To the extent that such indemnification obligations apply to the lawsuits described in “Note 6. Commitments and Contingencies” in Part I, Item 1 of this Form 10-Q, any associated expenses incurred are included within the related accrued litigation expense amounts. No additional liability associated with such indemnification agreements has been recorded as of June 30, 2018.

Table of Contents

Item 3.Quantitative and Qualitative Disclosures About Market Risk

Interest Rate and Market Risk

Our exposure to market risk is confined to our cash, cash equivalents and investments, all of which have maturities of less than three years. The goals of our investment policy are preservation of capital, fulfillment of liquidity needs and fiduciary control of cash, cash equivalents and investments. We also seek to maximize income from our investments without assuming significant risk. To achieve our goals, we maintain a portfolio of cash equivalents and investments in a variety of securities of high credit quality. The securities in our investment portfolio are not leveraged, are classified as available for sale, and are, due to their short-term nature, subject to minimal interest rate risk. We currently do not hedge interest rate exposure. Because of the short-term maturities of our investments, we do not believe that a hypothetical 10% change in market interest rates would have any material negative impact on the value of our investment portfolio.

Foreign Exchange Risk

The majority of our expense and capital purchasing activities are transacted in U.S. dollars. However, a portion of our operations consists of sales activities outside of the United States; therefore, we have foreign exchange exposures relating to non-U.S. dollar revenues, operating expenses, accounts receivable, accounts payable, and currency balances. Our primary exposure is with the Euro. Actual gains and losses in the future may differ materially from the hypothetical gains and losses based on changes in the timing and amount of foreign currency exchange rate movements and our actual exposure; however, we do not believe that the effect of a hypothetical 10% change in foreign currency exchange rates applicable to our business would have a material impact on our historical consolidated financial statements.

Our international operations are subject to risks typical of international operations, including, but not limited to, differing economic conditions, changes in political climate, differing tax structures, other regulations and restrictions and foreign exchange rate volatility.

Item 4.Controls and Procedures.

Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and our chief financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of the end of the period covered by this Quarterly Report on Form 10-Q. Based on this evaluation, our chief executive officer and our chief financial officer concluded that our disclosure controls and procedures are designed at a reasonable assurance level and are effective to provide reasonable assurance that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms and that such information is accumulated and communicated to our management, including our chief executive officer and our chief financial officer, as appropriate, to allow timely decisions regarding required disclosure.

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the quarter ended June 30, 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Table of Contents

PART II – OTHER INFORMATION

Item 1.Legal Proceedings

Please see Note 6. “Commitments and Contingencies” of Item 1. of Financial Statements under Part I – Financial Information.

Table of Contents

Item 1A. Risk Factors

You should consider carefully the risks and uncertainties described below, together with all of the other information in our public filings with the Securities and Exchange Commission, which could materially affect our business, financial condition, results of operations and prospects. The risks described below are not the only risks facing us. Risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially affect our business, financial condition, results of operations and prospects.

Risks Related to Our Business

We have limited experience as a commercial company and the commercialization and sales of our current or future products may be unsuccessful or less successful than anticipated.

Our first commercial product launched in 2011 and we have had limited sales to date. As such, we have limited historical financial data upon which to base our projected revenue, planned operating expenses or upon which to evaluate our company and our commercial prospects. Furthermore, in September 2015, we launched the PacBio Sequel® System, and concurrently began phasing out production of PacBio RS II instruments. Based on our limited experience in developing and marketing our existing products and launching new products, we may not be able to effectively:

- drive adoption of our current and future products, including the Sequel System;
- attract and retain customers for our products;
- provide appropriate levels of customer training and support for our products;
- implement an effective marketing strategy to promote awareness of our products;
- develop and implement an effective sales and distribution strategy for our current and future products;
- develop, manufacture and commercialize new products, including the new SMRT Cell 8M we are developing, or achieve an acceptable return on our manufacturing or research and development efforts and expenses;
- comply with regulatory requirements applicable to our products;
- anticipate and adapt to changes in our market;
- accommodate customer expectations and demands with respect to our products, increase product adoption by our existing customers or develop new customer relationships;
- grow our market share by marketing and selling our products to new and additional market segments;
- maintain and develop strategic relationships with vendors, manufacturers and other industry partners to acquire necessary materials for the production of, and to develop, manufacture and commercialize, our existing or future products;
- adapt or scale our manufacturing activities to meet potential demand at a reasonable cost;
- avoid infringement and misappropriation of third-party intellectual property;
- obtain and maintain any necessary licenses to third-party intellectual property on commercially reasonable terms;
- obtain valid and enforceable patents that give us a competitive advantage or enforce existing patents;
- protect our proprietary technology; and
- attract, retain and motivate qualified personnel.

The risks noted above, especially with respect to the marketing, sales, and commercialization of our products (including into the markets that F. Hoffman-La Roche Ltd. (“Roche”) would have addressed), may be heightened by the

termination of our development, commercialization and license agreement with Roche, which became effective as of the first quarter of 2017. In addition, a high percentage of our expenses is and will continue to be fixed. Accordingly, if we do not generate revenue as and when anticipated, our losses may be greater than expected and our operating results will suffer.

If we are unable to successfully develop and timely manufacture our current and future products, including with respect to the Sequel System, the new SMRT Cell 8M that we are developing and related products, our business may be adversely affected.

In light of the highly complex technologies involved in our products, there can be no assurance that we will be able to manufacture and commercialize our current and future products on a timely basis or continue providing adequate support for our existing products. The commercial success of our products, including the Sequel System, depends on a number of factors, including performance and reliability of the system, our anticipating and effectively addressing customer preferences and demands, the success of our sales and marketing efforts, effective forecasting and management of product demand, purchase commitments and inventory levels, effective management of manufacturing and supply costs, and the quality of our products, including consumables such as SMRT Cells and reagents. Should we face delays in or discover unexpected defects during the further development or

Table of Contents

manufacturing process of instruments or consumables related to our products, including with respect to the new SMRT Cell 8M we are developing, including any delays or defects in software development or product functionality, the timing and success of the continued rollout and scaling of our products may be significantly impacted, which may materially and negatively impact our revenue and gross margin. The ability of our customers to successfully utilize our products will also depend on our ability to deliver high quality SMRT Cells and reagents, including with respect to the new SMRT Cell 8M we are developing. We have designed SMRT Cells and other consumables specifically for the Sequel System, and we are developing, and may need to develop in the future, other customized SMRT Cells and consumables for our future products, including the new SMRT Cell 8M we are developing. We have transferred production of the Sequel System SMRT Cells from a prototype chip vendor to a high-volume manufacturer. Our production of the SMRT Cells for the Sequel System has been and may in the future be below desired levels, and we have experienced and may experience in the future manufacturing delays, product or quality defects, SMRT Cell variability, and other issues, including unanticipated delays and other issues in connection with our transition to the high-volume manufacturer. The performance of our consumables is critical to our customers' successful utilization of our products, and any defects or performance issues with our consumables would adversely affect our business. All of the foregoing could negatively impact our ability to sell our products or result in other material adverse effects on our business, financial condition and results of operations.

The development of our products is complex and costly. Problems in the design or quality of our products may have a material and adverse effect on our brand, business, financial condition, and operating results, and could result in us losing our certifications from the International Organization for Standardization ("ISO"). If we were to lose ISO certification, then our customers might choose not to purchase products from us and this could adversely impact our ability to develop products approved for clinical uses. Unanticipated problems with our products could divert substantial resources, which may impair our ability to support our new and existing products, and could substantially increase our costs. If we encounter development challenges or discover errors in our products late in our development cycle, we may be forced to delay product shipments or the scaling of manufacturing or supply. In particular, if the continued rollout of our current and future products, including with respect to the new SMRT Cell 8M we are developing, is delayed or is not successful or less successful than anticipated, then we may not be able to achieve an acceptable return, if any, on our substantial research and development efforts, and our business may be materially and adversely affected. The expenses or losses associated with delayed or unsuccessful product development or lack of market acceptance of our existing and new products, including new SMRT Cell 8M, could materially and adversely affect our business, financial condition and results of operations.

Our research and development efforts may not result in the benefits that we anticipate, and our failure to successfully market, sell, and commercialize our current and future products could have a material adverse effect on our business, financial condition and results of operations.

We have dedicated significant resources to developing our current products, including sequencing systems and consumables based on our proprietary SMRT sequencing technology and our Sequel System. We are also engaged in substantial and complex research and development efforts, which, if successful, may result in the introduction of new products in the future, including with respect to the new SMRT Cell 8M we are developing. Our research and development efforts are complex and require us to incur substantial expenses. We may not be able to develop, manufacture and commercialize new products, obtain regulatory approval if necessary, or achieve an acceptable return, if any, on our research and development efforts and expenses. Furthermore, we need to continue to expand our internal capabilities or seek new partnerships or collaborations, or both, in order to successfully market, sell and commercialize our products in the markets we seek to reach.

We must successfully manage new product introductions and transitions, including with respect to the new SMRT Cell 8M we are developing, we may incur significant costs during these transitions, and they may not result in the benefits we anticipate.

If our products and services fail to deliver the performance, scalability or results expected by our current and future customers, or are not delivered on a timely basis, our reputation and credibility may suffer, our current and future sales and revenue may be materially harmed and our business may not succeed. For instance, if we are not able to realize the benefits we anticipate from the development and commercialization of the Sequel System, our new SMRT Cell 8M or our future products, including with respect to the new SMRT Cell 8M we are developing and also those future products that may be developed for clinical uses, it could have a material adverse effect on our business, financial condition and results of operations. In addition, the introduction of future products, including with respect to the new SMRT Cell 8M we are developing, may lead to our limiting or ceasing development of further enhancements to our existing products as we focus our resources on new products, and could result in reduced marketplace acceptance and loss of sales of our existing products, materially adversely affecting our revenue and operating results. The introduction of new products may also have a negative impact on our revenue in the near-term as our current and future customers may delay or cancel orders of existing products in anticipation of new products and we may also be pressured to decrease prices for our existing products. Further, we have experienced, and may in the future experience, difficulty in managing or forecasting customer reactions, purchasing decisions or transition requirements with respect to newly-launched products. We have incurred and may continue to incur significant costs in completing the transitions, including costs of write-downs of our products, as current or future customers transition to new products. If we do not successfully manage these product transitions, including with respect to

Table of Contents

the new SMRT Cell 8M we are developing, our business, reputation and financial condition may be materially and adversely affected.

We have incurred losses to date, and we expect to continue to incur significant losses as we develop our business and may never achieve profitability.

We have incurred net losses since inception and we cannot be certain if or when we will produce sufficient revenue from our operations to support our costs. While we achieved profitability for the quarter ended September 30, 2015, this result was largely due to a one-time gain on lease amendments. We have incurred net losses for all other fiscal periods, and, even if profitability is achieved in the future, we may not be able to sustain profitability on a consistent basis. We expect to continue to incur substantial losses and negative cash flow from operations for the foreseeable future.

We are not cash flow positive and may not have sufficient cash to fund our current and planned operations.

Our operations have consumed substantial amounts of cash since inception, and we expect to continue to incur substantial losses and negative cash flow from operations for the foreseeable future. We believe that our growth will depend, in part, on our ability to fund our commercialization efforts and our efforts to develop new products, including the new SMRT Cell 8M. Our existing resources may not allow us to conduct all of these activities that we believe would be beneficial for our future growth. As a result, we may need to raise additional funds through public or private debt or equity financing or alternative financing arrangements, which may include collaborations or licensing arrangements. In the event that we enter into collaborations or licensing arrangements to raise capital, we may be required to accept unfavorable terms. If we are unable to raise funds on favorable terms, or at all, we may have to reduce our cash burn rate and may not be able to support our commercialization efforts, or to increase or maintain the level of our research and development activities. If we are unable to generate sufficient cash flows or to raise adequate funds to finance our forecasted expenditures, we may have to make significant changes to our operations, including delaying or reducing the scope of or eliminating some or all of our development programs. We also may have to reduce sales, marketing, engineering, customer support or other resources devoted to our existing or new products, or cease operations. Any of these actions could impede our ability to achieve our business objectives and could materially harm our operating results.

We have continued to experience losses and, if that trend continues, we may need to seek additional sources of financing for various purposes, including:

- expanding the commercialization of our products and launching new products, including the new SMRT Cell 8M we are developing;
- funding our operations; and
- furthering our research and development.

Additional funds may not be available on terms acceptable to us or at all, particularly in light of restrictions under our debt agreement. We have incurred and may further incur additional debt. Debt holders have rights senior to common stockholders to make claims on our assets and the terms of our existing debt agreement restrict certain activities, including our ability to pay dividends on our common stock. We may not be able to issue equity securities due to unacceptable terms and conditions to us in the capital markets. To the extent that we raise additional funds through the sale of our common stock, continued downward fluctuations in our stock price could adversely affect such fundraising efforts. Furthermore, equity financings normally involve shares sold at a discount to the current market price, and fundraising through sales of additional shares of common stock or other equity securities will have a dilutive effect on our existing investors. The shares may also be sold at a time when the market price for our common stock is low

because we are in need of the funds, which will further dilute existing holders more than if the market price for our common stock was higher.

Our success is highly dependent on our ability to further penetrate the existing market for genetic analysis as well as the growth and expansion of the market for our products. If our products fail to achieve and sustain sufficient market acceptance, we will not generate expected revenue and our business may not succeed.

Although the overall market for nucleic acid sequencing technology is well-established, the market for our Single Molecule, Real-Time (SMRT®) Sequencing technology is relatively new and evolving. We cannot be sure that our current or future products will gain acceptance in the marketplace at levels sufficient to support our costs. Our success depends, in part, on our ability to expand the market for genetic analysis to include new applications that are not practicable with other current technologies and to introduce new products that capture a larger share of the growing sequencing market. To accomplish this, we must successfully commercialize, and continue development of, our proprietary SMRT Sequencing technology for use in a variety of life science and other applications, including uses by academic, government and clinical laboratories, as well as pharmaceutical, diagnostic, biotechnology and agriculture companies, among others. For example, the sale and commercialization of the new SMRT Cell 8M and related products that we are developing may not be successful.

Table of Contents

There can be no assurance that we will be successful in adding new products or securing additional customers for our current and future products, including with respect to the new SMRT Cell 8M we are developing. Our ability to further penetrate the existing market and any expansion of the market depends on a number of factors, including the cost, performance and perceived value associated with our products, as well as customers' willingness to adopt a different approach to nucleic acid sequencing. Potential customers may have already made significant investments in other sequencing technologies and may be unwilling to invest in new technologies. We have limited experience commercializing and selling products outside of the academic and research settings, and we cannot assure you that we can successfully acquire additional customers in additional markets. Furthermore, we cannot guarantee that our products will be satisfactory to potential customers in the markets we seek to reach or that our products will perform in accordance with customer expectations.

These markets are new and dynamic, and there can be no assurance that they will develop as quickly as we anticipate, that they will reach their full potential or that they will be receptive to any of our products. As a result, we may be required to refocus our marketing efforts, and we may have to make changes to the specifications of our products to enhance our ability to enter particular markets more quickly. We may also need to delay full-scale commercial deployment of new products as we develop them in order to perform quality control and early access user testing, including the new SMRT Cell 8M we are developing. Even if we are able to implement our technology successfully, we and/or our sales and distribution partners may fail to achieve or sustain market acceptance of our current or future products across the full range of our intended life science and other applications. We need to continue to expand and update our internal capabilities or to collaborate with other partners, or both, in order to successfully expand sales of our products in the markets that we seek to reach, which we may be unable to do at the scale required to support our business.

If the market for our products grows more slowly than anticipated, if we are unable to successfully scale or otherwise ensure sufficient manufacturing capacity for new products to meet demand, if we are not able to successfully market and sell our products, if competitors develop better or more cost-effective products, if our product launches and commercialization are not successful, or if we are unable to further grow our customer base or do not realize the growth with existing customers that we are expecting, our current and future sales and revenue would be materially harmed and our business may not succeed.

We rely on other companies for the manufacture of certain components and sub-assemblies and intend to outsource additional sub-assemblies in the future. We may not be able to successfully scale the manufacturing process necessary to build and test multiple products on a full commercial basis, which could materially harm our business.

Our products are complex and involve a large number of unique components, many of which require precision in manufacturing. The nature of our products requires customized components that are currently available only from a limited number of sources, and in some cases, single sources. We have chosen to source certain critical components from a single source, including suppliers for our SMRT Cells, reagents and instruments. Furthermore, we have transferred production of the SMRT Cells for our Sequel System from a prototype chip vendor to a high-volume manufacturer and we have experienced, and may in the future experience, unanticipated delays and other issues in connection with such transition. If we are required to purchase these components from alternative sources, it could take several months or longer to qualify the alternative sources. If we are unable to secure a sufficient supply of these product components on a timely basis, or if these components do not meet our expectations or specifications for quality and functionality, our operations and manufacturing will be materially and adversely affected, we could be unable to meet customer demand and our business and results of operations may be materially and adversely affected.

The operations of our third-party manufacturing partners and suppliers could be disrupted by conditions unrelated to our business or operations or that are beyond our control, including but not limited to international trade restrictions. If our manufacturing partners or suppliers are unable or fail to fulfill their obligations to us for any reason, we may not be able to manufacture our products and satisfy customer demand or our obligations under sales agreements in a timely manner, and our business could be harmed as a result. Our current manufacturing process is characterized by long lead times between the placement of orders for and delivery of our products. If we have received insufficient components to manufacture our products on a timely basis to meet customer demand, our sales and our gross margin may be adversely affected and our business could be materially harmed. If we are unable to reduce our manufacturing costs and establish and maintain reliable, high-volume manufacturing suppliers as we scale our operations, our business could be materially harmed.

We may be unable to consistently manufacture our instruments and consumable kits, including SMRT Cells, to the necessary specifications or in quantities necessary to meet demand at an acceptable cost or at an acceptable performance level

In order to successfully generate revenue from our products, we need to supply our customers with products that meet their expectations for quality and functionality in accordance with established specifications. Our customers have experienced variability in the performance of our products. We have experienced and may continue to experience delays, quality issues or other difficulties leading to customer dissatisfaction with our products. Our production of SMRT Cells involves a long and complex manufacturing process, has been and may in the future be below desired levels, and we have experienced and may experience in the future

Table of Contents

manufacturing delays, product defects, variability in the performance of SMRT Cells and other products, inadequate reserves for inventory, or other issues. There is no assurance that we will be able to manufacture our products so that they consistently achieve the product specifications and quality that our customers expect, including any products developed for clinical uses. Problems in the design or quality of our products, including low manufacturing yields of SMRT Cells, may have a material adverse effect on our brand, business, financial condition, and operating results, and could result is us losing our ISO certifications. If we were to lose our ISO certifications, then our customers might choose not to purchase products from us. There is also no assurance that we will be able to increase manufacturing yields and decrease costs, or that we will be successful in forecasting customer demand or manufacturing and supply costs. Furthermore, we may not be able to increase manufacturing to meet anticipated demand or may experience downtime in our manufacturing facilities. An inability to manufacture products and components that consistently meet specifications, in necessary quantities and at commercially acceptable costs, will have a negative impact, and may have a material adverse effect, on our business, financial condition and results of operations.

Rapidly changing technology in life sciences and diagnostics could make our products obsolete unless we continue to develop, manufacture and commercialize new and improved products and pursue new market opportunities.

Our industry is characterized by rapid and significant technological changes, frequent new product introductions and enhancements and evolving industry standards. Our future success depends on our ability to continually improve our products, to develop and introduce new products that address the evolving needs of our customers on a timely and cost-effective basis and to pursue new market opportunities. These new market opportunities may be outside the scope of our proven expertise or in areas where the market demand is unproven, and new products and services developed by us may not gain market acceptance or may not adequately perform in order to capture market share. Our inability to develop and introduce new products and to gain market acceptance of our existing and new products could harm our future operating results. Unanticipated difficulties or delays in replacing existing products with new products or in commercializing our existing or new products in sufficient quantities and of acceptable quality to meet customer demand, including with respect to the new SMRT Cell 8M we are developing, could diminish future demand for our products and materially harm our future operating results.

Increased market adoption of our products by customers may depend on the availability of sample preparation and informatics tools, some of which may be developed by third parties.

Our commercial success may depend in part upon the development of sample preparation and software and informatics tools by third parties for use with our products. We cannot guarantee that third parties will develop tools that our current and future customers will find useful with our products, or that customers will adopt such third-party tools on a timely basis or at all. A lack of complementary sample preparation and informatics tools, or delayed updates of such tools, may impede the adoption of our products and may materially and adversely impact our business.

We operate in a highly competitive industry and if we are not able to compete effectively, our business and operating results will likely be harmed.

Some of our current competitors, including Illumina, Inc. and Thermo Fisher Scientific Inc., as well as other potential competitors, have greater name recognition, more substantial intellectual property portfolios, longer operating histories, significantly greater financial, technical, research and/or other resources, more experience in new product development, larger and more established manufacturing capabilities and marketing, sales and support functions, and/or more established distribution channels to deliver products to customers than we do. These competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards or customer requirements. In light of these advantages, even if our technology is more effective than the products or

service offerings of our competitors, current and potential customers might purchase competitive products and services instead of our products.

There are also several companies that are in the process of developing or have already developed new, competing or potentially competing technologies, products and/or services, including ONT Ltd. and its subsidiaries, against whom we have filed complaints for patent infringement with the U.S. International Trade Commission, in the U.S. District Court for the District of Delaware and, previously, in the High Court of England and Wales and the District Court of Mannheim, Germany. ONT Ltd. previously filed claims against us in the High Court of England and Wales and the District Court of Mannheim, Germany, also for patent infringement, and its subsidiary, ONT, Inc., has filed counterclaims against us in the U.S. District Court for the District of Delaware seeking declaratory judgements of non-infringement, invalidity and unenforceability of the asserted patents, as well as antitrust, false advertising, and unfair competition counterclaims. Roche is developing potentially competing sequencing products. Increased competition may result in pricing pressures, which could harm our sales, profitability or market share. Our failure to further enhance our existing products and to introduce new products to compete effectively could materially and adversely affect our business, financial condition or results of operations.

We may be unable to successfully increase sales of our current products or market and sell our future products.

Table of Contents

Our ability to achieve profitability depends on our ability to attract customers for our current and future products, and we may be unable to effectively market or sell our products, or find appropriate partners to do so. To perform sales, marketing, distribution and customer support functions successfully, we face a number of risks, including:

- our ability to attract, retain and manage qualified sales, marketing and service personnel necessary to expand market acceptance for our technologies;
- the performance and commercial availability expectations of our existing and potential customers with respect to new and existing products;
- availability of potential sales and distribution partners to sell our technologies, and our ability to attract and retain such sales and distribution partners;
- the time and cost of maintaining and growing a specialized sales, marketing and service force for a particular application, which may be difficult to justify in light of the revenue generated; and
- our sales, marketing and service force may be unable to execute successful commercial activities.

We have enlisted and may continue to enlist third parties to assist with sales, distribution and customer support. There is no guarantee that we will be successful in attracting desirable sales and distribution partners, that we will be able to enter into arrangements with such partners on terms favorable to us or that we will be able to retain such partners on a going-forward basis. If our sales and marketing efforts, or those of any of our third-party sales and distribution partners, are not successful, or our products do not perform in accordance with customer expectations, our technologies and products may not gain market acceptance, which could materially impact our business operations.

Large purchases by a limited number of customers represent a significant portion of our revenue, and any loss or delay of expected purchases has resulted, and in the future could result, in material quarter-to-quarter fluctuations of our revenue or otherwise adversely affect our results of operations.

We receive a significant portion of our revenue from a limited number of customers. For example, for the three- and six- month periods ended June 30, 2018, respectively, one of our customers, Gene Company Limited, accounted for approximately 33% and 31% of our total revenue, respectively. Gene Company Limited is our distributor in China. Many of these customers make large purchases on a purchase-order basis rather than pursuant to long-term contracts. As a consequence of the concentrated nature of our customer base and their purchasing behavior, our quarterly revenue and results of operations have fluctuated, and may fluctuate in the future, from quarter to quarter and are difficult to estimate. For example, the cancellation of orders or acceleration or delay in anticipated product purchases or the acceptance of shipped products by our larger customers has materially affected, and in the future could materially affect, our revenue and results of operations in any quarterly period. We have been, and may be in the future, unable to sustain or increase our revenue from our larger customers, or offset any discontinuation or decrease of purchases by our larger customers with purchases by new or other existing customers. To the extent one or more of our larger customers experience significant financial difficulty, bankruptcy or insolvency, this could have a material adverse effect on our sales and our ability to collect on receivables, which could harm our financial condition and results of operations.

In addition, certain customers, including some of our larger customers, have negotiated, or may in the future negotiate, volume-based discounts or other more favorable terms from us or our sales and distribution partners, which can and have had a negative effect on our gross margins or revenue.

We expect that such concentrated purchases will continue to contribute materially to our revenue for the foreseeable future and that our results of operations may fluctuate materially as a result of such larger customers' buying patterns. In addition, we may see consolidation of our customer base. The loss of one of our larger customers, a significant delay or reduction in its purchases, or any volume-based discount or other more favorable terms that we or our sales

and distribution partner(s) may agree to provide in light of the aggregated purchase volume or buying power resulting from such consolidation, has harmed, and in the future could harm, our business, financial condition, results of operations and prospects.

Our indebtedness could adversely affect our financial condition and prevent us from fulfilling our obligations.

Our net losses since inception and our expectation of incurring substantial losses and negative cash flow for the foreseeable future, combined with our existing indebtedness, could:

- make it more difficult for us to satisfy our obligations, including under our existing debt agreement;
- increase our vulnerability to general adverse economic and industry conditions;
- limit our ability to fund future working capital, capital expenditures, research and development and other business opportunities;
- require us to dedicate a substantial portion of our cash flow from operations to service payments on our indebtedness;

Table of Contents

- increase the volatility of the price of our common stock;
- limit our flexibility to react to changes in our business and the industry in which we operate;
- place us at a competitive disadvantage to our competitors that have less or no indebtedness; and
- limit, along with the financial and other restrictive covenants in our indebtedness, among other things, our ability to borrow additional funds.

Our existing debt contains covenants which may adversely impact our business and our failure to comply with such covenants could cause our outstanding indebtedness to become immediately payable.

Our existing debt contains various affirmative and negative covenants, including restrictions on our and our subsidiaries' ability to incur additional indebtedness or liens on our assets. These covenants impose significant operating and financial restrictions on us, including restrictions on our ability to take certain actions that may be in our best interests.

A breach of any of the covenants contained in our debt could result in an event of default. If an event of default exists, debt holders could elect to declare all amounts outstanding under the debt to be immediately due and payable. If we are unable to repay our indebtedness when due and payable, debt holders could proceed against the collateral granted to them to secure such indebtedness. We have pledged substantially all of our property and interests in property, including our intellectual property, as collateral under our existing debt. If the debt holders accelerate the repayment of our indebtedness, we may not have sufficient funds to make such repayment, which could have a material adverse effect on our liquidity and ability to conduct our business.

In addition, at the election of the holders representing a majority of the aggregate principal amount of the outstanding notes issued pursuant to our existing debt agreement, the holders may elect to receive 25% of the net proceeds from any financing that includes an equity component, including, without limitation, the sale or issuance of our common stock, options, warrants or other securities convertible or exchangeable for shares of our common stock, as partial payment of the notes. This right is subject to certain exceptions set forth in our existing debt agreement. To the extent we raise additional capital in the future through the sale of common stock under any future "at-the-market" offering, underwritten offering or through other financing activities, we may be obligated, at the election of the holders of the notes, to pay 25% of the net proceeds from any such financing activities as partial payment of the notes.

Our products are highly complex, have recurring support requirements and could have unknown defects or errors, which may give rise to claims against us or divert application of our resources from other purposes.

Products using our SMRT sequencing technology are highly complex and may develop or contain undetected defects or errors. Our customers have experienced and may continue to experience reliability issues with our existing and future products, including the Sequel System. Despite testing, defects or errors may arise in our products, which could result in a failure to obtain, maintain or increase market acceptance of our products, diversion of development resources, injury to our reputation and increased warranty, service and maintenance costs. New products or enhancements to our existing products in particular may contain undetected errors or performance problems that are discovered only after delivery to customers. If our products have reliability or other quality issues or require unexpected levels of support in the future, the market acceptance and utilization of our products may not grow to levels sufficient to support our costs and our reputation and business could be harmed. Low utilization rates of our products could cause our revenue and gross margins to be adversely affected. We generally ship our sequencing instruments with one year of service included in the purchase price with an option to purchase one or more additional years of service. We also provide a warranty for our consumables, which is generally limited to replacing, or at our option, giving credit for any consumable with defects in material or workmanship. Defects or errors in our products may also discourage customers from purchasing our products. The costs incurred in correcting any defects or errors

may be substantial and could materially and adversely affect our operating margins. If our service and support costs increase, our business and operations may be materially and adversely affected.

In addition, such defects or errors could lead to the filing of product liability claims against us or against third parties who we may have an obligation to indemnify against such claims, which could be costly and time-consuming to defend and result in substantial damages. Although we have product liability insurance, any product liability insurance that we have or procure in the future may not protect our business from the financial impact of a product liability claim. Moreover, we may not be able to obtain adequate insurance coverage on acceptable terms. Any insurance that we have or obtain will be subject to deductibles and coverage limits. A product liability claim could have a serious adverse effect on our business, financial condition and results of operations.

We depend on the continuing efforts of our senior management team and other key personnel. If we lose members of our senior management team or other key personnel or are unable to successfully retain, recruit and train qualified scientists, engineers and other personnel, our ability to maintain and develop our products could be harmed and we may be unable to achieve our goals.

Table of Contents

Our success depends upon the continuing services of members of our senior management team and scientific and engineering personnel. In particular, our scientists and engineers are critical to our technological and product innovations and we will need to hire additional qualified personnel. Our industry, particularly in the San Francisco Bay Area, is characterized by high demand and intense competition for talent, and the turnover rate can be high. We compete for qualified management and scientific personnel with other life science companies, academic institutions and research institutions, particularly those focusing on genomics. Our employees could leave our company with little or no prior notice and would be free to work for a competitor. In addition, changes to U.S. immigration policies, particularly to H-1B and other visa programs, could restrain the flow of technical and professional talent into the U.S. and may inhibit our ability to hire qualified personnel. If one or more of our senior executives or other key personnel were unable or unwilling to continue in their present positions, we may not be able to replace them easily or at all, and other senior management may be required to divert attention from other aspects of the business. In addition, we do not have “key person” life insurance policies covering any member of our management team or other key personnel. The loss of any of these individuals or any inability to attract or retain qualified personnel, including scientists, engineers and others, could prevent us from pursuing collaborations and materially and adversely affect our support of existing products, product development and introductions, business growth prospects, results of operations and financial condition.

A significant portion of our sales depends on customers’ spending budgets that may be subject to significant and unexpected variation which could have a negative effect on the demand for our products.

Our instruments represent significant capital expenditures for our customers. Current and potential customers for our current or future products include academic and government institutions, genome centers, medical research institutions, clinical laboratories, pharmaceutical, agricultural, biotechnology, diagnostic and chemical companies. Their spending budgets can have a significant effect on the demand for our products. Spending budgets are based on a wide variety of factors, including the allocation of available resources to make purchases, funding from government sources which is highly uncertain and subject to change, the spending priorities among various types of research equipment and policies regarding capital expenditures during economically uncertain periods. Any decrease in capital spending or change in spending priorities of our current and potential customers could significantly reduce the demand for our products. Any delay or reduction in purchases by current or potential customers or our inability to forecast fluctuations in demand could harm our future operating results.

We may not be able to convert our orders in backlog into revenue.

Our backlog represents product orders from our customers that we have confirmed and for which we have not yet recognized revenue. We may not receive revenue from these orders, and any order backlog we report may not be indicative of our future revenue.

Many events can cause an order to be delayed or not completed at all, some of which may be out of our control. If we delay fulfilling customer orders or if customers reconsider their orders, those customers may seek to cancel or modify their orders with us. Customers may otherwise seek to cancel or delay their orders even if we are prepared to fulfill them. If our orders in backlog do not result in sales, our operating results may suffer.

Delivery of our products could be delayed or disrupted by factors beyond our control, and we could lose customers as a result.

We rely on third-party carriers for the timely delivery of our products. As a result, we are subject to carrier disruptions and increased costs that are beyond our control. Any failure to deliver products to our customers in a safe and timely

manner may damage our reputation and brand and could cause us to lose customers. If our relationship with any of these third-party carriers is terminated or impaired or if any of these carriers are unable to deliver our products, the delivery and acceptance of our products by our customers may be delayed, which could harm our business and financial results. The failure to deliver our products in a safe and timely manner may harm our relationship with our customers, increase our costs and otherwise disrupt our operations.

We are, and may become, subject to governmental regulations that may impose burdens on our operations, and the markets for our products may be narrowed.

We are subject, both directly and indirectly, to the adverse impact of government regulation of our operations and markets. For example, export of our instruments may be subject to strict regulatory control in a number of jurisdictions. We have expanded and are continuing to expand the international jurisdictions into which we supply products, which increase the risks surrounding governmental regulations relating to our business. The failure to satisfy export control criteria or to obtain necessary clearances could delay or prevent shipment of products, which could materially and adversely affect our revenue and profitability. Moreover, the life sciences industry, which is expected to continue to be one of the primary markets for our technology, has historically been heavily regulated. There are, for example, laws in several jurisdictions restricting research in genetic engineering, which may narrow our markets. Given the evolving nature of this industry, legislative bodies or regulatory authorities may adopt additional

Table of Contents

regulations that may adversely affect our market opportunities. Additionally, if ethical and other concerns surrounding the use of genetic information, diagnostics or therapies become widespread, there may be less demand for our products.

Our business is also directly affected by a wide variety of government regulations applicable to business enterprises generally and to companies operating in the life science industry in particular. Failure to comply with government regulations or obtain or maintain necessary permits and licenses could result in a variety of fines or other censures or an interruption in our business operations which may have a negative impact on our ability to generate revenue and the cost of operating our business. In addition, changes to laws and government regulations could cause a material adverse effect on our business as we will need to adapt our business to comply with such changes. For example, a governmental prohibition on the use of human in vitro diagnostics would adversely impact our commercialization of products on which we have expended significant research and development resources, which would in turn have a material adverse impact on our business and prospects.

Our products could become subject to regulation by the U.S. Food and Drug Administration or other domestic and international regulatory agencies, which could increase our costs and impede or delay our commercialization efforts, thereby materially and adversely affecting our business and results of operations.

Our products are not currently subject to U.S. Food and Drug Administration (“FDA”) clearance or approval since they are not intended for use in the diagnosis or treatment of disease. However, in the future, certain of our products or related applications, such as those that may be developed for clinical uses, could be subject to FDA regulation, or the FDA’s regulatory jurisdiction could be expanded to include our products. Even where a product is exempted from FDA clearance or approval, the FDA may impose restrictions as to the types of customers to which we or our partners can market and sell our products. Such regulation and restrictions may materially and adversely affect our business, financial condition and results of operations. In the event that we fail to obtain and maintain necessary regulatory clearances or approvals for products that we develop for clinical uses, or if clearances or approvals for future products and indications are delayed or not issued, our commercial operations may be materially harmed. Furthermore, even if we are granted regulatory clearances or approvals, they may include significant limitations on the indicated uses for the product, which may limit the market for the product. We do not have experience in obtaining FDA approvals and no assurance can be given that we will be able to obtain or to maintain such approvals. Furthermore, any approvals that we may obtain can be revoked if safety or efficacy problems develop.

Many countries have laws and regulations that could affect our products, such as 510(k) clearances, premarket approvals or CE Mark requirements, and failure to adhere to applicable statutory or regulatory requirements by us or our business partners would have a material adverse effect on our operations and financial condition. The number and scope of these requirements are increasing. Unlike many of our competitors, this is an area where we do not have expertise. We, or our other third-party sales and distribution partners, may not be able to obtain regulatory approvals in such countries or may incur significant costs in obtaining or maintaining our foreign regulatory approvals. In addition, the export by us of certain of our products, which have not yet been cleared for domestic commercial distribution, may be subject to FDA or other export restrictions. Any action brought against us for violations of these laws or regulations, even if successfully defended, could cause us to incur significant legal expenses and divert our management’s attention from the operation of our business.

Doing business internationally creates operational and financial risks for our business.

We currently conduct operations in various countries and jurisdictions, and continue to expand to new international jurisdictions. We sell directly and through distribution partners throughout Europe, the Asia-Pacific region, Mexico,

and South Africa. As a result, we or our distribution partners may be subject to additional regulations and increased diversion of management time and efforts. Conducting and launching operations on an international scale requires close coordination of activities across multiple jurisdictions and time zones and consumes significant management resources. If we fail to coordinate and manage these activities effectively, our business, financial condition or results of operations could be materially and adversely affected and failure to comply with laws and regulations applicable to business operations in foreign jurisdictions may also subject us to significant liabilities and other penalties. International operations entail a variety of other risks, including, without limitation:

- challenges in staffing and managing foreign operations;
- potentially longer sales cycles and more time required to educate customers on the benefits of our platform outside of the United States;
- the potential need for localized software and documentation;
- reduced protection for intellectual property rights in some countries and practical difficulties of enforcing intellectual property and contract rights abroad;
- U.S. and foreign government trade restrictions, including those which may impose restrictions on importation of programming, technology, or components to or from the U.S.;

Table of Contents

- U.S. government trade restrictions, including those which may impose restrictions, including prohibitions, on the exportation, reexportation, sale, shipment or other transfer of programming, technology, components, and/or services to foreign persons;
- changes in diplomatic and trade relationships, including new tariffs, trade protection measures, import or export licensing requirements, trade embargoes and other trade barriers;
- tariffs imposed by the U.S. on goods from other countries and tariffs imposed by other countries on U.S. goods, including the recently implemented tariffs and additional tariff that have been proposed by the U.S. government on various imports from China, Canada, Mexico and the EU and by the governments of these jurisdictions on certain U.S. goods, and any other possible tariffs that may be imposed on products such as ours, the scope and duration of which, if implemented, remains uncertain;
- deterioration of political relations between the U.S. and Canada, the U.K. and the EU, which could have a material adverse effect on our sales and operations in these countries;
- changes in social, political and economic conditions or in laws, regulations and policies governing foreign trade, manufacturing, development and investment both domestically as well as in the other countries and jurisdictions into which we sell our products, including as a result of the referendum held in the United Kingdom approving the separation of the United Kingdom as a member of the European Union;
- difficulties in obtaining export licenses or in overcoming other trade barriers and restrictions resulting in delivery delays;
- fluctuations in currency exchange rates and the related effect on our results of operations;
- increased financial accounting and reporting burdens and complexities;
- potential increases on tariffs or restrictions on trade generally; and
- significant taxes or other burdens of complying with a variety of foreign laws, including laws relating to privacy and data protection such as the EU General Data Protection Regulation (GDPR) which took effect in the European Union on May 25, 2018.

In conducting our international operations, we are subject to U.S. laws relating to our international activities, such as the Foreign Corrupt Practices Act of 1977, as well as foreign laws relating to our activities in other countries, such as the United Kingdom Bribery Act of 2010. Additionally, the inclusion of one of our foreign customers on any U.S. Government sanctioned persons list, including but not limited to the U.S. Department of Commerce's List of Denied Persons and the U.S. Department of Treasury's List of Specially Designated Nationals and Blocked Persons List, could be material to our earnings. Failure to comply with these laws may subject us to claims or financial and/or other penalties in the United States and/or foreign countries that could materially and adversely impact our operations or financial condition. These risks have become increasingly prevalent as we have expanded our sales into countries that are generally recognized as having a higher risk of corruption.

We face risks related to the current global economic environment, which could delay or prevent our customers from purchasing our products, which could in turn harm our business, financial condition and results of operations. The state of the global economy continues to be uncertain. The current global economic conditions and uncertain credit markets and concerns regarding the availability of credit pose a risk that could impact customer demand for our products, as well as our ability to manage normal commercial relationships with our customers, suppliers and creditors, including financial institutions. If the current global economic environment deteriorates, our business could be negatively affected.

Moreover, changes in the value of the relevant currencies may affect the cost of certain items required in our operations. Changes in currency exchange rates may also affect the relative prices at which we are able sell products in the same market. Our revenue from international customers may be negatively impacted as increases in the U.S.

dollar relative to our international customers' local currencies could make our products more expensive, impacting our ability to compete or as a result of financial or other instability in such locations which could result in decreased sales of our products. Our costs of materials from international suppliers may also increase as the value of the U.S. dollar decreases relative to their local currency. Foreign policies and actions regarding currency valuation could result in actions by the United States and other countries to offset the effects of such fluctuations. Such actions may materially and adversely impact our financial condition and results of operations.

Violations of complex foreign and U.S. laws and regulations could result in fines and penalties, criminal sanctions against us, our officers, or our employees, prohibitions on the conduct of our business and on our ability to offer our products and services in one or more countries, and could also materially affect our brand, our international growth efforts, our ability to attract and retain employees, our business, and our operating results. Even if we implement policies or procedures designed to ensure compliance with these laws and regulations, there can be no assurance that our distribution partners, our employees, contractors, or agents will not violate our policies and subject us to potential claims or penalties.

Enhanced trade tariffs, import restrictions, export restrictions, Chinese regulations or other trade barriers may materially harm our business.

Table of Contents

We are continuing to expand our international operations as part of our growth strategy and have experienced an increasing concentration of sales in certain regions outside the U.S., especially the Asia-Pacific region. In July 2018, the Trump Administration announced a list of thousands of categories of goods that could face tariffs of 10%. It is expected that these tariffs will be finalized after a public comment period ending in early September 2018. If the tariff list remains unaltered, non-U.S. components and materials used in our products could be subject to a 10% tariff assessed on these goods, raising our cost of goods. Furthermore, if tariffs, trade restrictions, or trade barriers are placed on products such as ours by foreign governments, especially China, it could raise prices for our products, which may result in the loss of customers and our business, financial condition and results of operations may be harmed. Additionally, the Trump Administration continues to signal that it may alter trade agreements and terms between China and the United States, including limiting trade with China, and may impose additional tariffs on imports from China. Therefore, it is possible further tariffs may be imposed that could cover imports of components and materials used in our products, or our business may be adversely impacted by retaliatory trade measures taken by China or other countries, including restricted access to components or materials used in our products, causing us to raise prices or make changes to our operations, which could materially harm our business, financial condition and results of operations. Further, the continued threats of tariffs, trade restrictions, and trade barriers could have a generally disruptive impact on the global economy and, therefore, negatively impact our sales. Given the relatively fluid regulatory environment in China and the United States, there could be additional tax or other regulatory changes in the future. Any such changes could directly and adversely impact our financial results and results of operations.

Our international sales and international operations subject us to additional risks that can adversely affect our results of operations and financial condition.

We are continuing to expand our international operations as part of our growth strategy and have experienced an increasing concentration of sales in certain regions outside the U.S., especially the Asia-Pacific region. We currently have a significant portion of our sales and customer support personnel in Europe and the Asia-Pacific region. However, we rely more on third party sales and distribution partners for non-U.S. sales. Our ability to convince customers to adopt our platform and to expand usage of our platform often requires our direct engagement with customers. To the extent we are unable to engage with non-U.S. customers, we may struggle to grow sales in international markets, which could harm our business, financial condition, results of operations and prospects.

Our business could be negatively impacted by changes in the United States political environment.

There is significant ongoing uncertainty with respect to potential legislation, regulation and government policy at the federal level, as well as the state and local levels. Any such changes could significantly impact our business as well as the markets in which we compete. Specific legislative and regulatory proposals discussed during election campaigns and more recently that might materially impact us include, but are not limited to, changes to spending priorities and potential reductions in research funding. Uncertainty about U.S. government funding has posed, and may continue to pose, a risk as customers may choose to postpone or reduce spending in response to actual or anticipated restraints on funding. To the extent changes in the political environment have a negative impact on us or on our markets, our business, results of operation and financial condition could be materially and adversely impacted in the future.

Table of Contents

Our sales cycle is unpredictable and lengthy, which makes it difficult to forecast revenue and may increase the magnitude of quarterly or annual fluctuations in our operating results.

The sales cycle for our sequencing instruments is lengthy because they represent a major capital expenditure and generally require the approval of our customers' senior management. This may contribute to substantial fluctuations in our quarterly or annual operating results, particularly during the periods in which our sales volume is low. Factors that may cause fluctuations in our quarterly or operating results include, without limitation, market acceptance for our products; our ability to attract new customers; publications of studies by us, competitors or third parties; the timing and success of new product introductions by us or our competitors or other changes in the competitive dynamics of our industry, such as consolidation; the amount and timing of our costs and expenses; changes in our pricing policies or those of our competitors; general economic, industry and market conditions; the effects of seasonality; the regulatory environment; expenses associated with warranty costs or unforeseen product quality issues; the hiring, training and retention of key employees, including our ability to grow our sales organization; litigation or other claims against us for intellectual property infringement or otherwise; our ability to obtain additional financing as necessary; and changes or trends in new technologies and industry standards. Because of these fluctuations, it is likely that in some future quarters our operating results will fall below the expectations of securities analysts or investors. If that happens, the market price of our stock would likely decrease. Past fluctuations in our quarterly and annual operating results have resulted in decreases in our stock price. Such fluctuations also mean that investors may not be able to rely on our operating results in any particular period as an indication of future performance. Sales to existing customers and the establishment of a business relationship with other potential customers is a lengthy process, generally taking several months and sometimes longer. Following the establishment of the relationship, the negotiation of purchase terms can be time-consuming, and a potential customer may require an extended evaluation and testing period. 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 canceled 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 our lengthy sales cycle, the realization of revenue 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.

Seasonality may cause fluctuations in our revenue and results of operations.

We operate on a December 31st year-end and believe that there are significant seasonal factors which may cause sales of our products, and particularly our sequencing instruments, to vary on a quarterly or yearly basis, contribute to the lengthy sales cycle for our sequencing instruments, and increase the magnitude of quarterly or annual fluctuations in our operating results. We believe that this seasonality results from a number of factors, including the procurement and budgeting cycles of many of our customers, especially government-funded customers, which cycles often coincide with government fiscal year ends. For example, the U.S. government's fiscal year-end occurs in our third quarter and may result in increased sales of our products during this quarter if government-funded customers have unused funds that may be forfeit, or future budgets that may be reduced, if such funds remain unspent at such fiscal year-end. Furthermore, celebrations of the Lunar New Year, which occurs during our first quarter, may last for a week or longer, during which time many of our customers' offices in China and elsewhere in the Asia-Pacific region may be closed due to the holiday, and have in the past caused, and may in the future cause, decreased sales of our consumables during such quarter. These factors have contributed, and may contribute in the future, to substantial fluctuations in our quarterly operating results. Because of these fluctuations, it is possible that in some quarters our operating results will fall below the expectations of securities analysts or investors. If that happens, the market price of our stock would likely decrease. These fluctuations, among other factors, also mean that our operating results in any particular period may not be relied upon as an indication of future performance. Seasonal or cyclical variations in our sales have in the

past, and may become in the future, more, or less pronounced over time, and has in the past materially affected, and may in the future materially affect, our business, financial condition, results of operations and prospects.

If we fail to comply with healthcare and other governmental regulations, we could face substantial penalties and our business, results of operations and financial condition could be adversely affected.

The products that we may develop for clinical uses may be highly regulated, and there can be no assurance that the regulatory environment in which we would operate will not change significantly and adversely in the future. Any arrangements with physicians, hospitals and clinics may expose us to broadly applicable fraud and abuse and other laws and regulations that may restrict the financial arrangements and relationships through which we market, sell and distribute our products and services. Our employees, consultants, and commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements. Federal and state healthcare and other laws and regulations that may affect our ability to conduct business, include, without limitation:

- federal and state laws and regulations regarding billing and claims payment applicable to products that we may develop for clinical uses, and regulatory agencies enforcing those laws and regulations;
- the federal Anti-Kickback Statute, which prohibits, among other things, any person from knowingly and willfully offering, soliciting, receiving or providing remuneration, directly or indirectly, in exchange for or to induce either the

Table of Contents

referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal healthcare programs;

- the federal False Claims Act, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, false claims, or knowingly using false statements, to obtain payment from the federal government;
- federal criminal laws that prohibit executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- the FCPA, the U.K. Bribery Act of 2010, and other local anti-corruption laws that apply to our international activities;
- the federal Physician Payment Sunshine Act, or Open Payments, created under the Affordable Care Act, and its implementing regulations, which requires manufacturers of drugs, medical devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid, or the Children's Health Insurance Program to report annually to the U.S. Department of Health and Human Services, or HHS, information related to payments or other transfers of value made to licensed physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and its implementing regulations, and other laws and regulations relating to privacy and data protection including the European Union's new GDPR, which impose certain requirements relating to the privacy, security and transmission of individually identifiable health information; HIPAA also created criminal liability for knowingly and willfully falsifying or concealing a material fact or making a materially false statement in connection with the delivery of or payment for healthcare benefits, items or services;
- the federal physician self-referral prohibition, commonly known as the Stark Law; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers, and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or Affordable Care Act, was enacted in 2010. The Affordable Care Act, among other things, amends the intent requirement of the federal Anti-Kickback Statute and criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. In addition, the Affordable Care Act provides that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act.

Because of the breadth of these laws and the narrowness of available statutory and regulatory exemptions, it is possible that some of our activities could be subject to challenge under one or more of such laws. Any action brought against us for violations of these laws or regulations, even successfully defended, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. We may be subject to private "qui tam" actions brought by individual whistleblowers on behalf of the federal or state governments, with potential liability under the federal False Claims Act including mandatory treble damages and significant per-claim penalties.

The growth of our business and sales organization and our expansion outside of the United States may increase the potential of violating these laws. The risk of our being found in violation of these or other laws and regulations is further increased by the fact that many have not been fully interpreted by the regulatory authorities or the courts, and their provisions are open to a variety of interpretations. Any action brought against us for violation of these or other

laws or regulations, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. If our operations are found to be in violation of any of the federal, state and foreign laws described above or any other current or future fraud and abuse or other healthcare laws and regulations that apply to us, we may be subject to penalties, including significant criminal, civil, and administrative penalties, damages, fines, imprisonment, for individuals, exclusion from participation in government programs, such as Medicare and Medicaid, and we could be required to curtail or cease certain of our operations. Any of the foregoing consequences could seriously harm our business and our financial results.

Table of Contents

If we fail to maintain proper and effective internal controls, our ability to produce accurate financial statements on a timely basis could be impaired, which would adversely affect our business and our stock price.

Ensuring that we have adequate internal financial and accounting controls and procedures in place to produce accurate financial statements on a timely basis is a costly and time-consuming effort that needs to be evaluated frequently. We may in the future discover areas of our internal financial and accounting controls and procedures that need improvement. Operating as a public company requires sufficient resources within the accounting and finance functions in order to produce timely financial information, ensure the level of segregation of duties, and maintain adequate internal control over financial reporting customary for a U.S. public company.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States, or U.S. GAAP. Our management does not expect that our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within our company will have been detected.

Pursuant to Section 404 of the Sarbanes-Oxley Act, we perform periodic evaluations of our internal control over financial reporting. While we have in the past performed this evaluation and concluded that our internal control over financial reporting was operating effectively, there can be no assurance that in the future material weaknesses or significant deficiencies will not exist or otherwise be discovered. In addition, if we are unable to produce accurate financial statements on a timely basis, investors could lose confidence in the reliability of our financial statements, which could cause the market price of our common stock to decline and make it more difficult for us to finance our operations and growth.

Our ability to use net operating losses to offset future taxable income may be subject to substantial limitations, and changes to U.S. tax laws may cause us to make adjustments to our financial statements.

Under Section 382 of the Internal Revenue Code, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-change net operating losses ("NOLs") to offset future taxable income. We believe that we have had one or more ownership changes, as a result of which our existing NOLs are currently subject to limitation. Future changes in our stock ownership could result in additional ownership changes under Section 382. We may not be able to utilize a material portion of our NOLs even if we attain profitability.

Furthermore, the changes to deductions, credits and expense recognition resulting in the Tax Cuts and Jobs Act of 2018 (the "Tax Act") enacted on December 22, 2017 will have a material impact to the value of our deferred tax assets and liabilities, which could in turn adversely affect our future taxable income and effective tax rate. In addition, as a result of the Tax Act we have had to make significant adjustments and expect to continue to make adjustments for future periods, to the provisional amounts for income taxes and effective tax rates. The total provisional adjustments to our tax provision for the year ended December 31, 2017 is a non-cash impact of $113.0 million.

Our operations involve the use of hazardous materials, and we must comply with environmental, health and safety laws, which can be expensive and may adversely affect our business, operating results and financial condition.

Our research and development and manufacturing activities involve the use of hazardous materials, including chemicals and biological materials, and some of our products include hazardous materials. Accordingly, we are subject to federal, state, local and foreign laws, regulations and permits relating to environmental, health and safety matters, including, among others, those governing the use, storage, handling, exposure to and disposal of hazardous materials and wastes, the health and safety of our employees, and the shipment, labeling, collection, recycling, treatment and disposal of products containing hazardous materials. Liability under environmental laws and regulations can be joint and several and without regard to fault or negligence. For example, under certain circumstances and under certain environmental laws, we could be held liable for costs relating to contamination at our or our predecessors' past or present facilities and at third-party waste disposal sites. We could also be held liable for damages arising out of human exposure to hazardous materials. There can be no assurance that violations of environmental, health and safety laws will not occur as a result of human error, accident, equipment failure or other causes. The failure to comply with past, present or future laws could result in the imposition of substantial fines and penalties, remediation costs, property damage and personal injury claims, investigations, the suspension of production or product sales, loss of permits or a cessation of operations. Any of these events could harm our business, operating results and financial condition. We also expect that our operations will be affected by new environmental, health and safety laws and regulations on an ongoing basis, or more stringent enforcement of existing laws and regulations. New laws or changes to existing laws may result in additional costs and may increase penalties associated with

Table of Contents

violations or require us to change the content of our products or how we manufacture them, which could have a material adverse effect on our business, operating results and financial condition.

Our facilities in California are located near earthquake faults, and the occurrence of an earthquake or other catastrophic disaster could cause damage to our facilities and equipment, which could require us to cease or curtail operations.

Our facilities in the San Francisco Bay Area are located near earthquake fault zones and are vulnerable to damage from earthquakes. We are also vulnerable to damage from other types of disasters, including fire, floods, power loss, communications failures and similar events. If any disaster were to occur, our ability to operate our business at our facilities would be seriously, or potentially completely, impaired. In addition, the nature of our activities could cause significant delays in our research programs and commercial activities and make it difficult for us to recover from a disaster. The insurance we maintain may not be adequate to cover our losses resulting from disasters or other business interruptions. Accordingly, an earthquake or other disaster could materially and adversely harm our ability to conduct business.

Ethical, legal, privacy and social concerns or governmental restrictions surrounding the use of genetic information could reduce demand for our technology.

Our products may be used to provide genetic information about humans, agricultural crops and other living organisms. The information obtained from our products could be used in a variety of applications which may have underlying ethical, legal, privacy and social concerns, including the genetic engineering or modification of agricultural products or testing for genetic predisposition for certain medical conditions. Governmental authorities could, for safety, social or other purposes, call for limits on or regulation of the use of genetic testing. Such concerns or governmental restrictions could limit the use of our products, which could have a material adverse effect on our business, financial condition and results of operations.

Disruption of critical information technology systems or material breaches in the security of our systems could harm our business, customer relations and financial condition.

Information technology (“IT”) helps us to operate efficiently, interface with customers, maintain financial accuracy and efficiently and accurately produce our financial statements. IT systems are used extensively in virtually all aspects of our business, including sales forecast, order fulfillment and billing, customer service, logistics, and management of data from running samples on our products. Our success depends, in part, on the continued and uninterrupted performance of our IT systems. IT systems may be vulnerable to damage from a variety of sources, including telecommunications or network failures, power loss, natural disasters, human acts, computer viruses, computer denial-of-service attacks, unauthorized access to customer or employee data or company trade secrets, and other attempts to harm our systems. Certain of our systems are not redundant, and our disaster recovery planning is not sufficient for every eventuality. Despite any precautions we may take, such problems could result in, among other consequences, disruption of our operations, which could harm our reputation and financial results.

If we do not allocate and effectively manage the resources necessary to build and sustain the proper IT infrastructure, we could be subject to transaction errors, processing inefficiencies, loss of customers, business disruptions or loss of or damage to intellectual property through security breach. If our data management systems do not effectively collect, store, process and report relevant data for the operation of our business, whether due to equipment malfunction or constraints, software deficiencies or human error, our ability to effectively plan, forecast and execute our business plan and comply with applicable laws and regulations will be impaired, perhaps materially. Any such impairment

could materially and adversely affect our reputation, financial condition, results of operations, cash flows and the timeliness with which we report our internal and external operating results.

Security breaches and other disruptions could compromise our information and expose us to liability, which would cause our business and reputation to suffer.

In the ordinary course of our business, we collect and store sensitive data, including intellectual property, our proprietary business information and that of our customers, suppliers and business partners, and personally identifiable information of our customers and employees, in our data centers and on our networks. The secure processing, maintenance and transmission of this information is critical to our operations. Despite our security measures, our IT infrastructure may be vulnerable to attacks by hackers, computer viruses, malicious codes, unauthorized access attempts, and cyber- or phishing-attacks, or breached due to employee error, malfeasance, faulty password management or other disruptions. Third parties may attempt to fraudulently induce employees or other persons into disclosing user names, passwords or other sensitive information, which may in turn be used to access our IT systems, commit identity theft or carry out other unauthorized or illegal activities. Any such breach could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, disruption of our operations and damage to our reputation, which could divert our management’s attention from the operation of our business and materially and adversely affect our business, revenues and competitive position. Moreover, we may

Table of Contents

need to increase our efforts to train our personnel to detect and defend against cyber- or phishing-attacks, which are becoming more sophisticated and frequent, and we may need to implement additional protective measures to reduce the risk of potential security breaches, which could cause us to incur significant additional expenses.

Regulations related to conflict minerals has caused us to incur, and will continue to cause us to incur, additional expenses and could limit the supply and increase the costs of certain materials used in the manufacture of our products.

We are subject to requirements under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 that require us to conduct diligence, and report whether or not our products contain conflict minerals. The implementation of these requirements could adversely affect the sourcing, availability and pricing of the materials used in the manufacture of components used in our products. Furthermore, the complex nature of our products requires components and materials that may be available only from a limited number of sources and, in some cases, from only a single source. We have incurred, and will continue to incur, additional costs to comply with the disclosure requirements, including costs related to conducting diligence procedures to determine the sources of conflict minerals that may be used or necessary to the production of our products and, if applicable, potential changes to components, processes or sources of supply as a consequence of such verification activities. We may face reputational harm if we determine that certain of our products contain minerals that are not determined to be conflict free or if we are unable to alter our processes or sources of supply to avoid using such materials. Reputational harm could materially and adversely affect our business, financial condition or results of operations.

Risks Related to Our Intellectual Property

Failure to secure patent or other intellectual property protection for our products and improvements to our products may reduce our ability to maintain any technological or competitive advantage over our current and potential competitors.

Our ability to protect and enforce our intellectual property rights is uncertain and depends on complex legal and factual questions. Our ability to establish or maintain a technological or competitive advantage over our competitors may be diminished because of these uncertainties. For example:

- we or our licensors might not have been the first to make the inventions covered by each of our pending patent applications or issued patents;
- we or our licensors might not have been the first to file patent applications for these inventions;
- it is possible that neither our pending patent applications nor the pending patent applications of our licensors will result in issued patents;
- the scope of the patent protection we or our licensors obtain may not be sufficiently broad to prevent others from practicing our technologies, developing competing products, designing around our patented technologies or independently developing similar or alternative technologies;
- our and our licensors' patent applications or patents have been, are and may in the future be, subject to interference, opposition or similar administrative proceedings, which could result in those patent applications failing to issue as patents, those patents being held invalid or the scope of those patents being substantially reduced;
- we or our partners may not adequately protect our trade secrets;
- we may not develop additional proprietary technologies that are patentable; or
- the patents of others may limit our freedom to operate and prevent us from commercializing our technology in accordance with our plans.

The occurrence of any of these events could impair our ability to operate without infringing upon the proprietary rights of others or prevent us from establishing or maintaining a competitive advantage over our competitors.

Variability in intellectual property laws may adversely affect our intellectual property position.

Intellectual property laws, and patent laws and regulations in particular, have been subject to significant variability either through administrative or legislative changes to such laws or regulations or changes or differences in judicial interpretation, and it is expected that such variability will continue to occur. Additionally, intellectual property laws and regulations differ by country. Variations in the patent laws and regulations or in interpretations of patent laws and regulations in the United States and other countries may diminish the value of our intellectual property and may change the impact of third-party intellectual property on us. Accordingly, we cannot predict the scope of the patents that may be granted to us with certainty, the extent to which we will be able to enforce our patents against third parties or the extent to which third parties may be able to enforce their patents against us.

Table of Contents

Some of the intellectual property that is important to our business is owned by other companies or institutions and licensed to us, and changes to the rights we have licensed may adversely impact our business.

We license from third parties some of the intellectual property that is important to our business. If we fail to meet our obligations under these licenses, or if we have a dispute regarding the terms of the licenses, these third parties could terminate the licenses. If the third parties who license intellectual property to us fail to maintain the intellectual property that we have licensed, or lose rights to that intellectual property, the rights we have licensed may be reduced or eliminated, which could subject us to claims of intellectual property infringement. Termination of these licenses or reduction or elimination of our licensed rights may result in our having to negotiate new or reinstated licenses with less favorable terms, or could subject us to claims of intellectual property infringement or contract breach in litigation or other administrative proceedings that could result in damage awards against us and injunctions that could prohibit us from selling our products. In addition, some of our licenses from third parties limit the field in which we can use the licensed technology. Therefore, in order for us to use such licensed technology in potential future applications that are outside the licensed field of use, we may be required to negotiate new licenses with our licensors or expand our rights under our existing licenses. We cannot assure you that we will be able to obtain such licenses or expanded rights on reasonable terms or at all. In the event a dispute with our licensors were to occur, our licensors may seek to renegotiate the terms of our licenses, increase the royalty rates that we pay to obtain and maintain those licenses, limit the field or scope of the licenses, or terminate the license agreements. In addition, we have limited rights to participate in the prosecution and enforcement of the patents and patent applications that we have licensed. As a result, we cannot be certain that these patents and applications will be prosecuted and enforced in a manner consistent with the best interests of our business. Further, because of the rapid pace of technological change in our industry, we may need to rely on key technologies developed or licensed by third parties, and we may not be able to obtain licenses and technologies from these third parties at all or on reasonable terms. The occurrence of these events may have a material adverse effect on our business, financial condition or results of operations.

The measures that we use to protect the security of and enforce our intellectual property and other proprietary rights may not be adequate, which could result in the loss of legal protection for, and thereby diminish the value of, such intellectual property and other rights.

In addition to patents, we also rely upon trademarks, trade secrets, copyrights and unfair competition laws, as well as license agreements and other contractual provisions, to protect our intellectual property and other proprietary rights. Despite these measures, any of our intellectual property rights could be challenged, invalidated, circumvented or misappropriated. In addition, we attempt to protect our intellectual property and proprietary information by requiring our employees and consultants to enter into confidentiality and assignment of inventions agreements, and by entering into confidentiality agreements with our third-party development, manufacturing, sales and distribution partners, who may also acquire, develop and/or commercialize alternative or competing products or provide services to our competitors. For example, Roche had certain access to our trade secrets and other proprietary information pursuant to our agreement with Roche, subject to the confidentiality provisions thereof (certain of which provisions survive the termination of the agreement); however, Roche is developing potentially competing sequencing products. There can be no assurance that our measures will provide adequate protection for our intellectual property and proprietary information. These agreements may be breached, and we may not have adequate remedies for any such breach. In addition, our trade secrets and other proprietary information may be disclosed to others, or others may gain access to or disclose our trade secrets and other proprietary information. Enforcing a claim that a third party illegally obtained and is using our trade secrets is expensive and time consuming, and the outcome is unpredictable. Additionally, others may independently develop proprietary information and techniques that are substantially equivalent to ours. The occurrence of these events may have a material adverse effect on our business, financial condition or results of operations.

Our intellectual property may be subject to challenges in the United States or foreign jurisdictions that could adversely affect our intellectual property position.

Our pending, issued and granted U.S. and foreign patents and patent applications have been, are and may in the future be, subject to challenges by third parties asserting prior invention by others or invalidity on various grounds, through proceedings, such as interferences, reexaminations or opposition proceedings. Addressing these challenges to our intellectual property has been, and any future challenges can be, costly and distract management's attention and resources. For example, we previously incurred significant legal expenses to litigate and settle a complaint seeking review of a patent interference decision of the U.S. Patent and Trademark Office. Additionally, as a result of these challenges, our patents or pending patent applications may be determined to be unpatentable to us, invalidated or unenforceable in whole or in part. Accordingly, adverse rulings in these proceedings may negatively impact the scope of our intellectual property protection for our products and technology, and may materially and adversely affect our business.

Table of Contents

Some of our technology is subject to “march-in” rights by the U.S. government.

Some of our patented technology was developed with U.S. federal government funding. When new technologies are developed with U.S. government funding, the government obtains certain rights in any resulting patents, including a nonexclusive license authorizing the government to use the invention for non-commercial purposes. These rights may permit the government to disclose our confidential information to third parties and to exercise “march-in” rights to use or allow third parties to use our patented technology. The government can exercise its march-in rights if it determines that such action is necessary to (i) achieve practical application of the U.S. government-funded technology, (ii) alleviate health or safety needs, (iii) meet requirements of federal regulations, or (iv) give preference to U.S. industry. In addition, U.S. government-funded inventions must be reported to the government and such government funding must be disclosed in any resulting patent applications. Furthermore, our rights in such inventions are subject to government license rights and foreign manufacturing restrictions.

We are involved in legal proceedings to enforce our intellectual property rights.

Our intellectual property rights involve complex factual, scientific and legal questions. We operate in an industry characterized by significant intellectual property litigation. Even though we may believe that we have a valid patent on a particular technology, other companies have from time to time taken, and may in the future take, actions that we believe violate our patent rights. For example, we have been and are involved in several legal proceedings for patent infringement and related matters with ONT and Harvard University in several United States and European jurisdictions. We have received adverse rulings against us with respect to our complaint with the USITC in one of these proceedings, and there are no assurances that we can be successful in appealing or otherwise overturning any such rulings. Legal actions to enforce our patent rights have been, and will continue to be, expensive, and may divert significant management time and resources. Adverse parties from previous legal actions have brought, and may in the future bring, claims against us and/or our intellectual property. Litigation is a significant ongoing expense, recognized in sales, general and administrative expense, with an uncertain outcome, and has been, and may in the future be, a material expense for the Company. Our enforcement actions may not be successful, have given rise to legal claims against us and could result in some of our intellectual property rights being determined to be invalid or not enforceable. Furthermore, an adverse determination or judgement could lead to an award of damages against us, or the issuance of an injunction against us that could prevent us from selling any products found to be infringing the intellectual property rights of another party

We have been, are currently, and could in the future be, subject to legal proceedings with third parties who may claim that our products infringe or misappropriate their intellectual property rights.

Our products are based on complex, rapidly developing technologies. We may not be aware of issued or previously filed patent applications that belong to third parties that mature into issued patents that cover some aspect of our products or their use. In addition, because patent litigation is complex and the outcome inherently uncertain, our belief that our products do not infringe third-party patents of which we are aware or that such third-party patents are invalid and unenforceable may be determined to be incorrect. As a result, third parties have claimed, and may in the future claim, that we infringe their patent rights and have filed, and may in the future file, lawsuits or engage in other proceedings against us to enforce their patent rights. For example, ONT Ltd. and Harvard University previously filed claims against us in the High Court of England and Wales and the District Court of Mannheim, Germany for patent infringement. We are aware of other issued patents and patent applications owned by third parties that could be construed to read on our products and services. Although we do not believe that our products or services infringe any valid issued patents, the third-party owners of these patents and applications may in the future claim that we infringe their patent rights and file lawsuits against us. In addition, as we enter new markets, our competitors and other third

parties may claim that our products infringe their intellectual property rights as part of a business strategy to impede our successful entry into those markets. Furthermore, parties making claims against us may be able to obtain injunctive or other relief, which effectively could block our ability to develop further, commercialize, or sell products or services, and could result in the award of substantial damages against us. Patent litigation between competitors in our industry is common. Additionally, we have certain obligations to many of our customers and suppliers to indemnify and defend them against claims by third parties that our products or their use infringe any intellectual property of these third parties. In defending ourselves against any of these claims, we have in the past incurred, and could in the future incur, substantial costs, and the attention of our management and technical personnel could be diverted. For example, we previously incurred significant legal expenses to litigate and settle a complaint alleging patent infringement. Even if we have an agreement that indemnifies us against such costs, the indemnifying party may be unable to uphold its contractual obligations. To avoid or settle legal claims, it may be necessary or desirable in the future to obtain licenses relating to one or more products or relating to current or future technologies, which could negatively affect our gross margins. We may not be able to obtain these licenses on commercially reasonable terms, or at all. We may be unable to modify our products so that they do not infringe the intellectual property rights of third parties. In some situations, the results of litigation or settlement of claims may require us to cease allegedly infringing activities which could prevent us from selling some or all of our products. The occurrence of these events may have a material adverse effect on our business, financial condition or results of operations.

Table of Contents

In addition, in the course of our business, we may from time to time have access or be alleged to have access to confidential or proprietary information of others, which, though not patented, may be protected as trade secrets. Others could bring claims against us asserting that we improperly used their confidential or proprietary information, or that we misappropriated their technologies and incorporated those technologies into our products. A determination that we illegally used the confidential or proprietary information or misappropriated technologies of others in our products could result in us paying substantial damage awards or being prevented from selling some or all of our products, which could materially and adversely affect our business.

We have not yet registered some of our trademarks in all of our potential markets, and failure to secure those registrations could adversely affect our business.

Some of our trademark applications may not be allowed for registration, and our registered trademarks may not be maintained or enforced. In addition, in the U.S. Patent and Trademark Office and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings.

Our use of “open source” software could adversely affect our ability to sell our products and subject us to possible litigation.

A portion of the products or technologies developed and/or distributed by us incorporate “open source” software, and we may incorporate open source software into other products or technologies in the future. Some open source software licenses require that we disclose the source code for any modifications to such open source software that we make and distribute to one or more third parties, and that we license the source code for such modifications to third parties, including our competitors, at no cost. We monitor the use of open source software in our products to avoid uses in a manner that would require us to disclose or grant licenses under our source code that we wish to maintain as proprietary; however, there can be no assurance that such efforts have been or will be successful. In some circumstances, distribution of our software that includes or is linked with open source software could require that we disclose and license some or all of our proprietary source code in that software, which could include permitting the use of such software and source code at no cost to the user. Open source license terms are often ambiguous and there is little legal precedent governing the interpretation of these licenses. Successful claims made by the licensors of open source software that we have violated the terms of these licenses could result in unanticipated obligations, including being subject to significant damages, being enjoined from distributing products that incorporate open source software and being required to make available our proprietary source code pursuant to an open source license, which could substantially help our competitors develop products that are similar to or better than ours or otherwise materially and adversely affect our business.

Risks Related to Owning Our Common Stock

The price of our common stock has been, is, and may continue to be, highly volatile, and you may be unable to sell your shares at or above the price you paid to acquire them.

The market price of our common stock is highly volatile, and we expect it to continue to be volatile for the foreseeable future in response to many risk factors listed in this section, and others beyond our control, including:

- actual or anticipated fluctuations in our financial condition and operating results;
- announcements of new products, technological innovations or strategic partnerships by us or our competitors;
- announcements by us, our customers, partners or suppliers relating directly or indirectly to our products, services or technologies;
- overall conditions in our industry and market;
- addition or loss of significant customers;
- changes in laws or regulations applicable to our products;
- actual or anticipated changes in our growth rate relative to our competitors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures, capital commitments or achievement of significant milestones;
- additions or departures of key personnel;
- competition from existing products or new products that may emerge;
- issuance of new or updated research or reports by securities analysts;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- disputes or other developments related to proprietary rights, including patents, litigation matters or our ability to obtain intellectual property protection for our technologies;
- announcement or expectation of additional financing efforts;

Table of Contents

- sales of our common stock by us or our stockholders;
- stock price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- reports, guidance and ratings issued by securities or industry analysts; and
- general economic and market conditions.

If any of the forgoing occurs, it would cause our stock price or trading volume to decline. Stock markets in general and the market for companies in our industry in particular have experienced price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or international currency fluctuations, may negatively impact the market price of our common stock. You may not realize any return on your investment in us and may lose some or all of your investment. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We have been a party to this type of litigation in the past and may be the target of this type of litigation again in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

Future sales of our common stock could cause our stock price to fall.

We maintain a shelf registration statement on Form S-3 with the SEC pursuant to which we may, from time to time, sell up to an aggregate of $150 million of our common stock, preferred stock, depositary shares, warrants, debt securities or units. We have sold, and plan in the future to sell, shares of our common stock in underwritten offerings and have established, and may in the future establish, "at-the-market" offering programs pursuant to which we may offer and sell shares of our common stock. Sales of securities have resulted and will continue to result in dilution of our existing stockholders, and such sales could cause our stock price to fall.

In addition, if our existing stockholders sell, or indicate an intent to sell, a large number of shares of our common stock in the public market, it could cause our stock price to fall. We may also issue shares of common stock or securities convertible into our common stock from time to time in connection with financings, acquisitions, investments or otherwise. Any such issuance would result in dilution to our existing stockholders and could cause our stock price to fall.

Concentration of ownership by our principal stockholders may result in control by such stockholders of the composition of our board of directors.

Our existing principal stockholders, executive officers, directors and their affiliates beneficially own a significant number of our outstanding shares of common stock. In addition, such parties may acquire additional control by purchasing stock that we issue in connection with our future fundraising efforts. As a result, these stockholders may now and in the future be able to exercise a significant level of control over all matters requiring stockholder approval, including the election of directors. This control could have the effect of delaying or preventing a change of control of our company or changes in management and will make the approval of certain transactions difficult or impossible without the support of these stockholders.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management and limit the market price of our common stock.

Provisions in our certificate of incorporation and bylaws, as amended and restated, may have the effect of delaying or preventing a change of control or changes in our management. Our amended and restated certificate of incorporation and bylaws include provisions that:

- authorize our board of directors to issue, without further action by the stockholders, up to 50,000,000 shares of undesignated preferred stock and up to approximately 1,000,000,000 shares of authorized but unissued shares of common stock;
- require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;
- specify that special meetings of our stockholders can be called only by our board of directors, the Chairman of the Board, the Chief Executive Officer or the President;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- establish that our board of directors is divided into three classes, Class I, Class II and Class III, with each class serving staggered terms;
- provide that our directors may be removed only for cause; and

Table of Contents

- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us.

Our large number of authorized but unissued shares of common stock may potentially dilute existing stockholders' stockholdings.

We have a significant number of authorized but unissued shares of common stock. Our board of directors may issue shares of common stock from this authorized but unissued pool from time to time without stockholder approval, resulting in the dilution of our existing stockholders.

We do not intend to pay dividends for the foreseeable future.

We have never declared or paid any dividends on our common stock and do not intend to pay any dividends in the foreseeable future. In addition, the terms of our existing debt agreement restrict our ability to pay dividends on our common stock. We anticipate that we will retain all of our future earnings for use in the operation of our business and for general corporate purposes. Any determination to pay dividends in the future will be at the discretion of our board of directors. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments.

Table of Contents

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

Not applicable.

Item 3.Default Upon Senior Securities

Not applicable.

Item 4.Mine Safety Disclosures

Not applicable.

Item 5.Other Information

None

Item 6.Exhibits

		Incorporated by reference herein		
Exhibit Number	Description	Form	Exhibit No.	Filing Date
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002			
31.2	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002			
32.1*	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002			
32.2*	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002			
101.INS	XBRL Instance Document			
101.SCH	XBRL Taxonomy Extension Schema Document			
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document			
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document			
101.LAB	XBRL Taxonomy Extension Labels Linkbase Document			
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document			

*The certifications attached as Exhibit 32.1 and 32.2 that accompany this Quarterly Report on Form 10-Q are deemed furnished and not filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of Pacific Biosciences of California, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Quarterly Report on Form 10-Q, irrespective of any general incorporation language contained in such filing

Table of Contents

Signatures

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

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

Date: August 3, 2018

By: /s/ SUSAN K. BARNES

Susan K. Barnes
Executive Vice President, Chief Financial Officer and

Principal Accounting Officer