NRG ENERGY, INC.
Form DFAN14A
July 02, 2009

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

SCHEDULE 14A

(RULE 14a-101)

SCHEDULE 14A INFORMATION

Proxy Statement Pursuant to Section 14(a)

of the Securities Exchange Act of 1934

Filed by the Registrant ¨

Filed by a Party other than the Registrant x

Check the appropriate box:

¨ Preliminary Proxy Statement.

¨ **Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2)).**

¨ Definitive Proxy Statement.

x Definitive Additional Materials.

¨ Soliciting Material Pursuant to §240.14a-12.

NRG ENERGY, INC.

(Name of Registrant as Specified in its Charter)

EXELON CORPORATION

(Name of Person(s) Filing Proxy Statement, if Other Than the Registrant)

Payment of Filing Fee (Check the appropriate box):

x No fee required.

¨ Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

(1) Title of each class of securities to which the transaction applies:

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(2) Aggregate number of securities to which the transaction applies:

---

(3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

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(4) Proposed maximum aggregate value of the transaction:

(5) Total fee paid:

¨ Fee paid previously with preliminary materials.

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(1) Amount Previously Paid:

(2) Form, Schedule or Registration Statement No.:

(3) Filing Party:

(4) Date Filed:

On July 2, 2009, Exelon Corporation used the following presentation in meetings with RiskMetrics Group and PROXY Governance, Inc.:

Exelon s Offer Is About Value
Today and Tomorrow
Are EXC and NRG Together, or Is NRG Stand Alone, Better Built to Add
Value in a Complex and Carbon-Constrained World?
RiskMetrics Group
PROXY Governance, Inc.
July 2, 2009

Important Information

2

This presentation relates, in part, to the offer (the Offer) by Exelon Corporation (Exelon) through its direct wholly-owned subsidiary, Exelon Xchange Corporation (Xchange), to exchange each issued and outstanding share of common stock (the shares) of NRG Energy, Inc. (NRG) for 0.545 of a share of Exelon common stock. This presentation is for informational purposes only and does not constitute an offer to exchange, or a solicitation of an offer to exchange, NRG shares, nor is it a substitute for the Tender Offer Statement on Schedule TO or the Prospectus/Offer to Exchange included in the Registration Statement on Form S-4 (Reg. No. 333-155278) (including the Letter of Transmittal and related documents and as amended fro time to time, the Exchange Offer Documents) previously filed by Exelon and Xchange with the Securities and Exchange Commission (the SEC). The Offer is made only through the Exchange Offer Documents. **Investors and security holders a** urged to read these documents and other relevant materials as they become available, because they will contain important information.

Exelon filed a proxy statement on Schedule 14A with the SEC on June 17, 2009 in connection with the solicitation of proxies (NRG Meeting Proxy Statement) for the 2009 annual meeting of NRG stockholders (the NRG Meeting). Exelon will also proxy statement on Schedule 14A and other relevant documents with the SEC in connection with its solicitation of proxies for meeting of Exelon shareholders (the Exelon Meeting) to be called in order to approve the issuance of shares of Exelon comm stock pursuant to the Offer (the Exelon Meeting Proxy Statement). **Investors and security holders are urged to read the N** Meeting Proxy Statement and the Exelon Meeting Proxy Statement and other relevant materials as they become available, because they will contain important information.

Investors and security holders can obtain copies of the materials described above (and all other related documents filed with the SEC) at no charge on the SEC s website: www.sec.gov. Copies can also be obtained at no charge by directing a request for su materials to Innisfree M&A Incorporated, 501 Madison Avenue, 20th Floor, New York, New York 10022, toll free at 1-877-75 9501. Investors and security holders may also read and copy any reports, statements and other information filed by Exelon, Xchange or NRG with the SEC, at the SEC public reference room at 100 F Street, N.E., Washington, D.C. 20549. Please call t at 1-800-SEC-0330 or visit the SEC s website for further information on its public reference room.

Exelon, Xchange and the individuals to be nominated by Exelon for election to NRG s Board of Directors will be participants solicitation of proxies from NRG stockholders for the NRG Meeting or any adjournment or postponement thereof. Exelon and Xchange will be participants in the solicitation of proxies from Exelon shareholders for the Exelon Meeting or any adjournmen postponement thereof. In addition, certain directors and executive officers of Exelon and Xchange may solicit proxies for the Exelon Meeting and the NRG Meeting. Information about Exelon and Exelon s directors and executive officers is available in Exelon s proxy statement, dated March 19, 2009, filed with the SEC in connection with Exelon s 2009 annual meeting of shareholders. Information about Xchange and Xchange s directors and executive officers is available in Schedule II to the Prospectus/Offer to Exchange. Information about any other participants is included in the NRG Meeting Proxy Statement or th Exelon Meeting Proxy Statement, as applicable.

Forward-Looking Statements

This presentation includes forward-looking statements. There are a number of risks and uncertainties that could cause actual results to differ materially from the forward-looking statements made herein. The factors that could cause actual results to differ materially from these forward-looking statements include Exelon s ability to achieve the synergies contemplated by the proposed transaction, Exelon s ability to promptly and effectively integrate the businesses of NRG and Exelon, and the timing to consummate the proposed transaction and obtain required regulatory approvals as well as those discussed in (1) the Exchange Offer Documents; (2) Exelon s 2008 Annual Report on Form 10-K in (a) ITEM 1A. Risk Factors, (b) ITEM 7. Management s Discussion and Analysis of Financial Condition and Results of Operations and (c) ITEM 8. Financial Statements and Supplementary Data: Note 18; (3) Exelon s first quarter 2009 Quarterly Report on Form 10-Q filed on April 23, 2009 in (a) Part II, Other Information, ITEM 1A. Risk Factors and (b) Part I, Financial Information, ITEM 1. Financial Statements: Note 13 and (4) other factors discussed in Exelon s filings with the SEC. Readers are cautioned not to place undue reliance on these forward-looking statements, which apply only as of the date of this communication. Exelon does not undertake any obligation to publicly release any revision to its forward-looking statements to reflect events or circumstances after the date of this communication, except as required by law. Statements made in connection with the exchange offer are not subject to the safe harbor protections provided to forward-looking statements under the Private Securities Litigation Reform Act of 1995.

All information in this presentation concerning NRG, including its business, operations, and financial results, was obtained from public sources. While Exelon has no knowledge that any such information is inaccurate or incomplete, Exelon has not had the opportunity to verify any of that information.

3

3

Background
4
4

On October 19, 2008 Exelon announced its proposal to acquire NRG and create the largest, most diverse generation company in the U.S.

100% stock consideration, fixed exchange ratio of 0.485 shares of EXC

for
every
share
of
NRG
representing
an
initial
premium
of
37%

The EXC/NRG combination would be the premier power company in a complex, dynamic industry

Largest
U.S.
power
company
(~48,000
MW
)
with
market
cap
of
~$40
billion and investment grade balance sheet

Significant presence in five major competitive markets (Illinois, Pennsylvania, Texas, California and the Northeast) rather than two or three

Second lowest carbon emitting intensity in the industry

Exelon has **increased its offer 12%**
to 0.545, representing a 44%
4
premium today
4
We are seeking your support to elect nine new, independent NRG directors who will not
constitute a majority of the NRG Board and who will act in the best interest of NRG shareholders

1.
Premium of 37% based on EXC and NRG closing stock prices on October 17, 2008.
2.
Includes owned and contracted capacity after giving effect to planned asset divestitures.
3.
Exelon and NRG market capitalization as of 6/26/09.

4.
44% premium assumes that Exelon and NRG stand-alone stock prices are halfway between the implied stock price based on co
company indices and the current stock price as of 6/26/09.
2
1
3

For NRG Shareholders, a Combination Means:
5
Scope, scale and strength to build on Exelon s proven capacity to

Execute strategic objectives from a solid financial foundation, with ready access to low-cost capital

Realize significant value creation through operational and financial synergies

Diversify across power markets, fuel types and regulatory jurisdictions

Respond to universally recognized need for industry consolidation

Be a significant voice in industry, policy and regulatory discussions

1.
Exelon: Sustainable Advantage
2.
Exelon-NRG: A Clear Strategic Fit
3.
Value for NRG Shareholders
4.
Achievable Plan to Execute Deal
5.
Action Sought
Discussion Points:
6

Multi-Regional Diverse Company
7
Note: Owned megawatts based on Generation s ownership at December 31, 2008, using annual mean ratings for nuclear units (excluding Salem) and summer ratings for Salem and the fossil and hydro units.
Midwest Capacity
Owned:
11,388 MW

Contracted:
3,230 MW
Total:
14,618 MW
ERCOT/South Capacity
Owned:
2,222 MW
Contracted:
2,917 MW
Total:
5,139 MW
New England Capacity
Owned:
182 MW
Total Capacity
Owned:
24,809 MW
Contracted:
6,483 MW
Total:
31,292 MW
Electricity Customers:
1.6M
Gas Customers:
0.5M
Electricity Customers: 3.8M
Generating Plants
Nuclear
Hydro
Coal/Oil/Gas Base-load
Intermediate
Peaker
Mid-Atlantic Capacity
Owned:
11,017 MW
Contracted:
336 MW
Total:
11,353 MW

1.
EXC market capitalization as of 6/26/09.
2.
Shareholder return from Exelon inception (10/20/00) through 6/26/09. Total return after reinvesting all dividends back into the security at the closing price on the day following the relevant ex-dividend date. Includes stock price appreciation with dividen reinvestment. Excludes taxes and fees.
Exelon s Sustainable Advantage
8
Largest
market
capitalization
in
the
sector
at
$33B
and
an
investment
grade balance sheet

Investment
grade
balance
sheet
that
enables
consistent
access
to
capital
at
lower cost
Experienced management team with track record of creating and
returning shareholder value

Exelon
formed
through
combination
of
ComEd
and
PECO

in
2000

total
shareholder return has reached 124% since that time compared to 45% for the
Philadelphia
Utility
Index,
and
a
negative
23%
for
the
S&P
500
2
Largest merchant generator in the U.S. based on power produced

Management team and culture well-experienced and well-suited for today s
complex and competitive markets

19 nuclear
reactors
largest nuclear operator in U.S., third largest in the world

Industry-leading management model that consistently drives highest capacity
factors
(94%)
and
lowest
generating
cost
of
any
nuclear
fleet
in
the
U.S.

A plan to build 1,300-1,500 MW of new nuclear through uprates
Largest carbon upside in the industry

In addition to positive leverage to any upside from gas, coal and capacity
prices
1

Exelon Is Built to Last and Consistently
Creates Value
Operational Prowess
9
Solid Balance Sheet
Consistent Dividends
$10.00
$12.00
$14.00
$16.00
$18.00
$20.00
2003
2004

2005
2006
2007
2008
Exelon
Industry
Nuclear Annual Avg. Production
Cost ($/MWh)
$1.26
$1.60
$1.60
$1.76
$2.03
$0
$0.50
$1.00
$1.50
$2.00
2004
2005
2006
2007
2008
2009E
$2.50
$2.10

Investment
Grade
Rating
(BBB/A3/BBB+)

Broad Access To The Deepest Capital Markets:
-
$4.3 trillion High Grade Bond market
-
$1.2 trillion Commercial Paper market

Lower Cost of Capital:
-
Offers $250 M in aggregate interest savings over the next five years relative to non-investment grade debt pricing

Financial and Operational Flexibility:
-
Ability to negotiate hedging transactions with better margining terms or avoid incremental credit charges
1.
Exelon Generation Senior Unsecured credit ratings.

2.
Based on internal analysis. Changes in market conditions could impact results.
65%
70%
75%
80%
85%
90%
95%
100%
Operator (# of Reactors)
Range
5-Year Average
1
2

Exelon s Long-Term Value Drivers Generate Post-Transaction Value for All Shareholders
Carbon
Nuclear
Uprates
PA
Procurement
Cost
Reductions

Long-term fundamentals create value beyond what is currently reflected in Exelon s stock price

- $1.1 billion and growing annual upside to Exelon EBITDA from Waxman-Markey legislation
- 1,300 MW - 1,500 MW in Exelon nuclear uprates by 2017 increases the value of the existing fleet
- $2,200-2,500/kW overnight cost for uprates vs. $4,000-4,500/kW for new build and additional ~$110/kW in annual savings from lower incremental operating costs from uprates
- $100-102/MWh result in June PECO power procurement suggests robust pricing and higher margins at Exelon Generation in 2011 and beyond
- $350 million in announced O&M reductions for 2010, more than half of which is sustainable

10

1. Assumes $15/tonne carbon pricing.
2. Reflects retail price including line losses and gross receipts tax.

1
2

11

Incremental 1,300
1,500 MWs
of Exelon uprates
over 2009-2017 exceeds NRG s expected ownership of
STP 3&4

Exelon has substantial experience managing 1,100 MWs

of uprate
projects over the past 10 years

Less Risk: less risk of cost overruns and delays; uprates
can also be phased in based on market conditions which
adds value

Lower Cost: Uprates
do not materially increase the O&M of existing plants, saving ~$110/kW in annual costs vs. a
new nuclear plant
Exelon s Nuclear Uprate
Plan Delivers More MWs
Than NRG New Build -
With Less Risk At Half The Cost
1,170 MW
(44% Equity
Ownership)
Average Overnight Cost
Estimate of U.S.
New Build: $4,000-4,500/kW
Year Uprates
Become Operational
0
200
400
600
800
1000
1200
1400
1600
1999-
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2009-
2017
MWs
1,100 MWs
1,300
1,500 MW
Average Overnight Cost
Estimate: $2,200 -

2,500/kW
Exelon s Uprate
Plan
NRG s New Nuclear Plan
at
Max
Equity
Position
1. Exelon expects that NRG s planned equity selldown
would further reduce NRG's net equity interest to
approximately 35%, or 936 MW, and possibly even less
We are impressed with Exelon's optimistic plans to add up to 1,500 MW from nuclear uprates
over the next eight
years The returns on these investments should be very attractive, as the company does not anticipate a higher run-rate of O&M expenses (i.e., O&M/MWh
should decrease).
-
Angie Storozynski, Macquarie Securities, June 12, 2009
1

1.
Exelon: Sustainable Advantage
2.
Exelon-NRG: A Clear Strategic Fit
3.
Value for NRG Shareholders
4.
Achievable Plan to Execute Deal
5.
Action Sought
Discussion Points:
12

Combination Will Result in Scope, Scale and Financial Strength
13
Pro Forma
Exelon
Pro Forma Quick Stats
($s in millions)
Combined assets
1
$73,000
LTM EBITDA
2
$10,000
Market cap (as of 6/26/2009)
$40,000
Enterprise value

3
$58,000
Generating capacity
4
~48,000 MWs
Enterprise Value
Market Cap
$0
Exelon
FPL
Duke
Dominion
First
Energy
Entergy
$10
$20
$30
$40
$50
$60
$58 BILLION
NRG
Southern
1.
Reflects total assets (under GAAP) with no adjustments. Based upon 3/31/09 10-Q.
2.
Reflects Last Twelve Months EBITDA (Earnings before Interest, Income Taxes, Depreciation and Amortization) as of 3/31/09
3.
Calculation of Enterprise Value = Market Capitalization (as of 6/26/09) + Total Debt (as of 3/31/09) + Preferred Securities (as
(as of 3/31/09) Cash & Cash Equivalents (as of 3/31/09). Debt, Preferred Securities, Minority Interest and Cash & Cash Equ
Form 10-Q.
4.
Includes owned and contracted capacity after giving effect to planned divestitures.

14

Geographically complementary generation asset base

Predominantly located in competitive markets

Strong presence in PJM (Mid-Atlantic and Midwest) and ERCOT
By RTO
Combined
PJM
22,830

ERCOT
13,232
MISO
1,065
ISO NE
2,202
NYISO
3,960
CAL ISO
2,085
Contracted
6,483
51,857
SERC
2,295
WECC
45
Total
54,297
By Fuel Type
Combined
Nuclear
18,158
Coal
9,001
Gas/Oil
18,818
Other
1,837
Contracted
6,483
1. Excludes international assets. Before any divestitures.
2. Contracted in various RTOs, mainly in PJM and ERCOT.
Exelon
NRG
Combination Will Operate in Most Attractive
Markets
1
1
2

0
2
4
6
8
10
12
14
16
18

2003
2004
2005
2006
2007
2008
<1%
<1%
Exelon
~150,000 GWh
Pro Forma
Exelon
~221,000
GWh
Historical
Forward Coal Prices
Combined Entity Will Continue to Benefit
from Low Cost Fuel Sources
Powder River Basin and lignite coal supply (90%
of NRG s coal) provides low-sulfur at a relatively
stable price as compared to northern and
central Appalachian coal mines.
0.00
1.00
2.00
3.00
4.00
5.00
6.00
Northern Appalachian
Production Costs
Combined fleet will continue to be
predominantly low-cost fuel.
6%
Other
Coal
Q1 2007
Q2 2007
Q3 2007
Q4 2007
Q1 2008
Q2 2008
Q3 2008
$/mmbtu
15
Powder
River
Basin
Central Appalachian
Hydro/Other

Gas/Oil
Other Coal
PRB & Lignite Coal
Nuclear
3%
<1%
Q4 2008
Q1 2009
Nuclear
Coal
Gas
Petroleum
6%
Coal
93%
Nuclear
67%
Nuclear
23%
PRB &
Lignite Coal
2
1
1
1.
Based
on
2008
data,
does
not
include
~26,000
GWh
of
Exelon
Purchased
Power.
2.
Historically, Lignite Coal prices have had similar volatility as Powder River Basin Coal.

Largest Fleet, 2
nd
Lowest Carbon Intensity
Source: Ventyx
Velocity Suite Database
CO2 Emissions of 15 Largest U.S. Electricity Generators
Bubble size represents **carbon intensity**,
expressed in terms of metric tons of CO2
per MWh generated
Note: Does not consider effects of
proposed or unplanned divestitures.

0
50
100
150
50
100
150
200
2008 Gross Generation (TWh)
Exelon
Exelon + NRG
AEP
Southern
Duke
TVA
FPL
Entergy
Dominion
Berkshire
Hathaway
Calpine
NRG
First
Energy
Xcel
Ameren
Progress
250
Top 15 Generators by CO2 Intensity
15
Berkshire Hathaway
0.84
14
Ameren Corp
0.81
13
NRG Energy
0.78
12
AEP
0.77
11
Xcel Energy
0.74
10
Southern
0.69
9
Duke Energy
0.63

8
Progress Energy
0.61
7
TVA
0.60
6
FirstEnergy
0.55
5
Dominion
0.49
4
Calpine
0.39
3
FPL Group
0.33
Exelon + NRG
0.31
2
Entergy
0.27
1
Exelon
0.06
1.
Exelon 2020 is Exelon s comprehensive plan to reduce, displace or offset 15 million metric tons of greenhouse gas emissions
year by 2020.
Exelon 2020
1
principles will be adapted to the combined fleet
16

Carbon Legislation is Gaining Momentum and
Will Benefit the Combined Company

Waxman-Markey legislation provides allocations to merchant coal units only if they actually run in any given year with this allocation mechanism, merchant coal plants will dispatch more than is economically efficient and fewer merchant coal plants will retire

If merchant coal allocations are granted in a manner that does not change dispatch and retirement incentives,

Exelon s EBITDA would increase by about $1.5 billion and NRG s EBITDA would increase by about $150M in Year 1

While Exelon has supported merchant coal allocations as part of an overall industry compromise, if no allocations are granted, Exelon s EBITDA would increase by $1.5 billion and NRG s EBITDA will decrease by $150M in Year 1

Note: Dollar values reflect illustrative results based on potential outcomes of climate legislation and should not be interpreted a

The carbon benefit to be realized by Exelon s nuclear fleet will significantly exceed the carbon costs faced by NRG s coal-dominated generation fleet

$1,100

Exelon

NRG

($M)

Year 1 EBITDA Impact of $15/tonne Carbon With Waxman-Markey Merchant Coal Allocations

There is no case where carbon legislation is better for NRG than for Exelon

17

$0

On June 26th, the U.S. House passed the Waxman-Markey Bill by a vote of 219-212

1.
Exelon: Sustainable Advantage
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Value for NRG Shareholders
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Achievable Plan to Execute Deal
5.
Action Sought
Discussion Points:
18

an
Offer Represents Significant Value to NRG
Shareholders

Our original offer provided a 37% premium to NRG's stock price on
10/17/08

When compared
to
all
$1B+
stock
deals
since
12/2003,
that
was
almost
double
the 1-day average of 19%

NRG has responded with obstruction

Refusing to negotiate with Exelon management; excluding us from their
market
discovery
process,
that
has
produced
no

alternatives

Refusing to allow limited two-week due diligence process

Intervening with obstructionist tactics in regulatory proceedings

Pursuing
a
frivolous
and
expensive
lawsuit

Falsely claiming that the election of Exelon s nine nominees could trigger
the poison puts
in their debt

Our
new
offer
to
NRG
shareholders
is
even
better
now
implied
premium of 44%

Higher exchange ratio = 0.545

Greater growth opportunities than NRG stand-alone, at lower risk and
relative cost

~$3.1B transaction value

Now is the time for a new, independent and open-minded NRG board to
come to the table
19
1.
NRG s lawsuit against Exelon in U.S. District Court, Southern District of New York, was dismissed on June 22, 2009.
1

20
The Value of the Offer to NRG Shareholders
Has Increased
THEN
NOW
Exchange Ratio
Est. NPV of Synergies
0.485
0.545

(12.4% increase)
$1.5
$3.0 B
$3.6
$4.0 B
Exelon s best and final offer
20
1.
Implied ownership as of 2012 assuming the conversion of $1.1 billion of mandatory convertibles. Immediate ownership perce
2.
Includes estimated transaction costs of $654M (pre-tax).
3.
Includes estimated transaction costs of $550M (pre-tax).
Transaction Value to NRG
$2.3 B
$3.1 B
Implied Ownership
16.8%
18.2%
2
1
3

Exelon s offer has increased NRG s stock price and decreased Exelon s stock price relative to each company s peer indices

Assuming that each company s stand-alone stock price is halfway between the comparable company index and current stock price, the premium offered is still 44%
21
21
Current
Stock Price
($50.70)
2

Halfway
Between Index
and Current
($54.03)
Based on
Competitive
Integrated
Index ($57.35)
3
Current Stock
Price ($23.80)
2
16%
24%
31%
Halfway Between
Index and Current
($20.50)
35%
44%
52%
Based on IPP
Index ($17.21)
4
61%
71%
82%
Exelon
Stand-Alone
Stock
Price
NRG
Stand-Alone
Stock Price
Indicative Premium
1
The world has
changed for
IPPs

lower
gas prices, a
weak economy
and likely
carbon
legislation will
translate into
lower IPP
valuations
Best Indicators Suggest Current Exelon Offer

Represents an Implied Premium of 44%

1.

Premium based on 10/17/08 stock prices (last observable stand-alone stock value) is 54% at current offer.

2.

Closing stock prices as of 6/26/09.

3.

EXC implied stock price based on the Competitive Integrateds (AYE, ETR, FPL, PPL, PEG, CEG, EIX, FE) performance fron

4.

NRG implied stock price based on the IPP Index (MIR, CPN, DYN, RRI) performance from 10/17/08 to 6/26/09.

Based on These Indicators, Transaction Provides NRG Shareholders Immediate Value of $3.1 Billion

Share of Synergies
$0.6B
Plus: EXC Upside
-
Carbon
-
Uprates
-
PECO PPA roll-off
1.

Based upon implied premium of 44% from previous slide and assumes 277 million NRG fully-diluted shares outstanding.
2.
Share of synergies reflects 18.2% NRG share of synergies (based upon midpoint of $3.6-$4.0B synergies), less NRG share of $
transaction costs.
Implied
Transaction
Value to NRG
Shareholders
of $3.1B
Implied
Premium to
NRG
Shareholders
of $2.5 B
22
Even at June 26
closing prices, NRG
shareholders will
realize immediate
transaction value of
$1.7 billion
If Exelon s offer
is withdrawn,
NRG
shareholders
face downside
risk in their share
price
1
2
th

Then

Assumed a traditional model **integrate**

Reflected preliminary internal estimate top-down

without assistance from 3 parties

Notable assumptions included:

40% reduction in NRG s A&G expense

10% reduction in NRG s O&M expense
Now

Assumes an absorb-integrate-transform
model

Reflects bottom-up
functional estimate with
assistance from Booz & Company

Assesses discrete operating areas, updates
assumptions and defines desired outcomes

Reflects enhanced view of NRG s operating profile
(plant benchmarking)

Recognizes impact of Reliant Retail business to NRG
(A&G)
23
Upon Detailed Investigation, Exelon Has
Identified Greater Synergies
Exelon will realize these synergies, just as we have in the past
1.
Based on analysis of publicly available
information.
2.
Primarily reflects severance, systems
integration, retention and relocation costs.
Est. Annual Cost Savings:
$180
-
$300
M
% of Combined Expenses:
~3%-5%
Costs
to
Achieve :
~$100
M
NPV of Est. Synergies: **$1,500**
-
$3,000 M
Est. Annual Cost Savings:
$410
-

$475
M
% of Combined Expenses:
~6%-7%
Costs
to
Achieve
2
:
~$200
M
NPV of Est. Synergies: **$3,600**
-
$4,000 M
rd
1
2
1

Synergies reflect a 30% reduction in NRG s O&M expense,

which
is
consistent
with
prior
power
sector
transactions
and
reflects
Exelon s
track
record
and
commitment
to
delivering
strong results
additional synergies possible
24
Category
Amount ($M)
Commentary
Key Sources of Synergies
Corporate / IT
$225 -
$245

Includes
enhanced
corporate
synergies
from
initial
case
based
on
detailed
assessment and prior transaction experience, minimizing duplicative corporate
support
Fossil
$75 -
$85

Based on ~350 employee reduction from Exelon/NRG fleet optimization due to
implementation of Exelon s management model
Trading
$65 -
$75

Absorption of NRG trade book into existing Exelon Power Team operations

EXC Power Team is an experienced, multi-state power marketer, enabling smooth integration and significant labor synergies
Development
$20 - $30

Significant reduction in redundant staffing, without sacrificing continuing growth and development opportunities
Nuclear
$10 - $20

Integration of STP 1 & 2 into the largest nuclear fleet in the industry (not assumed until 2011, contingent upon agreement with co-owners)
Retail
$15 - $20

Reflects assumed NRG synergies (since Reliant acquisition was not incorporated into our initial analysis)
Total
$410 - $475

25
243
170
117
Cost Savings
Estimate ($M)
$ 100
117%

Actual Post Merger
Integration Savings ($M)
% Realized of
Estimate
106%
$ 160
$ 180
135%

Targeted headcount reduction of ~1,200;
actual ~1,600

Disciplined integration planning process

Effective use of pre-close period for
integration planning purposes to accelerate
synergy capture

Reduction in overall staffing levels through
centralization/leverage of scale

Elimination of duplicate corporate and
administrative positions

Common company-wide management
processes
Year
2001
2002
2003
$67
$210
$200
2004
$410
2003
$230
$163
Cumulative Cost Savings
Estimate ($M)
Actual Results (Pre Tax -
$M)
(O&M + Capital = Total)
% Realized of
Estimate
100%
129%
$163 + $67 = **$230**
$339 + $188 = **$527**
O&M

Capital
Exelon has the experience and management commitment to deliver on its synergy targets
Exelon Has a Proven Track Record of Delivering Targeted Synergies

Improved capacity factor from 77% in 2004 to 96% in 2006

Reduced average refueling days from 80 in 2004 to 26 in 2006
50
60
70
80
90
100
1998
2000
2002
2004
2006
2008
PECO
Unicom
PSEG
Exelon
AmerGen
PSEG with NOSC

NRG Touts Numerous Growth
Opportunities,
But A Closer Look Reveals Minimal Value
New Nuclear
(NINA)

NRG significantly underestimates both costs and risks

Any value estimate is speculative at this point

Reliant

Purchase appears accretive, but NRG s EBITDA projections are extremely aggressive and suggested EBITDA multiple is unrealistic

Net value of ~ $1/share
Padoma Wind

150 MW net ownership (0.7% of NRG existing capacity) of new wind in Texas scheduled to come on-line by the end of 2009

Potential net value in the $0.00-0.10/share range
eSolar

184 MW net ownership (0.8% of NRG existing capacity) of new solar in Southwest scheduled to come on-line in 2011/2012

Potential net value in the $0.00-0.25/share range
GenConn Energy

200 MW net ownership (0.9% of NRG existing capacity) of new peaking in Connecticut scheduled to come on-line in 2010/2011

Estimated net value of ~$0.10/share
NRG s only real growth opportunity is the gas and heat rate upside in its existing 23,000 MW domestic fleet

Exelon has similar upside plus

enormous
carbon
upside
as
well
26
1
1
1

1. Upper end of range is based on optimistic net value estimate assuming a 10% profit margin on capital invested.

1.
Exelon: Sustainable Advantage
2.
Exelon-NRG: A Clear Strategic Fit
3.
Value for NRG Shareholders
4.
Achievable Plan to Execute Deal
5.
Action Sought
Discussion Points:
27

1
2
3
Investment grade metrics

We have modeled varying combinations of debt refinancing, asset divestitures, equity
or
equity-linked
issuance
and
accelerated
debt
paydown
to
maintain
our
investment
grade
credit
ratings

with
a
view
to
long-term
shareholder
value

Our optimal financing plan includes:

-
Divesting assets of ~$1.6 billion
-
Issuing
~$1.1
billion
of
mandatory
convertible
equity
or
common
equity
-
Deploying
cash
on
hand
of
~$1.7
billion
-
Financing
$4.2
billion
in
the
debt
capital
markets

The plan is
executable
and provides

We
have
incorporated
a
cost
of
issuing
equity
or
equity-linked
securities
into our
model as we believe EXC s
long-term value is greater than its current stock price

The strategic benefits, long-term value and synergies created by the combination
are
more
valuable
than
the
cost
of
an
equity
or
equity-linked
issuance
28
28
Exelon Has a Financing Plan That Is Executable, Provides
Investment Grade Metrics and Creates Long-Term Value
I think Exelon has the
capability to refinance
and close the
exchange offer
-
Jonathan Baliff, NRG
Executive Vice
President, Strategy
4

1. Based on relative economics of the two securities and market conditions.
2. Estimated excess cash balance at NRG reflects Exelon internal projections as of FYE 2009.
3. Either at or about the time of the transaction or thereafter.
4. Former investment banker at Credit Suisse testifying under oath in Federal Court on June 1, 2009. NRG Energy. Inc. v. Ex
No. 09 Civ. 2448 (S.D.N.Y.).

2
We Have A Plan To Meet Our Financing Needs

The Plan is Flexible and Executable

Exelon has many options to
address its financing needs

Capital markets

Bank financing

TopCo
structure

Asset sales / Equity issuance

Bond waivers

Excess NRG cash

Capital markets remain strong

Over $200 billion in bank commitments (over $1 billion) in the last twelve months
7

Over $88 billion in investment grade bond issues (over $1 billion) year to date
7

$130 billion in U.S. equity issuances year to date, of which over $19 billion is convertible equity
0
7

We can finance the transaction at an ~8% interest rate given current market conditions
29

Note: Estimated balances based on internal estimates, reported data in NRG s Form 10-Q as of 3/31/09 and 10-K dated 12/31/08.

1. Synthetic LOCs require drawn bridge loan.
2. Credit Suisse has the option to keep the security outstanding and make fair value adjustments.
3. Includes estimated fees, net of taxes and other non-recourse obligations.
4. Assumes divestiture of various assets including Big Cajun and other Louisiana Plants.
5. Excludes CS Notes and preferred interest.
6. Either at or about the time of the transaction or thereafter.
7. UBS market data.

Summary Financing Needs ($ M)

Principal	
Bank Debt (Includes TLB and Synthetic LOCs) 1	$3,114
Senior Notes due '14, '16, and '17 (in aggregate)	4,700
8.500% Senior Notes due 2019	700
3.625% Preferred Stock	

250
Other
3
908
Potential Financing Needs
$9,672
Preliminary Financing Plan
Estimated Excess NRG Cash and Equivalents (as of FYE '09)
$1,700
Equity / Mandatory Convert Issuance
1,100
Asset Sales
4
1,600
Assumption of 2019 Bonds
700
Assumption of Select Non-Recourse Obligations
5
379
Debt Capital Markets Financing
6
4,193
Total Sources
$9,672

Q2 2009
Q3 2009
Q4 2009
Receive Regulatory
Approvals
10/19:
Announce
Offer

Annual NRG and
Exelon Special
Shareholder
Meetings
11/12:
Exchange
Offer Filed
Make Filings and Work to Secure Regulatory Approvals
(NRC, DOJ/FTC, PUCT, NYPSC, PAPUC, CPUC)
Shareholder Proposal and Proxy Solicitation
8/21:
Exchange
Offer Expires
2/25:
Over
51% of NRG
Shares
Tendered
Regulatory approvals are manageable and we expect the
transaction to close in 2009
5/21: FERC
Approval
Expected
Transaction Close
Exelon is Committed to the Combination
Q4 2008
Q1 2009
30
Discussing regulatory
concerns of an
NRG/Exelon tie-up,
Crane said he did not
expect the bidder to
have any regulatory
problems.
David
Crane Interview with
Peter Semler
of
Mergermarket, March
10, 2009

1
31
Jurisdiction
Status
FERC
Acquisition approved on May 21, 2009
Hart-Scott-Rodino
Statutory waiting period expired April 30, 2009
NRC
Application under review without further information
requests
Texas

Commission
ruled
application
is
sufficient
-
hearing
to
be held on
October 15, 2009
New York
To be decided without evidentiary hearing
Pennsylvania
Hearings scheduled for July 15-17, 2009
California
CPUC accepted application; will be decided without
evidentiary hearing
Regulatory Approvals Are Advancing As
Expected
Completed
In Process
1. As of June 26, 2009
Note: It is also worth noting that NRG s lawsuit against Exelon in U.S. District Court, Southern District of New York, was di
June 22, 2009 and will not be an obstacle to closing.

1.
Exelon: Sustainable Advantage
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5.
Action Sought
Discussion Points:
32

Elect each of the four independent candidates

nominated
to
run
in
opposition to the incumbent directors up for re-election

Expand
the
size
of
the
NRG
board
to
19
directors

Elect
each
of
the
five
independent
candidates
to
serve
on
the
expanded board
NRG Shareholders can secure the best transaction possible by taking the following actions:
This approach will allow NRG shareholders to share in the significant value to be
generated from creating the largest, most diversified
power company in the U.S.
33
This will **not**
result
in Exelon s slate
constituting a
majority of the
NRG Board

NRG s Board has been entrenched in its steadfast opposition to a transaction
with Exelon by:
-
Supporting an entrenched CEO and Senior Management who have sought to
obstruct Exelon s attempts to obtain regulatory approvals for the
transaction
-
Consistently ignoring the spoken will of a majority of NRG s shareholders
and refusing to negotiate with Exelon or allow due diligence

We are committed to this transaction but will continue our efforts only as long as we have shareholder support. The election of only four new directors would raise a significant question about the level of that support

Voting For Only Four Directors Will Reduce the Likelihood of a Value-Enhancing Transaction

It s Time to Capture This Value

34

Exelon s Slate of Experienced Independent Nominees

Nominees have extensive business and management experience and experience serving on boards of public companies. Slate comprised of a broad range of financial, legal and industry expertise

Four independent, highly qualified candidates to replace directors of NRG whose terms expire at the 2009 Annual Meeting

Betsy S. Atkins, Ralph E. Faison, Coleman Peterson and Thomas C. Wajnert

Five independent, highly qualified candidates to fill the newly created

seats upon an approved board expansion

John MAlbertine, Marjorie L. Bowen, Donald DeFosset Jr., Richard Koppes and Ralph G. Wellington

Exelon s proposed slate of directors is highly qualified and independent and will not constitute a majority of the Board

35
This Transaction Is Unique

Substantial
synergies
-
fairly
shared

Compelling value

Catalyst for consolidation
The time is now the parties are NRG and Exelon
the price is fair

Appendix
36

NRG Will Benefit from Exelon s Carbon Upside
37
Assumptions:

$10/tonne carbon

50% of requirement in
free allowances from
government

80% recovery through
power prices

Yields $4/MWh increase in wholesale power prices ($10*.5*80%)

Among the principal beneficiaries of the Waxman bill, therefore, will be utilities with a large proportion of unregulated nuclear generation, such as Exelon, Entergy and Constellation . Most adversely affected will be RRI Energy (RRI). Allegheny Energy (AYE), NRG Energy (NRG), PNM Resources (PNM), Westar Energy (WR), Ameren (AEE), Great Plains Energy (GXP), Mirant (MIR) and Dynegy (DYN).

Hugh Wynne, Bernstein Commodities and Power: What Are the Consequences of the Waxman-Markey Climate Change Bill for the Power Sector? (June 29, 2009)

Based on the table to the left, EXC EBITDA estimated to **increase** 8% (~$600M) in 2012 while NRG **loses** 2% ($62 M) by 2012 .

The negative impact to NRG becomes even more pronounced as allowance grants are phased out, while Exelon s benefits continue to grow.

Exelon has the liquidity, market access and financial flexibility to manage risk and pursue sizeable growth initiatives when appropriate
Exelon s Balance Sheet Can Weather Volatile Commodity Markets

Lower interest rates and lower cost of capital

Lower cost of equity capital

Ability to source capital from multiple markets (e.g. commercial paper) reduces risk of liquidity crunch	Investment grade market more likely to be accessible during challenging business cycles
	Banks in this environment more willing to lend to large, diversified, highly-rated companies
	Over 20 banks committed to Exelon s facilities providing over $7B in aggregate commitments
Broad Access to Capital	
38	
Lower Cost of Capital	Lower margin and collateral needs
	Ability to bid competitively on PPAs and long-term deals since counterparties prefer investment grade companies
	Reduced working capital requirements, no prepayments on long-term contracts
Financial and Business Flexibility	

Risks Inherent In A Non-investment Grade
Balance Sheet
Though currently re-opened, the non-investment grade market has closed on several occasions in recent memory, while the high-grade market has been consistently accessible regardless of economic cycles
Erratic access to such a critical source of funding would have significant liquidity implications for non-investment grade issuers like NRG
39
High Yield

Market
High Grade
Market
4%
5%
6%
7%
8%
9%
10%
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
0
20,000
40,000
60,000
80,000
100,000
120,000
140,000
$160,000
Source: SDC, J.P. Morgan
JULI Yield (%)
Monthly new issuance volume ($mm)
6%
7%
8%
9%
10%
11%
12%
13%
14%
15%
16%
17%
18%
19%
20%
1998
1999

2000
2001
2002
2003
2004
2005
2006
2007
2008
0
5,000
10,000
15,000
20,000
25,000
30,000
$35,000
JPMorgan Global HY Index Yield to Worst
Monthly new issuance volume ($mm)

40

Exelon Generation s full requirements power purchase agreement with PECO Energy expires on December 31, 2010

Recent PJM prices for full requirements products:
Procurement
Date
Delivery Period

$/MWh
PSE&G
(NJ BGS)
February 2009
June 1, 2009 -
May 31, 2012
$103.72 Residential and Small
C&I[1]
PPL
April 2009
January 1, 2010 -
December 31, 2010
$86.74 Residential
$87.59 Small C&I
Allegheny
June 2009
Residential: 17-month and 29-month
contracts, both beginning January 1,
2011
Non-residential: 17-month contracts
beginning January 1, 2011
$71.64 Residential
$75.40 Non-residential
PECO
June 2009
17-month and 29-month contracts
beginning January 1, 2011
$100-102 Residential
(approximate)
Pennsylvania Procurement Provides Strong
Evidence of the Value of Exelon s Mid-Atlantic Fleet
2
2
2
2
3
1.
Wholesale level pricing (excludes adjustments for taxes and transmission and distribution losses); includes cost of Network Tra
Service (NTS).
2.
Retail level pricing but excluding NTS. Retail price includes cost of Gross Receipts Tax and adjustment for transmission and d
(T&D) losses. Retail prices based on distribution company press releases.
3.
Estimated retail price (i.e., inclusive of Gross Receipts Tax and adjustment for T&D losses but not NTS) converted from ExGe
offers using Residential Retail Generation Rate Conversion Model at PECO Procurement website
(http://www.pecoprocurement.com/index.cfm?s=supplierInformation&p=rates).

41
RPM Capacity Auctions in PJM
The results of the recent RPM capacity auction are not anticipated to reflect a new norm
due to an anticipated market response to low clearing prices and rule changes for demand response bidding

The RTO clearing price for 2012/2013 was $16.46 MW-day. The clearing price

for MAAC and Eastern MAAC resources was $133.37 MW-day and $139.73 MW-day respectively.

- Exelon offered 12,200 MWs of capacity in the RTO region; 1,500 MWs in the MAAC region; and 9,600 MWs of capacity in Eastern MAAC region

A market response to the low clearing prices in the RTO region is anticipated

- Modified resource bidding behavior
- Retirement of costly and less efficient generation
- Cancellation of new generation projects
- Less Cleared Demand Response (DR)

The RPM capacity auction prices for 2012/2013 are the result of increased generation supply and demand response resources, decreased load PJM wide, and locational reliability requirements

The 2012/2013 capacity auction was the first time in which Interruptible Load Resources (ILR) were required to offer into RPM as a capacity resource

- The PJM tariff was interpreted to require existing ILR Resources to bid at $0

On June 8, 2009, PJM and its stakeholders began considering changes that would eliminate offer caps on DR

- Tariff changes could result in future auctions that better reflect the true market value of capacity (i.e. the value to end use customers who sell firm power rights)

ERCOT Wind:
18 GW of Transmission Approved, Can Sell RECs
Nationally Under Federal RES, and Price Depression
Will Be Absorbed By Texas Alone
Upper Midwest Wind:
Dependent on Not-Yet-Approved Multi-State
Transmission Buildout
and Price Depression
Will be Spread Over A Broad Area
Mid-Atlantic Wind:

Limited Wind Resources, So Will
Purchase RECs
From Other Areas
42
Federal RES will result in incremental wind build in Texas to support REC
purchases
in
other
markets

depressing power prices in ERCOT
42
Federal RES Will Reduce Prices More in ERCOT
than in Midwest or Mid-Atlantic

43
Historical projected and actual costs of nuclear construction ($/kW)
1974/75
$1,156
$4,410
1976/77
$1,493
$4,008

$560
$1,170
1966/67
% Over Original Estimate
+381%
+269%
+209%

No
success with planned equity selldown

Insufficient
DOE
loan
guarantee
funds
to
support
all
identified projects

Even with DOE loan guarantee of $4.6B and $3B in
loan guarantees from Japan (which we see as
aggressive), there is a financing gap of $2.5B -
$5B
that NRG has not secured

No
disclosed details on risk mitigation plan for Toshiba s first
U.S. nuclear construction project

No
signed
PPAs
because
current
market
fundamentals
do
not support pricing needed to cover construction costs
Significant Risks Make It Impossible To Ascribe Value At
This Early Stage
Nuclear
new
build
estimates
Overnight
$/kW
FPL
$3,170-$4,630/kW

Progress (Levy County)
$4,345/kW
Brattle Group
$4,038/kW
Exelon (Victoria County)
$4,148/kW
U.S. Consensus
$4,000-4,500/kW
NRG
$3,200/kW
vs.
Sources:
NEI
Whitepaper
The
Cost
of
New
Generating
Capacity
in
Perspective
February
2009,
Brattle
Group
IRP
for
Connecticut -
January 2008
, NRG 6/4/09 Presentation at Macquarie Global Infrastructure Conference
1.
Amounts shown
in
2008$,
assuming
2%
inflation
over
2007$
for
FPL
and
Progress.
Exelon
estimate
includes
initial
fuel load cost.
2.

NRG Investor Presentation, June 17, 2009
Overnight Cost Growth (1966-1977)
Est:
+167%
Actual:
+243%
NRG Underestimates the Risks of Being a First Mover
STP 3&4 Is Subject To Project Execution And Cost Escalation Risks That NRG Shareholders Cannot Ignore

U.S. Supply chain and labor force must be re-established

Japanese modular construction practices have not been applied in the U.S.

NRG has not announced completion of construction contract

U.S. labor productivity vs. Japanese is unknown

Construction proximity to an operating nuclear plant poses significant risk to construction execution, schedule, and cost

Owner s costs and site development risks are material, despite the brownfield
site
2
1

Scale and Complexity of Nuclear New Build
Introduces a Unique Set of Challenges for NRG
44
New nuclear build is a high risk proposition for NRG and represents a substantial portion of the company s market cap

Even with financing support by the U.S. and Japanese governments, NRG is placing a significant portion of the company s market cap at risk

Exelon s size and investment grade balance sheet significantly lessens the impact of this mega-project on the company s operating and financial risk profile

Total nuclear new build equity financing as a percentage of market capitalization	NRG	EXC/NRG
-	$8.9 billion	12%
+25%	$11.2 billion	16%
+50%	$13.4 billion	19%
+75%	$15.7 billion	22%
+100%	$17.9 billion	25%
+125%	$20.1 billion	28%
+150%	$22.4 billion	31%
2%	2%	2%
3%	3%	4%
4%	4%	5%
0%	5%	10%
15%	20%	25%

30%
35%
40%
$ 4,142
/ kW
$ 5,178
/ kW
$ 6,213
/ kW
$ 7,249
/ kW
$ 8,284
/ kW
$ 9,320
/ kW
$ 10,355
/ kW
2
1
1.
New build equity financing percentages are presented for various levels of total nominal project costs per kW, assuming 80% d
market capitalization as of 6/26/09. The equity financing percentages reflect NINA ownership of STP units 3 and 4 at 40%, an
NINA at 88%.
2.
Estimate of the total nominal project cost per kW based on the midpoint of the NRG price range for the nominal EPC and own
NRG s 6/4/09 presentation at Macquarie Global Infrastructure Conference, plus estimated interest during construction, initial
guaranteed loan fees and debt service reserve.

45
NRG Is Overvaluing Reliant Retail s Financial
Impact
Valuation Considerations
Even when assuming a $250 million run rate EBITDA for Reliant Retail, the
financial impact to NRG is less than $1.00 per share

Exelon fully supports the retail business model, and the Reliant

acquisition appears value-accretive

However, the suggestion that over $1 billion in equity value (or ~$4.50 per share) has been created is an overstatement

Valuation of 4-6x EBITDA is not achievable

NRG paid 1.9x to 2.6x EBITDA in an auction

Public markets have not imputed attractive multiples to retail businesses in the past

No allocation of debt in NRG s valuation either in the form of collateral or increased working capital

NRG seems to ignore the **higher level of risk** for retail; implies higher cost of capital
Potential Price Per Share Impact ($ M)

$250 million run rate EBITDA appears aggressive

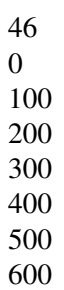
Gross margins ($670 M) assume steady mass market and Commercial & Industrial margins which **have been** volatile

Aggressive pricing from **large competitors** (e.g., Centrica, FPL, CEG) **will**

likely **compress margins**

Requires strong execution
across
key disciplines (e.g.,
risk management, customer service)
Earnings Considerations
Low
High
NRG
Management
(as
of
3/2/09):
1
Purchase Price
$388
$388
(a)
Original EBITDA Estimate
$200
$150
(b)
Implied EV / EBITDA
1.9x
2.6x
Revised
NRG
Estimates
(as
of
5/27/09):
2
(c)
Revised Run-rate EBITDA
$250
$250
(d)
Change
/
Implied
Synergies
(c
-
a)
$50
$100
(e)
NRG Purchase Multiple Range (line b)
1.9x

-
2.6x
1.9x
-
2.6x
Implied Value Created (d * e)
$95
$130
$190
$260
Est.
Price
Per
Share
Impact
3
$0.34
$0.47
$0.69
$0.94
1.
NRG Investor presentation - March 2, 2009.
2.
NRG Investor presentation - May 27, 2009.
3.
Assumes 277 million NRG fully-diluted shares outstanding.


46
0
100
200
300
400
500
600

700
$800
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Exelon Estimate
Incremental
CapEx
(High Case)
Exelon
Estimate

Incremental
CapEx
(Low Case)
NRG Form 10-K Disclosure
$1.3-$2.3
billion
of
incremental
environmental
compliance
costs
could
limit
NRG s
ability
to
fund
its
future
growth

particularly
in
light
of
its
leveraged
balance sheet and non-investment grade ratings
Total
NRG Estimate
$1.15B

Incremental
Cap Ex
$1.3

$2.3B
Total
$2.45

$3.45B
46

Under the new administration, we anticipate there will be more stringent environmental rules and regulations, including NOX and SO2 and particulate reductions under a revised Clean Air Interstate Rule (CAIR), an aggressive EPA/DOJ New Source Review enforcement initiative

These regulations may result in significant compliance costs for NRG s coal-fired generation assets

These regulations will have minimal impact on Exelon s compliance costs given our nuclear portfolio

1. In its 3/31/09 Form 10-Q, NRG states that it has prepared an environmental capital expenditure plan for numerous pending regulations but does not disclose the amount of the planned expenditures.
2. Forecasted amounts shown above are included in transaction analysis.

Environmental Capital Expenditures
Could Severely Limit NRG s Future Growth

1
2

NRG claims
that its hedge program insulates it from the current commodity
down-cycle
looking
closer:

NRG has sold about 2/3 of its baseload
energy forward for 2011, but at much lower prices
than for 2009 sales

As
NRG s

above-market
hedges
roll
off,
we
estimate
that
NRG s
baseload
energy
revenues
could decline by ~$700 million based on current market prices between 2009 and 2011
At Current Forward Prices, ~$700 Million in
NRG Revenue Deterioration From 2009-2011
Between 2009
and 2011,
Exelon
Generation s
estimated
gross margin
grows by
~$500
million,
largely due to
the PECO PPA
roll-off
47
0
1
2
3
4
2009
2010
2011
$B
NRG Baseload
Energy Revenues
5% Sold in Short-
Term Market
95% Sold Forward at
an Average Price of
$61/MWh
79% Sold Forward at
an Average Price of
$58/MWh
$700
Million
Decline
33% Remaining Sales at an

Average Price ~$53/MWh
Assuming 5/29/09 Market
67% Sold Forward at
an Average Price of
$52/MWh
1
2
1.
Based on 2/28/09 market conditions, per Exelon Hedging Disclosures (April 2009).
2.
Percentages sold and average prices in blue as disclosed in NRG s 2008 Form 10-K. 2010-2011 average prices in green are ba
Exelon internal analysis. Average price represents weighted average of TX, NY and PJM baseload energy sales using marke
conditions as of 5/29/09.
21% Remaining Sales at an
Average Price ~$46/MWh
Assuming 5/29/09 Market

Premium Paid Analysis
All stock transactions with equity values greater than $1.0 billion, announced since
12/5/2003, U.S. targets (excluding withdrawn deals and spin-offs)
Source:
SDC, Bloomberg, FactSet
Note:
Excludes Wells Fargo's acquisition of Wachovia, Bank of America's acquisition of Merrill Lynch, JP Morgan's acquisition of B
Stearns and Bank of America's acquisition of Countrywide.
48
Date
Date
Equity Value

Premium Prior to Announcement (%)
Announced
Effective
Target
Acquiror
($mm)
1 Day
1 Week
4 Weeks
04/01/09
Metavante Technologies Inc
Fidelity Natl Info Svcs Inc
2,982
23.1
23.5
27.5
03/03/09
Magellan Midstream Hldg LP
Magellan Midstream Partners LP
1,148
22.1
23.5
29.8
01/15/09
Terra Industries Inc
CF Industries Holdings Inc
3,397
102.9
107.5
109.8
10/19/08
NRG Energy Inc
Exelon Corp
6,261
36.7
38.0
31.1
06/23/08
12/05/08
Allied Waste Industries Inc
Republic Services Inc
6,098
0.9
3.5
5.0
04/24/08
09/29/08
Wendy's International Inc
Triarc Cos Inc
2,346

11.1
16.0
23.2
04/14/08
10/29/08
Northwest Airlines Corp
Delta Air Lines Inc
2,918
14.1
14.9
20.2
05/04/07
10/01/07
Greater Bay Bancorp,Palo Alto
Wells Fargo,San Francisco,CA
1,657
7.5
13.8
16.3
05/01/07
09/04/07
MAF Bancorp,Clarendon Hills,IL
Natl City Corp,Cleveland,Ohio
1,973
39.5
39.9
38.1
03/18/07
08/30/07
InfraSource Services Inc
Quanta Services Inc
1,253
17.4
18.1
16.0
02/05/07
08/20/07
Hanover Compressor Co
Universal Compression Holdings
2,077
2.4
1.7
4.1
02/05/07
07/02/07
Investors Financial Svcs Corp
State Street Corp
4,505
38.5
38.5

42.4
02/02/07
03/07/07
Weyerhaeuser Co
Weyerhaeuser Shareholders/Domtar
2,939
0.0
0.0
0.0
12/04/06
04/02/07
Agere Systems Inc
LSI Logic Corp
3,795
28.2
30.4
26.5
12/03/06
07/02/07
Mellon Financial,Pittsburgh,PA
Bank of New York Co Inc,NY
16,371
(6.1)
(6.2)
(5.3)
10/17/06
07/12/07
CBOT Holdings Inc
Chicago Mercantile Exchange
11,025
55.3
59.8
59.4
08/31/06
11/04/06
Glamis Gold Ltd
Goldcorp Inc
6,829
32.4
32.4
35.4
07/10/06
12/01/06
Harbor Florida Bancshares Inc
Natl City Corp,Cleveland,Ohio
1,110
21.6
21.6
21.6
07/06/06

02/21/07
Peoples Energy Corp
WPS Resources Corp
1,588
15.0
13.6
11.6
06/12/06
11/15/06
Pacific Energy Partners LP
Plains All American Pipeline
1,395
10.6
12.2
14.3
05/25/06
11/04/06
AmSouth Bancorp,Alabama
Regions Finl Corp
10,035
(2.0)
(0.0)
0.3
05/08/06
11/09/06
Fisher Scientific Intl Inc
Thermo Electron Corp
10,280
7.0
8.2
7.4
01/24/06
05/05/06
Pixar Inc
Walt Disney Co
7,555
2.5
4.5
4.9
12/20/05
05/22/06
Maxtor Corp
Seagate Technology Inc
1,879
59.8
58.2
62.3
09/12/05
03/01/06
WFS Financial Inc

Wachovia Corp,Charlotte,NC
3,035
13.8
12.6
15.3
09/12/05
03/01/06
Westcorp,Irvine,CA
Wachovia Corp,Charlotte,NC
3,419
4.7
3.8
6.3
05/09/05
04/03/06
Cinergy Corp
Duke Energy Corp
8,655
13.4
13.9
12.6

Premium Paid Analysis
All stock transactions with equity values greater than $1.0 billion, announced since
12/5/2003, U.S. targets (excluding withdrawn deals and spin-offs)
Source:
SDC, Bloomberg, FactSet
Note:
Excludes Wells Fargo's acquisition of Wachovia, Bank of America's acquisition of Merrill Lynch, JP Morgan's acquisition of B
Stearns and Bank of America's acquisition of Countrywide.
Exelon s offer at
10/17/08 represented a:

1 day premium of 37%

Premium to 1-week
average exchange ratio
of 38%

Premium to 4-week
average exchange ratio
of 31%
49
Date
Date
Equity Value
Premium Prior to Announcement (%)
Announced
Effective
Target
Acquiror
($mm)
1 Day
1 Week
4 Weeks
05/04/05
08/08/05
SpectraSite Inc
American Tower Corp
3,153
9.5
9.6
9.1
04/18/05
12/03/05
Macromedia Inc
Adobe Systems Inc
3,588
25.1
26.0
33.4
03/21/05
07/19/05
Ask Jeeves Inc
IAC/InterActiveCorp
1,952
16.5
16.3
21.5
03/09/05
07/01/05
Great Lakes Chemical Corp
Crompton Corp

1,552
10.1
10.4
11.0
03/03/05
05/16/05
Siliconix Inc
Vishay Intertechnology Inc
1,003
16.2
18.6
14.7
01/31/05
11/18/05
AT&T Corp
SBC Communications Inc
14,732
(6.6)
(0.7)
3.3
01/28/05
10/01/05
Gillette Co
Procter & Gamble Co
54,907
17.6
20.6
21.7
01/10/05
03/21/05
Fox Entertainment Group Inc
News Corp
34,466
9.8
12.9
14.1
12/16/04
07/02/05
Veritas Software Corp
Symantec Corp
13,520
9.5
28.6
47.0
08/12/04
03/11/05
Varco International Inc
National-Oilwell Inc
2,551
9.2

9.6
13.4
08/02/04
01/01/05
First National Bankshares FL
Fifth Third Bancorp,OH
1,253
40.5
43.4
45.2
06/21/04
11/01/04
SouthTrust Corp,Birmingham,AL
Wachovia Corp,Charlotte,NC
14,157
20.2
21.5
24.1
04/07/04
06/25/04
Westport Resources Corp
Kerr-McGee Corp
2,600
10.7
10.2
9.6
03/29/04
08/13/04
Tularik Inc
Amgen Inc
1,796
47.1
48.5
45.7
03/17/04
08/02/04
Apogent Technologies Inc
Fisher Scientific Intl Inc
2,691
5.5
6.4
7.5
02/26/04
12/21/04
ILEX Oncology Inc
Genzyme Corp
1,051
25.0
22.6
19.9

02/17/04
07/01/04
Provident Financial Group Inc
Natl City Corp,Cleveland,Ohio
2,094
15.3
15.6
15.7
02/16/04
10/01/04
GreenPoint Financial Corp,NY
North Fork Bancorp,Melville,NY
6,203
14.1
15.1
19.3
02/06/04
04/16/04
NetScreen Technologies Inc
Juniper Networks Inc
4,175
59.0
59.5
43.8
01/23/04
07/01/04
Union Planters Corp,Memphis,TN
Regions Financial Corp
5,857
(2.5)
(3.5)
(3.1)
01/14/04
07/01/04
Bank One Corp,Chicago,IL
JPMorgan Chase & Co
58,847
15.1
14.3
8.2
12/15/03
09/30/04
Gulfterra Energy Partners LP
Enterprise Products Partners
2,551
2.2
4.1
3.4
Mean
7,372

19.2
20.7
21.7
Median
3,035
14.1
15.1
16.0
High
58,847
102.9
107.5
109.8
Low
1,003
(6.6)
(6.2)
(5.3)
ff;padding-left:2px;padding-top:2px;padding-bottom:2px;padding-right:2px;">

Cost of product revenue
9,071

41

10,463

37

31,097

39

31,512

38

Cost of service revenue
1,228

5

967

3

3,673

5

2,529

3

Research and development
9,252

42

9,444

33

29,642

37

29,524

35

Selling, general and administrative
21,123

95

19,558

68

70,444

89

60,874

72

Gain on escrow settlement
—

—

(3,986
)

(14
)

—

—

(3,986
)

(5
)
Total costs and expenses
40,674

183

36,446

127

134,856

170

120,453

143

Loss from operations
(18,483
)

(83
)

(7,803
)

(27
)

(55,494
)

(70
)

(36,463
)

(43
)
Interest expense
(1,454
)

(6

)

(1,451
)

(5
)

(4,361
)

(5
)

(4,355
)

(5
)
Other expense, net
(161
)

(1
)

(377
)

(1
)

(527
)

(1
)

(889
)

(2
)
Loss before income taxes
(20,098
)

(90
)

(9,631

)

(33
)

(60,382
)

(76
)

(41,707
)

(50
)
Benefit from income taxes
309

1

362

1

2,093

3

1,271

2

Net loss
$
(19,789
)

(89
)%

$
(9,269
)

(32
)%

$
(58,289
)

(73
)%

$
(40,436
)

(48
)%

Revenue

We generate revenue primarily from sales of our products and services, license agreements, and government grants. Our product revenue consists of sales of instruments and consumables, including IFCs, assays, and other reagents. Our service revenue consists of post-warranty service contracts, preventive maintenance plans, instrument parts, installation, and training. We have entered into license agreements and have received government grants to conduct research and development activities. The following table presents our revenue by source for each period presented (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
Revenue:				
Instruments	$9,172	$15,057	$36,181	$42,757
Consumables	8,820	10,044	31,914	31,992
Product revenue	17,992	25,101	68,095	74,749
Service revenue	4,152	3,487	11,085	9,043
License and grant revenue	47	55	182	198
Total revenue	$22,191	$28,643	$79,362	$83,990

Table of Contents

The following table presents our total revenue by geographic area of our customers and as a percentage of total revenue for each period presented ($ in thousands):

	Three Months Ended September 30,				Nine Months Ended September 30,			
	2016		2015		2016		2015	
United States	$12,518	56 %	$13,627	48 %	$39,531	50 %	$43,375	52 %
Europe	5,194	24	10,049	35	22,980	29	25,977	31
Asia-Pacific	3,625	16	3,534	12	13,616	17	10,750	13
Other	854	4	1,433	5	3,235	4	3,888	4
Total	$22,191	100%	$28,643	100%	$79,362	100%	$83,990	100%

Total revenue from our five largest customers comprised 20% and 16% of our total revenue for the three and nine months ended September 30, 2016, respectively, and 13% of our total revenue for both the three and nine months ended September 30, 2015.

Revenue from sales to China represented 10% of our total revenue, or $2.3 million, and 11% of our total revenue, or $8.4 million for the three and nine months ended September 30, 2016, respectively, and did not exceed 10% for both the three and nine months ended September 30, 2015.

Total revenue in Europe decreased $4.9 million, or 48%, to $5.2 million for the three months ended September 30, 2016 compared to the three months ended September 20, 2015. Total revenue in Europe decreased $3.0 million, or 12%, to $23.0 million for the nine months ended September 30, 2016 compared to the nine months ended September 20, 2015. The decreases were primarily due to lower genomics instrument sales, largely driven by increased competition.

Comparison of the Three Months Ended September 30, 2016 and September 30, 2015

Total Revenue

Total revenue decreased by $6.5 million, or 23%, to $22.2 million for the three months ended September 30, 2016 compared to $28.6 million for the three months ended September 30, 2015.

Product Revenue

Product revenue decreased by $7.1 million, or 28%, to $18.0 million for the three months ended September 30, 2016 compared to the three months ended September 30, 2015. Total product revenue from Research customers decreased by $3.6 million, or 23%, to $11.9 million for the three months ended September 30, 2016 compared to the three months ended September 30, 2015. Total product revenue from Applied customers decreased by $3.5 million, or 36%, to $6.1 million for the three months ended September 30, 2016 compared to the three months ended September 30, 2015. The decreases from Research and Applied customers were mainly due to a decline in instrument sales and, to a lesser extent, a decrease in sales of IFCs.

Instrument revenue decreased by $5.9 million, or 39%, to $9.2 million for the three months ended September 30, 2016 compared to the three months ended September 30, 2015. The decrease was due to a decline in both unit sales across all instrument systems and lower average selling prices across most instrument systems, particularly for genomics instruments.

Consumables revenue decreased by $1.2 million, or 12%, to $8.8 million, for the three months ended September 30, 2016 compared to the three months ended September 30, 2015. The decrease was primarily attributable to a decrease in unit sales of genomics IFCs.

Annualized IFC pull-through for our genomics analytical systems was moderately below our historical range of $25,000 to $35,000 per system per year. Annualized IFC pull-through for our genomics preparatory systems was substantially below our historical range of $15,000 to $25,000 per system per year, and consumables pull-through for our proteomics analytical systems was slightly below our historical range of $50,000 to $70,000 per system per year. IFC pull-through is determined by dividing the applicable IFC revenue for a specific period by the number of genomics analytical or preparatory systems, as applicable, in our installed base at the beginning of the period. Similarly, consumables pull-through for proteomics analytical systems is determined by dividing the related

consumables revenue for a specific period by the number of proteomics analytical systems in our installed

Table of Contents

base at the beginning of the period. The IFC and consumables pull-through amounts are annualized by multiplying the pull-through amounts by a ratio, the numerator of which equals 12 and the denominator of which equals the number of months in the specific period.

We expect the average selling prices of our products to fluctuate over time based on market conditions, product mix, and currency fluctuations. In addition, our total revenue declined for both the three and nine months ended September 30, 2016 compared to the three and nine months ended September 30, 2015 and we cannot provide assurance concerning future revenue growth, if any.

Service Revenue

Service revenue increased by $0.7 million, or 19%, to $4.2 million for the three months ended September 30, 2016 compared to $3.5 million for the three months ended September 30, 2015, primarily due to increased sales of post-warranty service contracts and replacement instrument parts as our installed base continues to grow.

License Revenue

License revenue was $47 thousand and $55 thousand during the three months ended September 30, 2016 and 2015, respectively, and was generated in the United States.

Cost of Product and Service Revenue

The following table presents our cost of product and service revenue and product and service margins for each period presented ($ in thousands):

	Three Months Ended September 30,			
	2016		2015	
Cost of product revenue	$9,071		$10,463	
Product margin	50	%	58	%
Cost of service revenue	$1,228		$967	
Service margin	70	%	72	%

Cost of product revenue includes manufacturing costs incurred in the production process, including component materials, labor and overhead, packaging, and delivery costs. In addition, cost of product revenue includes amortization of developed technology and intangibles, royalty costs for licensed technologies included in our products, warranty, provisions for slow-moving and obsolete inventory, and stock-based compensation expense. Cost of service revenue includes direct labor hours, overhead, and instrument parts. Costs related to license and grant revenue are included in research and development expense.

Cost of product revenue decreased by $1.4 million, or 13%, to $9.1 million for the three months ended September 30, 2016 compared to the three months ended September 30, 2015. Overall cost of product revenue as a percentage of related revenue was 50% and 42% for the three months ended September 30, 2016 and 2015, respectively. Product margin declined by eight percentage points compared to the same period in 2015, predominantly due to higher acquisition-related intangible amortization costs as a percentage of product revenue, higher depreciation and amortization expenses, and, to a lesser extent, lower average selling prices for certain genomic preparatory and analytical instruments, coupled with unfavorable instrument product mix and higher product costs for genomics instruments and IFCs. The margin decline was partially offset by a favorable sales mix attributable to increased sales of certain consumables with higher product margin compared to our instruments.

Cost of service revenue increased by $0.3 million, or 27%, to $1.2 million for the three months ended September 30, 2016 compared to the three months ended September 30, 2015. Overall cost of service revenue as a percentage of related revenue was 30% and 28% for the three months ended September 30, 2016 and 2015, respectively. The service margins decreased two percentage points during the three months ended September 30, 2016 compared to the same period in 2015, mainly due to higher labor and material costs associated with the increase in post-warranty service contracts.

Table of Contents

Operating Expenses

The following table presents our operating expenses for each period presented (in thousands):

	Three Months Ended September 30,	
	2016	2015
Research and development	$9,252	$9,444
Selling, general and administrative	21,123	19,558
Total	$30,375	$29,002

Research and Development

Research and development expense consists primarily of personnel and independent contractor costs, prototype and material expenses, and other allocated facilities and information technology expenses. We have made substantial investments in research and development since our inception. Our research and development efforts have focused primarily on enhancing our technologies and supporting development and commercialization of new and existing products and services.

Research and development expense decreased $0.2 million, or 2%, to $9.3 million for the three months ended September 30, 2016 compared to the three months ended September 30, 2015. The decrease was primarily due to a decrease in product materials and supplies of $0.8 million, partially offset by an increase in headcount and compensation related costs of $0.4 million.

Selling, General and Administrative

Selling, general and administrative expense consists primarily of personnel costs for our sales and marketing, business development, finance, legal, human resources, and general management, as well as professional services, such as legal and accounting services.

Selling, general and administrative expense increased $1.6 million, or 8%, to $21.1 million for the three months ended September 30, 2016 compared to the three months ended September 30, 2015. This increase was primarily due to an increase in headcount and compensation related costs of $2.2 million. The increase was partially offset by a decrease in infrastructure and facilities related costs of $0.8 million.

Interest Expense and Other Expense, Net

The following table presents these items for each period presented (in thousands):

	Three Months Ended September 30,	
	2016	2015
Interest expense	$1,454	$1,451
Other expense, net	161	377
Total	$1,615	$1,828

On February 4, 2014, we closed an underwritten public offering of $201.3 million aggregate principal amount of our 2.75% Senior Convertible Notes due 2034, or the Notes. The Notes accrue interest at a rate of 2.75% per year, payable semi-annually in arrears on February 1 and August 1 of each year, commencing August 1, 2014. The Notes will mature on February 1, 2034, unless earlier converted, redeemed, or repurchased in accordance with the terms of the Notes.

Interest expense was $1.5 million for both the three months ended September 30, 2016 and 2015.

Other expense decreased by $0.2 million, to $0.2 million for the three months ended September 30, 2016 compared to the three months ended September 30, 2015, mainly due to the net effects of foreign exchange rate changes during the three months ended September 30, 2016.

Table of Contents

Benefit from Income Taxes

We recorded a tax benefit of $0.3 million and $0.4 million for the three months ended September 30, 2016 and 2015, respectively. The tax benefit for both periods was primarily attributable to the amortization of our acquisition-related deferred tax liability, partially offset by tax provision and discrete items from our foreign operations.

Comparison of the Nine Months Ended September 30, 2016 and September 30, 2015

Total Revenue

Total revenue decreased by $4.6 million, or 6%, to $79.4 million for the nine months ended September 30, 2016 compared to $84.0 million for the nine months ended September 30, 2015.

Product Revenue

Product revenue decreased by $6.7 million, or 9%, to $68.1 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015. Total product revenue from Research customers decreased by $5.6 million, or 11%, to $43.1 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015. Total product revenue from Applied customers decreased by $1.1 million, or 4%, to $25.0 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015. The decreases from Research and Applied customers were largely attributable to an overall decline in instrument sales. Instrument revenue decreased by $6.6 million, or 15%, to $36.2 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015. The decrease was primarily driven by a decrease in unit sales of our core genomics instruments, coupled with lower average selling prices for most instrument sales. Consumables revenue decreased by $0.1 million to $31.9 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015. The decrease was mainly driven by a decrease in unit sales of genomics preparatory IFCs, partially offset by an increase in unit sales of genomics analytical IFCs and an increase in sales of proteomics antibodies.

Service Revenue

Service revenue increased by $2.0 million, or 23%, to $11.1 million for the nine months ended September 30, 2016 compared to $9.0 million for the nine months ended September 30, 2015, primarily due to increased sales of post-warranty service contracts and replacement instrument parts as our installed base continues to grow.

License Revenue

License revenue was $0.2 million for both the nine months ended September 30, 2016 and 2015, and was generated in the United States.

Table of Contents

Cost of Product and Service Revenue

The following table presents our cost of product and service revenue and product and service margins for each period presented (in thousands):

	Nine Months Ended September 30,	
	2016	2015
Cost of product revenue	$31,097	$31,512
Product margin	54 %	58 %
Cost of service revenue	3,673	2,529
Service margin	67 %	72 %

Cost of product revenue decreased by $0.4 million, or 1%, to $31.1 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015. Overall cost of product revenue as a percentage of related revenue was 46% and 42% for the nine months ended September 30, 2016 and 2015, respectively. Product margin declined by four percentage points during the nine months ended September 30, 2016 compared to the same period in 2015, predominantly due to higher acquisition-related intangible amortization costs as a percentage of product revenue, higher depreciation and amortization expenses, and, to a lesser extent, unfavorable instrument product mix and lower average selling prices across most of our instrument sales.

Cost of service revenue increased by $1.1 million, or 45%, to $3.7 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015. Overall cost of service revenue as a percentage of related revenue was 33% and 28% for the nine months ended September 30, 2016 and 2015, respectively. Service margins decreased five percentage points during the nine months ended September 30, 2016 compared to the same period in 2015, mainly driven by higher labor and material costs associated with the increase in post-warranty service contracts.

Operating Expenses

The following table presents our operating expenses for each period presented (in thousands):

	Nine Months Ended September 30,	
	2016	2015
Research and development	$29,642	$29,524
Selling, general and administrative	70,444	60,874
Total	$100,086	$90,398

Research and Development

Research and development expense increased $0.1 million to $29.6 million for the nine months ended September 30, 2016, compared to the nine months ended September 30, 2015, mainly driven by an increase in compensation related costs of $1.1 million, offset by a decrease in product materials and supplies of $1.0 million.

Selling, General and Administrative

Selling, general and administrative expense for the nine months ended September 30, 2016 increased $9.6 million, or 16%, to $70.4 million compared to the nine months ended September 30, 2015. This increase was primarily attributable to an increase in headcount and compensation related costs of $8.0 million and an increase in legal fees and outside services of $2.0 million. The increases were partially offset by a decrease in facilities related costs of $1.7 million, mainly driven by our facility expansions in 2015.

Table of Contents

Interest Expense and Other Expense, Net

The following table presents these items for each period presented (in thousands):

	Nine Months Ended September 30,	
	2016	2015
Interest expense	$4,361	$4,355
Other expense, net	527	889
Total	$4,888	$5,244

Interest expense was 4.4 million for both the nine months ended September 30, 2016 and 2015.

Other expense, net decreased by $0.4 million for the nine months ended September 30, 2016 compared to the nine months ended September 30, 2015, primarily due to the net effects of foreign exchange rate changes.

Benefit from Income Taxes

We recorded a tax benefit of $2.1 million and $1.3 million for the nine months ended September 30, 2016 and 2015, respectively. The tax benefit for both periods was primarily attributable to the amortization of our acquisition-related deferred tax liability, partially offset by tax provision from our foreign operations.

Liquidity and Capital Resources

Sources of Liquidity

As of September 30, 2016, our principal sources of liquidity consisted of $32.3 million of cash and cash equivalents and $38.9 million of short-term investments. As of September 30, 2016, our working capital excluding deferred revenue was $89.9 million.

The following table presents our cash flow summary for each period presented (in thousands):

	Nine Months Ended September 30,	
	2016	2015
Net cash used in operating activities	$(28,377)	$(30,329)
Net cash provided by investing activities	31,317	20,900
Net cash provided by financing activities	96	5,272
Net increase (decrease) in cash and cash equivalents	3,189	(4,896)

Net Cash Used in Operating Activities

We derive cash flows from operations primarily from cash collected from the sale of our products and services, license agreements, and grants from certain government entities. Our cash flows from operating activities are also significantly influenced by our use of cash for operating expenses to support the growth of our business. We have historically experienced negative cash flows from operating activities as we have expanded our business and built our infrastructure domestically and internationally, and this may continue in the future.

Net cash used in operating activities for the nine months ended September 30, 2016 was $28.4 million, and consisted of net loss of $58.3 million, adjusted for non-cash adjustments of $25.0 million and net change in assets and liabilities of $4.9 million. Non-cash items primarily included stock-based compensation expense of $11.0 million, amortization of developed technology of $8.4 million, depreciation and amortization of $5.0 million, and $0.6 million in other non-cash adjustments. The net change in assets and liabilities was primarily driven by a decrease in accounts receivable of $12 million due to increased cash collections, partially offset by an increase in inventory of $4.1 million, decreases in account payable of $1.4 million and liabilities of $2.2 million.

Table of Contents

Net cash used in operating activities for the nine months ended September 30, 2015, was $30.3 million, and consisted of net loss of $40.4 million, less non-cash adjustments of $21.5 million, plus net change in assets and liabilities of $11.4 million. Non-cash items primarily included stock-based compensation expense of $12.9 million, amortization of developed technology of $8.4 million, and depreciation and amortization of $4.0 million. The net change in assets and liabilities was primarily driven by increases in inventory of $4.6 million and accounts receivable of $3.6 million, and a decrease in liabilities of $5.1 million, partially offset by an increase in deferred revenue of $2.0 million.

Net Cash Provided by Investing Activities

Our primary investing activities consist of purchases, sales, and maturities of our short-term and long-term investments and to a much lesser extent, capital expenditures for manufacturing, laboratory, and computer equipment and software to support our expanding infrastructure and work force. We expect to continue to expand our manufacturing capability and throughput, including improvements in manufacturing productivity, and expect to incur additional costs for capital expenditures related to these efforts in future periods. In addition, we expect to continue to incur costs for capital expenditures for demonstration units and loaner equipment to support our sales and service efforts, and computer equipment and software to support our growth.

Net cash provided by investing activities was $31.3 million during the nine months ended September 30, 2016. Net cash provided by investing activities primarily consisted of $71.9 million of proceeds from sales and maturities of investments, proceeds from the gain of investment in Verinata of $2.3 million (described below), partially offset by purchases of investments of $38.6 million and capital expenditures of $4.4 million.

In February 2013, Illumina, Inc. acquired Verinata Health, Inc. (Verinata) for $350 million in cash and up to an additional $100 million in milestone payments through December 2015. The final milestones related to the sale of Verinata to Illumina were met in December 2015 and, accordingly, we recorded our share of these milestone payment obligations in the amount of $2.3 million from the sale of investment in Verinata in the accompanying consolidated statement of operations for the year ended December 31, 2015. The $2.3 million payment was subsequently received in January 2016.

Net cash provided by investing activities was $20.9 million during the nine months ended September 30, 2015. Net cash provided by investing activities primarily consisted of $77.3 million of proceeds from sales and maturities of investments, partially offset by purchases of investments of $53.7 million, capital expenditures of $2.5 million and intangible assets of $0.2 million, primarily to support growth in our employee base worldwide and our growth in manufacturing operations.

Net Cash Provided by Financing Activities

Net cash provided by financing activities consists of proceeds received in connection with the exercise of options for our common stock.

Net cash provided by financing activities was $0.1 million and $5.3 million during the nine months ended September 30, 2016 and September 30, 2015, respectively, and consists of proceeds received in connection with the exercise of options for our common stock.

Capital Resources

At September 30, 2016, our working capital excluding deferred revenue was $89.9 million, including cash, cash equivalents, and short-term investments of $71.2 million.

We believe our existing cash, cash equivalents, and investments will be sufficient to meet our working capital and capital expenditure needs for at least the next 18 months. However, we may experience lower than expected cash generated from operating activities or greater than expected capital expenditures, cost of revenue, or operating expenses, and we may need to raise additional capital to fund our operations, further our research and development activities, or acquire or invest in a business. Our future funding requirements will depend on many factors, including market acceptance of our products, the cost of our research and development activities, the cost of filing and prosecuting patent applications, the cost associated with litigation or disputes relating to intellectual property rights or otherwise, the cost and timing of regulatory clearances or approvals, if any, the cost and timing of establishing additional sales, marketing, and distribution capabilities, the cost and timing of establishing additional technical support capabilities, and the effect of competing technological and market developments. In the future, we may acquire businesses or technologies from third parties, and we may decide to raise additional capital through debt or

equity financing to the extent we believe this is necessary to successfully complete these acquisitions. We currently have no material commitments or agreements relating to any such acquisitions.

Table of Contents

In light of negative revenue growth in 2016 compared to 2015, we expect to implement efficiency and cost reduction initiatives to reduce our operating expenses, align resources with our product strategy, and manage our cash flows through the remainder of 2016 and into 2017. These initiatives may include decreasing or deferring capital expenditures and development activities, and optimizing our organization; such measures may impair our ability to invest in developing, marketing and selling new and existing products. If our cost reduction efforts are unsuccessful, our cash position could be negatively impacted and we may, among other things, be required to seek other sources of financing.

If we require additional funds in the future, we may not be able to obtain such funds on acceptable terms, or at all. If we raise additional funds by issuing equity securities, our stockholders may experience dilution. Debt financing, if available, may involve covenants restricting our operations or our ability to incur additional debt. Any debt or additional equity financing that we raise may contain terms that are not favorable to us or our stockholders. If we do not have, or are not able to obtain, sufficient funds, we may have to delay development or commercialization of our products or license to third parties the rights to commercialize products or technologies that we would otherwise seek to commercialize.

Off-Balance Sheet Arrangements

As of September 30, 2016, we did not have any off-balance sheet arrangements as defined in Item 303(a)(4) of the Securities and Exchange Commission's Regulation S-K.

Contractual Obligations and Commitments

Our operating lease obligations relate to a lease for our current headquarters and leases for manufacturing, laboratory, warehousing and office space for our foreign subsidiaries. Please see Note 7 to the financial statements for a description of our lease obligations.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily a result of fluctuations in foreign currency exchange rates and interest rates. We do not hold or issue financial instruments for trading purposes.

Foreign Currency Exchange Risk

As we expand internationally, our results of operations and cash flows will become increasingly subject to fluctuations due to changes in foreign currency exchange rates. Our revenue is generally denominated in the local currency of the contracting party. Historically, the majority of our revenue has been denominated in U.S. dollars. Our expenses are generally denominated in the currencies in which our operations are located, which is primarily in the United States, with a portion of expenses incurred in Singapore and Canada where our manufacturing facilities are located. Our results of operations and cash flows are, therefore, subject to fluctuations due to changes in foreign currency exchange rates. The volatility of exchange rates depends on many factors that we cannot forecast with reliable accuracy. We have experienced and will continue to experience fluctuations in our net income or loss as a result of transaction gains or losses related to revaluing certain current asset and current liability balances that are denominated in currencies other than the functional currency of the entities in which they are recorded. For the nine months ended September 30, 2016 and 2015, we experienced foreign currency losses of $0.8 million and $1.2 million, respectively. To date, we have not entered into any foreign currency hedging contracts although we may do so in the future. As our international operations grow, we will continue to reassess our approach to manage our risk relating to fluctuations in currency rates. If foreign currency exchange rates had changed by 10% during the periods presented, it would not have had a material impact on our financial position or results of operations.

Interest Rate Sensitivity

We had cash and cash equivalents of $32.3 million at September 30, 2016. These amounts were held primarily in cash on deposit with banks and money market funds which are short-term. We had $38.9 million in investments at September 30, 2016, held primarily in U.S. government and agency securities with contractual maturity dates that are within one year from September 30, 2016. Cash and cash equivalents and investments are held for working capital purposes. Due to the short-term nature of these investments, we believe that we do not have any material exposure to

changes in the fair value of our investment portfolio as a result of changes in interest rates. Declines in interest rates, however, will reduce future investment income. If

Table of Contents

overall interest rates had decreased by 10% during the periods presented, our interest income would not have been materially affected.

Fair Value of Financial Instruments

We do not have material exposure to market risk with respect to investments. We do not use derivative financial instruments for speculative or trading purposes. However, we may adopt specific hedging strategies in the future.

Item 4. Controls and Procedures

Evaluation of 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 of September 30, 2016. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of September 30, 2016, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the three months ended September 30, 2016 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on the Effectiveness of Controls

Control systems, no matter how well conceived and operated, are designed to provide a reasonable, but not an absolute, level of assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. Because of the inherent limitations in any control system, misstatements due to error or fraud may occur and not be detected.

Table of Contents

PART II. OTHER INFORMATION

Item 1. Legal Proceedings.

In the normal course of business, we are from time to time involved in legal proceedings or potential legal proceedings, including matters involving employment, intellectual property, or others. Although the results of litigation and claims cannot be predicted with certainty, we currently believe that the final outcome of any currently pending matters would not have a material adverse effect on our business, operating results, financial condition, or cash flows. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources, and other factors.

ITEM 1A. RISK FACTORS

We operate in a rapidly changing environment that involves numerous uncertainties and risks. The following risks and uncertainties may have a material and adverse effect on our business, financial condition, or results of operations. You should consider these risks and uncertainties carefully, together with all of the other information included or incorporated by reference in this Form 10-Q. If any of the risks or uncertainties we face were to occur, the trading price of our securities could decline, and you may lose all or part of your investment.

Risks Related to Fluidigm's Business and Strategy

Our financial results and revenue growth rates have varied significantly from quarter-to-quarter and year-to-year due to a number of factors, and a significant variance in our operating results or rates of growth, if any, could lead to substantial volatility in our stock price.

Our revenue, results of operations, and revenue growth rates have varied in the past and may continue to vary significantly from quarter-to-quarter or year-to-year. For example, in 2011, 2012 and 2014, we experienced higher sales in the fourth quarter than in the first quarter of the next fiscal year. Although this was not the case in the fourth quarter of 2013 compared to the first quarter of 2014, this seasonal historical trend resumed in 2015 and 2016, and we expect it to continue. Additionally, for the quarters ended March 31, 2016 and June 30, 2015, we experienced year-over-year revenue growth rates that were substantially lower than revenue growth rates experienced in other periods since our initial public offering, and we experienced a year-over-year decline in revenue for the quarters ended September 30, 2016, June 30, 2016, September 30, 2015, and for the year ended December 31, 2015. We may experience substantial variability in our product mix from period-to-period as revenue from sales of our instruments relative to sales of our consumables may fluctuate or deviate significantly from expectations. Variability in our quarterly or annual results of operations, mix of product revenue, or rates of revenue growth, if any, may lead to volatility in our stock price as research analysts and investors respond to these fluctuations. These fluctuations are due to numerous factors that are difficult to forecast, including: fluctuations in demand for our products; changes in customer budget cycles and capital spending; seasonal variations in customer operations; tendencies among some customers to defer purchase decisions to the end of the quarter; the large unit value of our systems; changes in our pricing and sales policies or the pricing and sales policies of our competitors; our ability to design, manufacture, market, sell, and deliver products to our customers in a timely and cost-effective manner; quality control or yield problems in our manufacturing operations; our ability to timely obtain adequate quantities of the materials or components used in our products, which in certain cases are purchased through sole and single source suppliers; new product introductions and enhancements by us and our competitors; unanticipated increases in costs or expenses; our complex, variable and, at times, lengthy sales cycle; global economic conditions; and fluctuations in foreign currency exchange rates. Additionally, we have certain customers who have historically placed large orders in multiple quarters during a calendar year. A significant reduction in orders from one or more of these customers could adversely affect our revenue and operating results, and if these or other customers defer or cancel purchases or otherwise alter their purchasing patterns, our financial results and actual results of operations could be significantly impacted. Other unknown or unpredictable factors also could harm our results.

The foregoing factors, as well as other factors, could materially and adversely affect our quarterly and annual results of operations and rates of revenue growth, if any. We have experienced significant revenue growth in the past but we may not achieve similar growth rates in future periods. You should not rely on our operating results for any prior quarterly or annual period as an indication of our future operating performance. If we are unable to maintain adequate revenue growth, our operating results could suffer and our stock price could decline. In addition, a significant amount of our operating expenses are relatively fixed due to our manufacturing, research and development, and sales and general administrative efforts. Any failure to adjust spending quickly enough to compensate for a shortfall relative to our anticipated revenue could magnify the adverse impact of such shortfalls on our results of operations. We expect that our sales will continue to fluctuate on an annual and quarterly basis

Table of Contents

and that our financial results for some periods may be below those projected by securities analysts, which could significantly decrease the price of our common stock.

The life science research and applied markets are highly competitive and subject to rapid technological change, and we may not be able to successfully compete.

The markets for our products are characterized by rapidly changing technology, evolving industry standards, changes in customer needs, emerging competition, new product introductions, and strong price competition. We compete with both established and development stage life science research companies that design, manufacture, and market instruments and consumables for gene expression analysis, single-cell targeted gene expression or protein expression analysis, single nucleotide polymorphism genotyping, or SNP genotyping, polymerase chain reaction, or PCR, digital PCR, other nucleic acid detection, flow cytometry, cell imaging, and additional applications using well established laboratory techniques, as well as newer technologies such as bead encoded arrays, microfluidics, nanotechnology, high-throughput DNA sequencing, microdroplets, and photolithographic arrays. For example, companies such as 10X Genomics, Inc., Affymetrix, Inc. (now part of Thermo Fisher Scientific, Inc.), Agena Bioscience, Inc., Agilent Technologies, Inc., Becton, Dickinson and Company, Bio-Rad Laboratories, Inc., Cellular Research, Inc. (now a part of Becton, Dickinson and Company), Danaher Corporation, Illumina, Inc., Life Technologies Corporation (now part of Thermo Fisher Scientific Inc.), LGC Limited, Luminex Corporation, Millipore Corporation, NanoString Technologies, Inc., PerkinElmer, Inc. (through its acquisition of Caliper Life Sciences, Inc.), RainDance Technologies, Inc., Roche Diagnostics Corporation, Sony Corporation, Thermo Fisher Scientific Inc., and WaferGen Bio-systems, Inc. have products that compete in certain segments of the market in which we sell our products. Most of our current competitors have significantly greater name recognition, greater financial and human resources, broader product lines and product packages, larger sales forces, larger existing installed bases, larger intellectual property portfolios, and greater experience and scale in research and development, manufacturing, and marketing than we do. In addition, we have recently experienced increased competition in the single-cell biology market, including new product releases from Becton, Dickinson and Company, 10X Genomics, Inc. and WaferGen Bio-systems, Inc., as well as an announced exclusive partnership between Illumina, Inc. and Bio-Rad Laboratories, Inc.

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 product or service offerings of our competitors, current or potential customers might accept competitive products and services in lieu of purchasing our technology. We anticipate that we will face increased competition in the future as existing companies and competitors develop new or improved products and as new companies enter the market with new technologies. Increased competition is likely to result in pricing pressures, which could reduce our profit margins and increase our sales and marketing expenses. In addition, mergers, consolidations, or other strategic transactions between two or more of our competitors, or between our competitor and one of our key customers, could change the competitive landscape and weaken our competitive position, adversely affecting our business.

Market opportunities may not develop as quickly as we expect, limiting our ability to successfully sell our products, or our product development and strategic plans may change and our entry into certain markets may be delayed, if it occurs at all.

The application of our technologies to single-cell biology (across genomics and proteomics) and production genomics applications are emerging market opportunities. We believe these opportunities will take several years to develop or mature and we cannot be certain that these market opportunities will develop as we expect. The future growth of the single-cell biology market and the success of our products depend on many factors beyond our control, including recognition and acceptance by the scientific community, and the growth, prevalence, and costs of competing methods of genetic and protein analysis. If the market for single-cell biology and production genomics do not develop as we

expect, our business may be adversely affected. Additionally, our success in these markets may depend to a large extent on our ability to successfully sell products using our technologies. If we are not able to successfully market and sell our products, or to achieve the revenue or margins we expect, our operating results may be harmed and we may not recover our product development and marketing expenditures. In addition, our product development and strategic plans may change, which could delay or impede our entry into these markets.

Table of Contents

If our products fail to achieve and sustain sufficient market acceptance, our revenue will be adversely affected.

Our success depends, in part, on our ability to develop and market products that are recognized and accepted as reliable, enabling and cost-effective. Most of our potential customers already use expensive research systems in their laboratories and may be reluctant to replace those systems. Market acceptance of our systems will depend on many factors, including our ability to convince potential customers that our systems are an attractive alternative to existing technologies. Compared to some competing technologies, our technology is relatively new, and most potential customers have limited knowledge of, or experience with, our products. Prior to adopting our systems, some potential customers may need to devote time and effort to testing and validating our systems. Any failure of our systems to meet these customer benchmarks could result in customers choosing to retain their existing systems or to purchase systems other than ours.

In addition, it is important that our systems be perceived as accurate and reliable by the scientific and medical research community as a whole. Historically, a significant part of our sales and marketing efforts has been directed at convincing industry leaders of the advantages of our systems and encouraging such leaders to publish or present the results of their evaluation of our system. If we are unable to continue to induce leading researchers to use our systems, or if such researchers are unable to achieve and publish or present significant experimental results using our systems, acceptance and adoption of our systems will be slowed and our ability to increase our revenue would be adversely affected.

We may experience development or manufacturing problems or delays that could limit the growth of our revenue or increase our losses.

We may encounter unforeseen situations in the manufacturing and assembly of our products that would result in delays or shortfalls in our production. For example, our production processes and assembly methods may have to change to accommodate any significant future expansion of our manufacturing capacity, which may increase our manufacturing costs, delay production of our products, reduce our product margin, and adversely impact our business.

Additionally, all of our IFCs for commercial sale are manufactured at our facility in Singapore. Production of the elastomeric block that is at the core of our IFCs is a complex process requiring advanced clean rooms, sophisticated equipment, and strict adherence to procedures. Any contamination of the clean room, equipment malfunction, or failure to strictly follow procedures can significantly reduce our yield in one or more batches. We have in the past experienced variations in yields due to such factors. A drop in yield can increase our cost to manufacture our IFCs or, in more severe cases, require us to halt the manufacture of our IFCs until the problem is resolved. Identifying and resolving the cause of a drop in yield can require substantial time and resources.

Furthermore, developing an IFC for a new application may require developing a specific production process for that type of IFC. While all of our IFCs are produced using the same basic processes, significant variations may be required to ensure adequate yield of any particular type of IFC. Developing such a process can be very time consuming, and any unexpected difficulty in doing so can delay the introduction of a product.

If our manufacturing activities are adversely impacted, or if we are otherwise unable to keep up with demand for our products by successfully manufacturing, assembling, testing, and shipping our products in a timely manner, our revenue could be impaired, market acceptance for our products could be adversely affected and our customers might instead purchase our competitors' products.

If our research and product development efforts do not result in commercially viable products within anticipated timelines, if at all, our business and results of operations will be adversely affected.

Our business is dependent on the improvement of our existing products, our development of new products to serve existing markets, and our development of new products to create new markets and applications that were previously not practical with existing systems. We intend to devote significant personnel and financial resources to research and development activities designed to advance the capabilities of our technology. We have developed design rules for the implementation of our technology that are frequently revised to reflect new insights we have gained about the technology. In addition, we have discovered that biological or chemical reactions sometimes behave differently when implemented on our systems rather than in a standard laboratory environment. Furthermore, many such reactions take place within the confines of single cells, which have also demonstrated unexpected behavior when grown and manipulated within microfluidic environments. As a result, research and development efforts may be required to transfer certain reactions and cell handling techniques to our systems. In the past, product

Table of Contents

development projects have been significantly delayed when we encountered unanticipated difficulties in implementing a process on our systems. We may have similar delays in the future, and we may not obtain any benefits from our research and development activities. Any delay or failure by us to develop and release new products or product enhancements would have a substantial adverse effect on our business and results of operations.

Our products could have defects or errors, which may give rise to claims against us, adversely affect market adoption of our systems, and adversely affect our business, financial condition, and results of operations.

Our systems utilize novel and complex technology and such systems may develop or contain undetected defects or errors. We cannot assure you that material performance problems, defects, or errors will not arise, and as we increase the density and integration of our systems, these risks may increase. We generally provide warranties that our systems will meet performance expectations and will be free from defects. The costs incurred in correcting any defects or errors may be substantial and could adversely affect our operating margins. For example, we have experienced a performance issue with respect to certain IFCs used in our C1 systems due to the presence of more than one cell in an IFC chamber. We have announced the release of one redesigned IFC and are currently working to redesign other impacted IFCs. Although we have announced our current expectation that the additional redesigned IFCs will be available in December 2016, we may experience unexpected delays or product development challenges that could affect the timing or our ability to release redesigned IFCs that adequately address these performance issues.

In manufacturing our products, including our systems, IFCs, and assays, we depend upon third parties for the supply of various components, many of which require a significant degree of technical expertise to produce. In addition, we purchase certain products from third-party suppliers for resale. If our suppliers fail to produce components to specification or provide defective products to us for resale and our quality control tests and procedures fail to detect such errors or defects, or if we or our suppliers use defective materials or workmanship in the manufacturing process, the reliability and performance of our products will be compromised.

If our products contain defects, we may experience:

- a failure to achieve market acceptance or expansion of our product sales;
- loss of customer orders and delay in order fulfillment;
- damage to our brand reputation;
- increased cost of our warranty program due to product repair or replacement;
- product recalls or replacements;
- inability to attract new customers;
- diversion of resources from our manufacturing and research and development departments into our service department; and
- legal claims against us, including product liability claims, which could be costly and time consuming to defend and result in substantial damages.

In addition, certain of our products are marketed for use with products sold by third parties. For example, our Access Array system is marketed as compatible with major next-generation DNA sequencing instruments. If such third-party products are not produced to specification, are produced in accordance with modified specifications, or are defective,

they may not be compatible with our products. In such case, the reliability and performance of our products may be compromised.

The occurrence of any one or more of the foregoing could negatively affect our business, financial condition, and results of operations.

Table of Contents

Our business depends on research and development spending levels of academic, clinical, and governmental research institutions, and pharmaceutical, biotechnology, and Ag-Bio companies, a reduction in which could limit our ability to sell our products and adversely affect our business.

We expect that our revenue in the foreseeable future will be derived primarily from sales of our systems and IFCs to academic institutions, clinical research laboratories that use our technology to develop tests, and pharmaceutical, biotechnology, and Ag-Bio companies worldwide. Our success will depend upon their demand for and use of our products. Accordingly, the spending policies of these customers could have a significant effect on the demand for our technology. These policies may be based on a wide variety of factors, including concerns regarding any future federal government budget sequestrations, the availability of resources to make purchases, the spending priorities among various types of equipment, policies regarding spending during recessionary periods, and changes in the political climate. In addition, academic, governmental, and other research institutions that fund research and development activities may be subject to stringent budgetary constraints that could result in spending reductions, reduced allocations, or budget cutbacks, which could jeopardize the ability of these customers to purchase our products. Our operating results may fluctuate substantially due to reductions and delays in research and development expenditures by these customers. For example, reductions in capital and operating expenditures by these customers may result in lower than expected sales of our systems and IFCs. These reductions and delays may result from factors that are not within our control, such as:

- changes in economic conditions;
- natural disasters;
- changes in government programs that provide funding to research institutions and companies;
- changes in the regulatory environment affecting life science and Ag-Bio companies engaged in research and commercial activities;
- differences in budget cycles across various geographies and industries;
- market-driven pressures on companies to consolidate operations and reduce costs;
- mergers and acquisitions in the life science and Ag-Bio industries; and
- other factors affecting research and development spending.

Any decrease in our customers' budgets or expenditures, or in the size, scope, or frequency of capital or operating expenditures, could materially and adversely affect our operations or financial condition.

If one or more of our manufacturing facilities become unavailable or inoperable, we will be unable to continue manufacturing our instruments, IFCs, assays and/or reagents and, as a result, our business will be harmed until we are able to secure a new facility.

We manufacture all of our genomics analytical and preparatory instruments and integrated fluidic circuits, or IFCs, for commercial sale at our facility in Singapore, our proteomics analytical instruments for commercial sale at our facility in Canada, and our assays and reagents for commercial sale at our facility in South San Francisco. No other manufacturing facilities are currently available to us, particularly facilities of the size and scope required by our Singapore and Canada operations. Our facilities and the equipment we use to manufacture our instruments, IFCs, assays, and reagents would be costly to replace and could require substantial lead time to repair or replace. Our

facilities may be harmed or rendered inoperable by natural or man-made disasters, which may render it difficult or impossible for us to manufacture our products for some period of time. If any of our facilities become unavailable to us, we cannot provide assurances that we will be able to secure a new manufacturing facility on acceptable terms, if at all. The inability to manufacture our products, combined with our limited inventory of manufactured supplies, may result in the loss of customers or harm our reputation, and we may be unable to reestablish relationships with those customers in the future. Although we possess insurance for damage to our property and the disruption of our business, this insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, or at all. If our manufacturing capabilities are impaired, we may not be able to manufacture and ship our products in a timely manner, which would adversely impact our business. We generate a substantial portion of our revenue internationally and are

Table of Contents

subject to various risks relating to such international activities, which could adversely affect our sales and operating performance. In addition, any disruption or delay in the shipping or off-loading of our products, whether domestically or internationally, may have an adverse effect on our financial condition and results of operations.

We generate a substantial portion of our revenue internationally and are subject to various risks relating to such international activities, which could adversely affect our sales and operating performance. In addition, any disruption or delay in the shipping or off-loading of our products, whether domestically or internationally, may have an adverse effect on our financial condition and results of operations.

During the nine months ended September 30, 2016 and the years ended 2015 and 2014, approximately 50%, 52% and 49%, respectively, of our total revenue was generated from sales to customers located outside of the United States. We believe that a significant percentage of our future revenue will come from international sources as we expand our international operations and develop opportunities in other countries. Engaging in international business inherently involves a number of difficulties and risks, including:

- required compliance with existing and changing foreign regulatory requirements and laws that are or may be applicable to our business in the future, such as the RoHS and WEEE directives, which regulate the use of certain hazardous substances in, and require the collection, reuse, and recycling of waste from, products we manufacture;
- required compliance with anti-bribery laws, such as the U.S. Foreign Corrupt Practices Act and U.K. Bribery Act, data privacy requirements, labor laws, and anti-competition regulations;
- export or import restrictions;
- laws and business practices favoring local companies;
- longer payment cycles and difficulties in enforcing agreements and collecting receivables through certain foreign legal systems;
- unstable economic, political, and regulatory conditions;
- potentially adverse tax consequences, tariffs, customs charges, bureaucratic requirements, and other trade barriers;
- difficulties and costs of staffing and managing foreign operations; and
- difficulties protecting or procuring intellectual property rights.

If one or more of these risks occurs, it could require us to dedicate significant resources to remedy, and if we are unsuccessful in finding a solution, our financial results will suffer.

In addition, on June 23, 2016, the United Kingdom (U.K.) held a referendum in which voters approved an exit from the European Union, commonly referred to as “Brexit.” As a result of the referendum, it is expected that the British government will begin negotiating the terms of the U.K.’s withdrawal from the European Union and the U.K.’s future relationships with European Union member states. Adverse consequences concerning Brexit or the European Union could include deterioration in global economic conditions, instability in global financial markets, political uncertainty, volatility in currency exchange rates, or adverse changes in the cross-border agreements currently in place, any of which could have an adverse impact on our financial results in the future.

A majority of our product sales are currently denominated in U.S. dollars and fluctuations in the value of the U.S. dollar relative to foreign currencies could decrease demand for our products and adversely impact our financial performance. For example, if the value of the U.S. dollar increases relative to foreign currencies, our products could become more costly to the international consumer and therefore less competitive in international markets, or if the value of the U.S. dollar decreases relative to the Singapore dollar or the Canadian dollar, it would become more costly in U.S. dollars for us to manufacture our products in Singapore and/or in Canada. Additionally, our expenses are generally denominated in the currencies of the countries in which our operations are located, which is primarily in the United States, with a portion of expenses incurred in Singapore and Canada where a significant portion of our manufacturing operations are located. Our results of operations and cash flows are, therefore,

Table of Contents

subject to fluctuations due to changes in foreign currency exchange rates. The volatility of exchange rates depends on many factors that we cannot forecast with reliable accuracy. We have experienced and will continue to experience fluctuations in our net income or loss as a result of transaction gains or losses related to revaluing certain current asset and current liability balances that are denominated in currencies other than the functional currency of the entities in which they are recorded. For example, for the nine months ended September 30, 2016 and for the years ended December 31, 2015 and 2014, we experienced foreign currency losses of $0.8 million, $1.6 million and $1.1 million, respectively. Fluctuations in currency exchange rates could have an adverse impact on our financial results in the future.

We rely on shipping providers to deliver products to our customers globally. Labor, tariff, or World Trade Organization-related disputes, piracy, physical damage to shipping facilities or equipment caused by severe weather or terrorist incidents, congestion at shipping facilities, inadequate equipment to load, dock, and offload our products, energy-related tie-ups, or other factors could disrupt or delay shipping or off-loading of our products domestically and internationally. Such disruptions or delays may have an adverse effect on our financial condition and results of operations.

We are dependent on single and sole source suppliers for some of the components and materials used in our products, and the loss of any of these suppliers could harm our business.

We rely on single and sole source suppliers for certain components and materials used in our products. Additionally, several of our instruments are assembled at the facilities of contract manufacturers in Singapore. We do not have long term contracts with our suppliers of these components and materials or our assembly service providers. The loss of a single or sole source supplier of any of the following components and/or materials would require significant time and effort to locate and qualify an alternative source of supply, if at all:

- The IFCs used in our microfluidic systems are fabricated using a specialized polymer, and other specialized materials, that are available from a limited number of sources. In the past, we have encountered quality issues that have reduced our manufacturing yield or required the use of additional manufacturing processes.

- Specialized pneumatic and electronic components for our C1, Callisto, Juno, and Polaris systems are available from a limited number of sources.

- The electron multiplier detector included in the Helios/CyTOF 2 systems and certain metal isotopes used with the Helios/CyTOF 2 systems are purchased from sole source suppliers.

- The nickel sampler cone used with the Helios/CyTOF 2 systems is purchased from single source suppliers and is available from a limited number of sources.

- The raw materials for our Delta Gene and SNP Type assays and Access Array target-specific primers are available from a limited number of sources.

Our reliance on single and sole source suppliers and assembly service providers also subjects us to other risks that could harm our business, including the following:

- we may be subject to increased component or assembly costs;

- we may not be able to obtain adequate supply or services in a timely manner or on commercially reasonable terms;

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our suppliers or service providers may make errors in manufacturing or assembly of components that could negatively affect the efficacy of our products or cause delays in shipment of our products; and

- our suppliers or service providers may encounter capacity constraints or financial hardships unrelated to our demand for components or services, which could inhibit their ability to fulfill our orders and meet our requirements.

We have in the past experienced quality control and supply problems with some of our suppliers, such as manufacturing errors, and may again experience problems in the future. We may not be able to quickly establish additional or replacement suppliers, particularly for our single source components, or assembly service providers. Any interruption or delay in the supply of components or materials or assembly of our instruments, or our inability to obtain components, materials, or assembly services

Table of Contents

from alternate sources at acceptable prices in a timely manner, could impair our ability to meet the demand of our customers and cause them to cancel orders or switch to competitive products.

Our future success is dependent upon our ability to expand our customer base and introduce new applications.

Our customer base is primarily composed of academic institutions, clinical research laboratories that use our technology to develop tests, and pharmaceutical, biotechnology, and agricultural biotechnology, or Ag-Bio, companies that perform analyses for research and commercial purposes. Our success will depend, in part, upon our ability to increase our market share among these customers, attract additional customers outside of these markets, and market new applications to existing and new customers as we develop such applications. Attracting new customers and introducing new applications require substantial time and expense. For example, it may be difficult to identify, engage, and market to customers who are unfamiliar with the current applications of our systems. Any failure to expand our existing customer base or launch new applications would adversely affect our ability to increase our revenue.

We may not be able to develop new products or enhance the capabilities of our existing systems to keep pace with rapidly changing technology and customer requirements, which could have a material adverse effect on our business, revenue, financial condition, and operating results.

Our success depends on our ability to develop new products and applications for our technology in existing and new markets, while improving the performance and cost-effectiveness of our systems. New technologies, techniques, or products could emerge that might offer better combinations of price and performance than our current or future product lines and systems. Existing markets for our products, including single-cell biology and production genomics, as well as potential markets for our products such as high-throughput DNA sequencing and molecular diagnostics applications, are characterized by rapid technological change and innovation. It is critical to our success for us to anticipate changes in technology and customer requirements and to successfully introduce new, enhanced, and competitive technology to meet our customers' and prospective customers' needs on a timely and cost-effective basis. Developing and implementing new technologies will require us to incur substantial development costs and we may not have adequate resources available to be able to successfully introduce new applications of, or enhancements to, our systems. We cannot guarantee that we will be able to maintain technological advantages over emerging technologies in the future. While we typically plan improvements to our systems, we may not be able to successfully implement these improvements. If we fail to keep pace with emerging technologies, demand for our systems will not grow and may decline, and our business, revenue, financial condition, and operating results could suffer materially. In addition, if we introduce enhanced systems but fail to manage product transitions effectively, customers may delay or forgo purchases of our systems and our operating results may be adversely affected by product obsolescence and excess inventory. Even if we successfully implement some or all of these planned improvements, we cannot guarantee that our current and potential customers will find our enhanced systems to be an attractive alternative to existing technologies, including our current products.

We have incurred losses since inception, and we may continue to incur substantial losses for the foreseeable future.

We have a limited operating history and have incurred significant losses in each fiscal year since our inception, including net losses of $58.3 million, $53.3 million, and $52.8 million during the nine months ended September 30, 2016 and for the years ended December 31, 2015 and 2014, respectively. As of September 30, 2016, we had an accumulated deficit of $421.8 million. These losses have resulted principally from costs incurred in our research and development programs, and from our manufacturing costs and selling, general, and administrative expenses. We believe that our continued investment in research and development, sales, and marketing is essential to our long-term competitive position and future growth. To the extent we are unable to invest sufficiently in these activities, our business could be harmed, for example, by reduced ability to develop, market and sell new and existing products.

Until we are able to generate additional revenue to support our level of operating expenses, we will continue to incur operating and net losses and negative cash flow from operations. Because of the numerous risks and uncertainties associated with our commercialization efforts and future product development, we are unable to predict when we will become profitable, and we may never become profitable. Even if we do achieve profitability, we may not be able to sustain or increase our profitability.

If we require additional funds in the future, we may not be able to obtain such funds on acceptable terms, or at all. If we raise additional funds by issuing equity securities, our stockholders may experience dilution. Debt financing, if available, may involve covenants restricting our operations or our ability to incur additional debt. Any additional debt or equity financing that we raise may contain terms that are not favorable to us or our stockholders. If we do not have, or are not able to obtain, sufficient funds, we may have to delay development or commercialization of our products or license to third parties the rights to

Table of Contents

commercialize products or technologies that we would otherwise seek to commercialize. We also may have to reduce marketing, customer support, research and development, or other resources devoted to our products.

Impairment of our goodwill or other intangible assets could materially and adversely affect our business, operating results, and financial condition.

As of September 30, 2016, we had goodwill and intangible assets, net of amortization, of approximately $104.1 million and $82.6 million, respectively. These assets represent a significant portion of the assets recorded on our consolidated balance sheet and relate primarily to our acquisition of DVS in February 2014. In addition, if in the future we acquire additional businesses, technologies, or other intangible assets, a substantial portion of the value of such assets may be recorded as goodwill or intangible assets.

The carrying amounts of goodwill and intangible assets are affected whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. We review goodwill and indefinite lived intangible assets for impairment at least annually and more frequently under certain circumstances. Other intangible assets that are deemed to have finite useful lives will continue to be amortized over their useful lives but must be reviewed for impairment when events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable. Events or changes in circumstances that could affect the likelihood that we will be required to recognize an impairment charge include declines in our stock price or market capitalization, declines in our market share or revenues, an increase in our losses, rapid changes in technology, failure to achieve the benefits of capacity increases and utilization, significant litigation arising out of an acquisition, or other matters. In particular, these or other adverse events or changes in circumstances may affect the estimated undiscounted future operating cash flows expected to be derived from our goodwill and intangible assets. We have recently experienced substantial declines in our stock price, and continued weakness or further declines in our stock price increase the likelihood that we may be required to recognize impairment charges. Any impairment charges could have a material adverse effect on our operating results and net asset value in the quarter in which we recognize the impairment charge. We cannot provide assurances that we will not in the future be required to recognize impairment charges.

Our business operations are dependent upon our new senior management team and the ability of our other new employees to learn their new roles. If we are unable to recruit and retain key executives, scientists, and technical support personnel, we may be unable to achieve our goals.

Our performance is substantially dependent on the performance of our senior management, which has substantially changed over the last year, including, for example, the recent departures of our Chief Executive Officer, Gajus Worthington, and Executive Vice President, Research and Development and Marketing, Marc Unger. We have a new president and chief executive officer who started in August 2016, a new controller and principal accounting officer who started in May 2016, a new general counsel who started with us in June 2016, and other new members of our senior management team. As new employees gain experience in their roles, we could experience inefficiencies or a lack of business continuity due to loss of historical knowledge and a lack of familiarity of new employees with business processes, operating requirements, policies and procedures, and we may experience additional costs as new employees learn their roles and gain necessary experience. It is important to our success that these key employees quickly adapt to and excel in their new roles. If they are unable to do so, our business and financial results could be materially adversely affected. In addition, the loss of the services of any member of our senior management or our scientific or technical support staff might significantly delay or prevent the development of our products or achievement of other business objectives by diverting management’s attention to transition matters and identification of suitable replacements, if any, and could have a material adverse effect on our business. Our research and product development efforts could also be delayed or curtailed if we are unable to attract, train, and retain highly skilled employees, particularly, senior scientists and engineers. We do not maintain fixed term employment contracts or significant key man life insurance with any of our employees.

Additionally, to expand our research and product development efforts, we need key scientists skilled in areas such as molecular and cellular biology, assay development, and manufacturing. We also need highly trained technical support personnel with the necessary scientific background and ability to understand our systems at a technical level to effectively support potential new customers and the expanding needs of current customers. Competition for these people is intense. Because of the complex and technical nature of our systems and the dynamic market in which we compete, any failure to attract and retain a sufficient number of qualified employees could materially harm our ability to develop and commercialize our technology

We may encounter problems in our efforts to increase operational efficiencies.

Table of Contents

We continue to seek to identify ways to reduce our operating expenses, align our resources with our product strategy, and manage our cash flows. These initiatives may include decreasing or deferring capital expenditures and development activities, and optimizing our organization. Such measures may impair our ability to invest in developing, marketing, and selling new and existing products. We cannot assure you that these projects will result in the realization of the expected benefits that we anticipate in a timely manner or at all. We may encounter problems with these projects that will divert the attention of management and/or result in additional costs and unforeseen project delays. If we, or these projects do not achieve expected results, our business, financial position and operating results may be materially and adversely affected.

To use our products, our Biomark, EP1, and Helios/CyTOF 2 systems in particular, customers typically need to purchase specialized reagents. Any interruption in the availability of these reagents for use in our products could limit our ability to market our products.

Our products, our Biomark, EP1, and Helios/CyTOF 2 systems in particular, must be used in conjunction with one or more reagents designed to produce or facilitate the particular biological or chemical reaction desired by the user. Many of these reagents are highly specialized and available to the user only from a single supplier or a limited number of suppliers. Although we sell reagents for use with certain of our products, our customers may purchase these reagents directly from third-party suppliers, and we have no control over the supply of those materials. In addition, our products are designed to work with these reagents as they are currently formulated. We have no control over the formulation of reagents sold by third-party suppliers, and the performance of our products might be adversely affected if the formulation of these reagents is changed. If one or more of these reagents were to become unavailable or were reformulated, our ability to market and sell our products could be materially and adversely affected.

In addition, the use of a reagent for a particular process may be covered by one or more patents relating to the reagent itself, the use of the reagent for the particular process, the performance of that process, or the equipment required to perform the process. Typically, reagent suppliers, who are either the patent holders or their authorized licensees, sell the reagents along with a license or covenant not to sue with respect to such patents. The license accompanying the sale of a reagent often purports to restrict the purposes for which the reagent may be used. If a patent holder or authorized licensee were to assert against us or our customers that the license or covenant relating to a reagent precluded its use with our systems, our ability to sell and market our products could be materially and adversely affected. For example, our Biomark system involves real-time quantitative PCR, or qPCR. Leading suppliers of reagents for real-time qPCR reactions include Life Technologies Corporation (now part of Thermo Fisher Scientific) and Roche Diagnostics Corporation, who are our direct competitors, and their licensees. These real-time qPCR reagents are typically sold pursuant to limited licenses or covenants not to sue with respect to patents held by these companies. We do not have any contractual supply agreements for these real-time qPCR reagents, and we cannot assure you that these reagents will continue to be available to our customers for use with our systems, or that these patent holders will not seek to enforce their patents against us, our customers, or suppliers.

Being regulated as a medical device manufacturer by the U.S. Food and Drug Administration, or FDA, and foreign regulatory authorities, and seeking approval and/or clearance for our products, will take significant time and expense and may not result in FDA clearance or approval for the intended uses we believe are commercially attractive. If our products are successfully approved and/or cleared, we will be subject to ongoing and extensive regulatory requirements, which would increase our costs and divert resources away from other projects. If we fail to comply with these requirements, our business and financial condition could be adversely impacted.

Our products are currently labeled, promoted and sold to academic institutions, life sciences laboratories, and pharmaceutical, biotechnology, and Ag-Bio companies for research purposes only, or RUO, and are not designed for, or intended to be used for, diagnostic tests or as medical devices as currently marketed. Before we can begin to label

and market our products for use as, or in the performance of, clinical diagnostics in the United States, thereby subjecting them to FDA regulation as medical devices, we would be required to obtain premarket 510(k) clearance or premarket approval from the FDA, unless an exception applies.

We have announced our plan to register with the FDA as a medical device manufacturer and list some of our products with the FDA pursuant to an FDA Class I listing for general purpose laboratory equipment. We are currently assessing when to make an initial filing. While this regulatory classification is exempt from certain FDA requirements, such as the need to submit a premarket notification commonly known as a 510(k), and most of the requirements of the FDA's Quality System Regulations, or QSRs, we will be subject to ongoing FDA "general controls," which include compliance with FDA regulations for labeling,

Table of Contents

inspections by the FDA, complaint evaluation, corrections and removals reporting, promotional restrictions, reporting adverse events or malfunctions for our products, and general prohibitions against misbranding and adulteration.

In addition, we plan to submit 510(k) premarket notifications to the FDA to obtain FDA clearance of certain of our products on a selected basis. Although we plan to submit 510(k) applications for certain of our products, it is possible that the FDA will take the position that a more burdensome premarket application, such as a premarket approval application or a de novo application is required for some of our products. If such applications are required, greater time and investment would be required to obtain FDA approval. Even if the FDA agrees that a 510(k) is appropriate, FDA clearance can be expensive and time consuming. It generally takes a significant amount of time to prepare a 510(k), including conducting appropriate testing on our products, and several months to years for the FDA to review a submission. Notwithstanding the effort and expense, FDA clearance or approval may be denied for some or all of our products. Even if we were to obtain regulatory approval or clearance, it may not be for the uses we believe are important or commercially attractive.

If we receive regulatory clearance or approval for our products, we will be subject to ongoing FDA obligations and continued regulatory oversight and review, including the general controls listed above and the FDA's QSRs for our manufacturing operations. In addition, we may be required to obtain a new 510(k) clearance before we can introduce subsequent modifications or improvements to our products. We may also be subject to additional FDA post-marketing obligations, any or all of which would increase our costs and divert resources away from other projects. If we are not able to maintain regulatory compliance with applicable laws, we may be prohibited from marketing our products for use as, or in the performance of, clinical diagnostics and/or may be subject to enforcement actions, including warning letters and adverse publicity, fines, injunctions, and civil penalties; recall or seizure of products; operating restrictions; and criminal prosecution.

We intend to seek similar regulatory clearance or approval for our products in countries outside of the United States. Sales of our products outside the United States will be subject to foreign regulatory requirements, which vary greatly from country to country. As a result, the time required to obtain clearances or approvals outside the United States may differ from that required to obtain FDA clearance or approval and we may not be able to obtain foreign regulatory approvals on a timely basis or at all. Clearance or approval by the FDA does not ensure approval by regulatory authorities in other countries, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other countries or by the FDA. In Europe, we will need to comply with the Medical Device Directive 93/42 EEC, which is required to market medical devices in the European Union. We received certification under ISO 13485:2003, which includes requirements for the implementation of a quality management system for the design and manufacturing of medical devices and is the European Quality Standard applicable to medical device manufacturers, and under ISO 9001:2008, which specifies requirements for a quality management system to demonstrate the ability to consistently provide products that meet customer and applicable statutory and regulatory requirements. Compliance with these certification standards could take significant time and expense and may increase our costs or divert resources away from other projects. In addition, the FDA regulates exports of medical devices. Failure to comply with these regulatory requirements or obtain and maintain required approvals, clearances and certifications could impair our ability to commercialize our products for diagnostic use outside of the United States.

Table of Contents

Our products could become subject to regulation as medical devices by the FDA or other regulatory agencies before we have obtained regulatory clearance or approval to market our products for diagnostic purposes, which would adversely impact our ability to market and sell our products and harm our business.

As products that are currently labeled, promoted and intended for RUO, our products are not currently subject to regulation as medical devices by the FDA or comparable agencies of other countries. However, the FDA or comparable agencies of other countries could disagree with our conclusion that our products are currently intended for research use only or deem our current marketing and promotional efforts as being inconsistent with research use only products. For example, our customers may independently elect to use our research use only labeled products in their own laboratory developed tests, or LDTs, for clinical diagnostic use. The FDA has historically exercised enforcement discretion in not enforcing the medical device regulations against laboratories offering LDTs. However, on October 3, 2014, the FDA issued two draft guidance documents that set forth the FDA's proposed risk-based framework for regulating LDTs, which are designed, manufactured, and used within a single laboratory. The draft guidance documents provide the anticipated details through which the FDA would propose to establish an LDT oversight framework, including premarket review for higher-risk LDTs, such as those that have the same intended use as FDA-approved or cleared companion diagnostics currently on the market. The FDA held a public workshop and accepted comments on the two draft guidance documents and is currently assessing next steps for implementing the framework for regulating LDTs. At the same time, various legislative proposals have been floated that would take differing approaches to the regulation of LDTs. It is also possible that companies or associations will attempt to bring litigation against the FDA arguing that the FDA lacks legal authority over LDTs. We cannot predict how these various efforts will be resolved, how FDA will regulate LDTs in the future, or how that regulatory system will impact our business.

Additionally, on November 25, 2013, the FDA issued Final Guidance "Distribution of In Vitro Diagnostic Products Labeled for Research Use Only." The guidance emphasizes that the FDA will review the totality of the circumstances when it comes to evaluating whether equipment and testing components are properly labeled as RUO. The final guidance states that merely including a labeling statement that the product is for research purposes only will not necessarily render the device exempt from the FDA's clearance, approval, and other regulatory requirements if the circumstances surrounding the distribution of the product indicate that the manufacturer knows its product is, or intends for its product to be, used for clinical diagnostic purposes. These circumstances may include written or verbal marketing claims or links to articles regarding a product's performance in clinical applications and a manufacturer's provision of technical support for clinical applications.

If the FDA modifies its approach to our products labeled and intended for RUO, or otherwise determines our products or related applications should be subject to additional regulation as in vitro diagnostic devices based upon customers' use of our products for clinical diagnostic or therapeutic purposes, before we have obtained regulatory clearance or approval to market our products for diagnostic purposes, our ability to market and sell our products could be impeded and our business, prospects, results of operations and financial condition may be adversely affected. In addition, if the FDA determines that our products labeled for RUO were intended, based on a review of the totality of circumstances, for use in clinical investigation or diagnosis, those products could be considered misbranded or adulterated under the Federal Food, Drug, and Cosmetic Act and subject to recall and/or other enforcement action.

Compliance or the failure to comply with current and future regulations affecting our products and business operations worldwide, such as environmental regulations enacted in the European Union, could cause us significant expense and adversely impact our business.

We are subject to many federal, state, local, and foreign regulations relating to various aspects of our business operations. Governmental entities at all levels are continuously enacting new regulations, and it is difficult to identify all applicable regulations and anticipate how such regulations will be implemented and enforced. We continue to

evaluate the necessary steps for compliance with applicable regulations. To comply with applicable regulations, we have and will continue to incur significant expense and allocate valuable internal resources to manage compliance-related issues. In addition, such regulations could restrict our ability to expand or equip our facilities, or could require us to acquire costly equipment or to incur other significant expenses to comply with the regulations. For example, the Restriction on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Directive, or RoHS, and the Waste Electrical and Electronic Equipment Directive, or WEEE, enacted in the European Union, regulate the use of certain hazardous substances in, and require the collection, reuse, and recycling of waste from, products we manufacture. Certain of our products sold in these countries are subject to WEEE requirements may become subject to RoHS. These and similar regulations that have been or are in the process of being enacted in other countries may require us to redesign our products, use different types of materials in certain components, or source alternative components to

Table of Contents

ensure compliance with applicable standards, and may reduce the availability of parts and components used in our products by negatively impacting our suppliers' ability to source parts and components in a timely and cost-effective manner.

Any such redesigns, required use of alternative materials, or limited availability of parts and components used in our products may detrimentally impact the performance of our products, add greater testing lead times for product introductions, reduce our product margins, or limit the markets for our products, and if we fail to comply with any present and future regulations, we could be subject to future fines, penalties, and restrictions, such as the suspension of manufacturing of our products or a prohibition on the sale of products we manufacture. Any of the foregoing could adversely affect our business, financial condition, or results of operations.

If we fail to maintain effective internal control over financial reporting in the future, the accuracy and timing of our financial reporting may be impaired, which could adversely affect our business and our stock price.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we must perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. Our testing may reveal deficiencies in our internal control over financial reporting that are deemed to be material weaknesses.

Our compliance with Section 404 requires that we incur substantial accounting expense and expend significant management time on compliance-related issues. We currently do not have an internal audit group, and we continue to evaluate our need for additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. Moreover, if we do not comply with the requirements of Section 404, or if we or our independent registered public accounting firm identify deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, the market price of our stock could decline and we could be subject to sanctions or investigations by the NASDAQ Global Select Market, or NASDAQ, the SEC or other regulatory authorities, which would require additional financial and management resources.

Our future capital needs are uncertain and we may need to raise additional funds in the future, which may cause dilution to stockholders or may be upon terms that are not favorable to us.

We believe that our existing cash and cash equivalents will be sufficient to meet our anticipated cash requirements for at least the next 18 months. We have continued to experience losses and, if that trend continues, we may need to seek additional sources of financing. In addition, we may need to raise substantial additional capital for various purposes, including:

- expanding the commercialization of our products;
- funding our operations;
- furthering our research and development; and
- acquiring other businesses or assets and licensing technologies.

Our future funding requirements will depend on many factors, including:

- market acceptance of our products;

- the cost of our research and development activities;
- the cost of filing and prosecuting patent applications;
- the cost of defending any litigation including intellectual property, employment, contractual or other litigation;
- the cost and timing of regulatory clearances or approvals, if any;
- the cost and timing of establishing additional sales, marketing, and distribution capabilities;

Table of Contents

- the cost and timing of establishing additional technical support capabilities;
- the effect of competing technological and market developments; and
- the extent to which we acquire or invest in businesses, products, and technologies, although we currently have no commitments or agreements relating to any of these types of transactions.

We cannot assure you that we will be able to obtain additional funds on acceptable terms, or at all. If we raise additional funds by issuing equity securities, our stockholders may experience dilution. Debt financing, if available, may involve covenants restricting our operations or our ability to incur additional debt. Any debt or additional equity financing that we raise may contain terms that are not favorable to us or our stockholders. If we raise additional funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish some rights to our technologies or our products, or grant licenses on terms that are not favorable to us. If we are unable to raise adequate funds, we may have to liquidate some or all of our assets, delay development or commercialization of our products, or license to third parties the rights to commercialize products or technologies that we would otherwise seek to commercialize. We also may have to reduce marketing, customer support, or other resources devoted to our products, or cease operations. Any of these factors could harm our operating results.

We are subject to risks related to taxation in multiple jurisdictions and if taxing authorities disagree with our interpretations of existing tax laws or regulations, our effective income tax rate could be adversely affected and we could have additional tax liability.

We are subject to income taxes in both the United States and certain foreign jurisdictions. Significant judgments based on interpretations of existing tax laws or regulations are required in determining the provision for income taxes. For example, we have made certain interpretations of existing tax laws or regulations based upon the operations of our business internationally and we have implemented intercompany agreements based upon these interpretations and related transfer pricing analyses. If the U.S. Internal Revenue Service or other taxing authorities disagree with the positions, our effective income tax rate could be adversely affected and we could have additional tax liability, including interest and penalties. We recently completed a review of our European corporate structure and tax positions and, based upon our existing business operations, we plan to restructure our European intercompany transactions, which is likely to increase our income tax liability. From time to time, we may review our corporate structure and tax positions in other international jurisdictions and such review may result in additional changes to how we structure our international business operations, which may adversely impact our effective income tax rate. Our effective income tax rate could also be adversely affected by changes in the mix of earnings in tax jurisdictions with different statutory tax rates, changes in the valuation of deferred tax assets and liabilities, changes in existing tax laws or tax rates, changes in the level of non-deductible expenses (including share-based compensation), changes in our future levels of research and development spending, mergers and acquisitions, or the result of examinations by various tax authorities. Payment of additional amounts upon final adjudication of any disputes could have a material impact on our results of operations and financial position.

Adverse conditions in the global economy and disruption of financial markets may significantly harm our revenue, profitability, and results of operations.

The global credit and financial markets have in recent years experienced volatility and disruptions, including diminished liquidity and credit availability, increased concerns about inflation and deflation, and the downgrade of U.S. debt and exposure risks on other sovereign debts, decreased consumer confidence, lower economic growth, volatile energy costs, increased unemployment rates, and uncertainty about economic stability. Volatility and disruption of financial markets could limit our customers' ability to obtain adequate financing or credit to purchase and pay for our products in a timely manner or to maintain operations, which could result in a decrease in sales volume

that could harm our results of operations. Political uncertainty and general concerns about the fundamental soundness of domestic and international economies may also cause our customers to reduce their purchases. Changes in governmental banking, monetary, and fiscal policies to address liquidity and increase credit availability may not be effective. Significant government investment and allocation of resources to assist the economic recovery of sectors which do not include our customers may reduce the resources available for government grants and related funding for life science, Ag-Bio, and clinical research and development. Continuation or further deterioration of these financial and macroeconomic conditions could significantly harm our sales, profitability, and results of operations.

If we are unable to integrate future acquisitions successfully, our operating results and prospects could be harmed.

Table of Contents

In addition to our acquisition of DVS, we may make additional acquisitions to improve our product offerings or expand into new markets. Our future acquisition strategy will depend on our ability to identify, negotiate, complete, and integrate acquisitions and, if necessary, to obtain satisfactory debt or equity financing to fund those acquisitions. Mergers and acquisitions are inherently risky, and any transaction we complete may not be successful. Our acquisition of DVS was our first acquisition of another company. Any merger or acquisition we may pursue would involve numerous risks, including but not limited to the following:

- difficulties in integrating and managing the operations, technologies, and products of the companies we acquire;
- diversion of our management's attention from normal daily operation of our business;
- our inability to maintain the key business relationships and the reputations of the businesses we acquire;
- our inability to retain key personnel of the acquired company;
- uncertainty of entry into markets in which we have limited or no prior experience and in which competitors have stronger market positions;
- our dependence on unfamiliar affiliates and customers of the companies we acquire;
- insufficient revenue to offset our increased expenses associated with acquisitions;
- our responsibility for the liabilities of the businesses we acquire, including those which we may not anticipate; and
- our inability to maintain internal standards, controls, procedures, and policies.

We may be unable to secure the equity or debt funding necessary to finance future acquisitions on terms that are acceptable to us. If we finance acquisitions by issuing equity or convertible debt securities, our existing stockholders will likely experience dilution, and if we finance future acquisitions with debt funding, we will incur interest expense and may have to comply with financial covenants and secure that debt obligation with our assets.

If we are unable to manage our anticipated growth effectively, our business could be harmed.

The rapid growth of our business has placed a significant strain on our managerial, operational, and financial resources and systems. To execute our anticipated growth successfully, we must continue to attract and retain qualified personnel and manage and train them effectively. We must also upgrade our internal business processes and capabilities to create the scalability that a growing business demands.

We believe our facilities located in Singapore, Canada, and California, are sufficient to meet our short-term manufacturing needs. The current lease for our manufacturing facility in Singapore expires in June 2022. In the event that we need to add to our existing manufacturing space in Singapore or move our manufacturing facility to a new location in Singapore, such a move will involve significant expense and efforts in connection with the establishment of new clean rooms and the recommissioning of key manufacturing equipment. A move of any of our manufacturing facilities may delay or otherwise adversely affect our manufacturing activities and business.

Further, our anticipated growth will place additional strain on our suppliers and manufacturing facilities, resulting in an increased need for us to carefully monitor quality assurance. Any failure by us to manage our growth effectively could have an adverse effect on our ability to achieve our development and commercialization goals.

If we are unable to expand our direct sales and marketing force or distribution capabilities to adequately address our customers' needs, our business may be adversely affected.

We may not be able to market, sell, and distribute our products effectively enough to support our planned growth. We sell our products primarily through our own sales force and through distributors in certain territories. Our future sales will depend in large part on our ability to develop and substantially expand our direct sales force and to increase the scope of our marketing efforts. Our products are technically complex and used for highly specialized applications. As a result, we believe it is necessary to develop a direct sales force that includes people with specific scientific backgrounds and expertise, and a marketing group with

Table of Contents

technical sophistication. Competition for such employees is intense. We may not be able to attract and retain personnel or be able to build an efficient and effective sales and marketing force, which could negatively impact sales of our products and reduce our revenue and profitability.

In addition, we may continue to enlist one or more sales representatives and distributors to assist with sales, distribution, and customer support globally or in certain regions of the world. If we do seek to enter into such arrangements, we may not be successful in attracting desirable sales representatives and distributors, or we may not be able to enter into such arrangements on favorable terms. If our sales and marketing efforts, or those of any third-party sales representatives and distributors, are not successful, our technologies and products may not gain market acceptance, which would materially and adversely impact our business operations.

Risks associated with a company-wide implementation of an enterprise resource planning, or ERP, system may adversely affect our business and results of operations or the effectiveness of internal control over financial reporting.

We have been implementing a company-wide ERP system to handle the business and financial processes within our operations and corporate functions. ERP implementations are complex and time-consuming projects that involve substantial expenditures on system software and implementation activities that can continue for several years. ERP implementations also require transformation of business and financial processes in order to reap the benefits of the ERP system. Our business and results of operations may be adversely affected if we experience operating problems and/or cost overruns during the ERP implementation process, or if the ERP system and the associated process changes do not give rise to the benefits that we expect. If we do not effectively implement the ERP system as planned or if the system does not operate as intended, our business, results of operations, and internal controls over financial reporting may be adversely affected.

Changes in accounting principles, or interpretations thereof, could have a significant impact on our financial position and results of operations.

We prepare our consolidated financial statements in accordance with accounting principles generally accepted in the United States of America, referred to as GAAP. These principles are subject to interpretation by the SEC and various bodies formed to interpret and create appropriate accounting principles. A change in these principles can have a significant effect on our reported results and may even retroactively affect previously reported transactions. Additionally, the adoption of new or revised accounting principles may require that we make significant changes to our systems, processes and controls.

For example, the U.S.-based Financial Accounting Standards Board, referred to as FASB, is currently working together with the International Accounting Standards Board, referred to IASB, on several projects to further align accounting principles and facilitate more comparable financial reporting between companies who are required to follow GAAP under SEC regulations and those who are required to follow International Financial Reporting Standards outside of the United States. These efforts by the FASB and IASB may result in different accounting principles under GAAP that may result in materially different financial results for us in areas including, but not limited to, principles for recognizing revenue and lease accounting. Additionally, significant changes to GAAP resulting from the FASB’s and IASB’s efforts may require that we change how we process, analyze and report financial information and that we change financial reporting controls.

It is not clear if or when these potential changes in accounting principles may become effective, whether we have the proper systems and controls in place to accommodate such changes and the impact that any such changes may have on our financial position and results of operations.

Our ability to use net operating losses to offset future taxable income may be subject to certain limitations.

In general, 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, or NOLs, to offset future taxable income. If we undergo one or more ownership changes, our ability to utilize NOLs could be limited by Section 382 of the Internal Revenue Code. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Internal Revenue Code.

Table of Contents

Risks Related to Intellectual Property

Our ability to protect our intellectual property and proprietary technology through patents and other means is uncertain.

Our commercial success depends in part on our ability to protect our intellectual property and proprietary technologies. We rely on patent protection, where appropriate and available, as well as a combination of copyright, trade secret, and trademark laws, and nondisclosure, confidentiality, and other contractual restrictions to protect our proprietary technology. However, these legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. We apply for patents covering our products and technologies and uses thereof, as we deem appropriate. However, we may fail to apply for patents on important products and technologies in a timely fashion or at all. Our pending U.S. and foreign patent applications may not issue as patents or may not issue in a form that will be sufficient to protect our proprietary technology and gain or keep our competitive advantage. Any patents we have obtained or do obtain may be subject to re-examination, reissue, opposition, or other administrative proceeding, or may be challenged in litigation, and such challenges could result in a determination that the patent is invalid or unenforceable. In addition, competitors may be able to design alternative methods or devices that avoid infringement of our patents. Both the patent application process and the process of managing patent disputes can be time consuming and expensive.

Furthermore, the laws of some foreign countries may not protect our intellectual property rights to the same extent as do the laws of the United States, and many companies have encountered significant problems in protecting and defending such rights in foreign jurisdictions. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business. Changes in either the patent laws or in interpretations of patent laws in the United States or other countries may diminish the value of our intellectual property. We cannot predict the breadth of claims that may be allowed or enforced in our patents or in third-party patents. For example:

- We might not have been the first to make the inventions covered by each of our pending patent applications;
- We might not have been the first to file patent applications for these inventions;
- The patents of others may have an adverse effect on our business; and
- Others may independently develop similar or alternative products and technologies or duplicate any of our products and technologies.

To the extent our intellectual property, including licensed intellectual property, offers inadequate protection, or is found to be invalid or unenforceable, our competitive position and our business could be adversely affected.

We may be involved in lawsuits to protect or enforce our patents and proprietary rights, to determine the scope, coverage and validity of others' proprietary rights, or to defend against third party claims of intellectual property infringement, any of which could be time-intensive and costly and may adversely impact our business or stock price.

Litigation may be necessary for us to enforce our patent and proprietary rights, determine the scope, coverage, and validity of others' proprietary rights, and/or defend against third party claims of intellectual property infringement against us as well as against our suppliers, distributors, customers, and other entities with whom we do business. Litigation could result in substantial legal fees and could adversely affect the scope of our patent protection. The outcome of any litigation or other proceeding is inherently uncertain and might not be favorable to us, and we might not be able to obtain licenses to technology that we require. Even if such licenses are obtainable, they may not be

available at a reasonable cost. We could therefore incur substantial costs related to royalty payments for licenses obtained from third parties, which could negatively affect our product margins or financial position. Further, we could encounter delays in product introductions, or interruptions in product sales, as we develop alternative methods or products.

As we move into new markets and applications for our products, incumbent participants in such markets may assert their patents and other proprietary rights against us as a means of impeding our entry into such markets or as a means to extract substantial license and royalty payments from us. Our commercial success may depend in part on our non-infringement of the patents or proprietary rights of third parties. Numerous significant intellectual property issues have been litigated, and will likely continue to be litigated, between existing and new participants in our existing and targeted markets. For example, some of our products provide for the testing and analysis of genetic material, and patent rights relating to genetic materials remain a

Table of Contents

developing area of patent law. A recent U.S. Supreme Court decision held, among other things, that claims to isolated genomic DNA occurring in nature are not patent eligible, while claims relating to synthetic DNA may be patent eligible. We expect the ruling will result in additional litigation in our industry. In addition, third parties may assert that we are employing their proprietary technology without authorization. For example, on June 4, 2008 we received a letter from Applied Biosystems, Inc., a wholly-owned subsidiary of Life Technologies Corporation (now part of Thermo Fisher Scientific Inc. and collectively referred to as Life), asserting that our Biomark system for gene expression analysis infringes upon U.S. Patent No. 6,814,934, or the ‘934 patent, and its foreign counterparts in Europe and Canada. In June 2011, we resolved this dispute by entering into license agreements with Life which, among other matters, granted us a non-exclusive license to the ‘934 patent and its foreign counterparts.

From time to time, we engage in discussions regarding possible commercial, licensing and cross-licensing agreements with third parties. There can be no assurance that these discussions will lead to the execution of commercial license or cross-license agreements or that such agreements will be on terms that are favorable to us. If these discussions are successful, we could be obligated to pay license fees and royalties. If these discussions do not lead to the execution of mutually acceptable agreements, one or more of the parties involved in such discussions could resort to litigation to protect or enforce its patents and proprietary rights or determine the scope, coverage and validity of the proprietary rights of others. In addition, if we enter into cross-licensing agreements, there is no assurance that we will be able to effectively compete against others who are licensed under our patents.

Our customers have also been sued for various claims of intellectual property infringement in the past, and we expect that our customers will be involved in additional litigation in the future. In particular, our customers may become subject to lawsuits claiming that their use of our products infringes third-party patent rights, and we could become subject to claims that we contributed to or induced our customer’s infringement. In addition, our agreements with some of our suppliers, distributors, customers, and other entities with whom we do business may require us to defend or indemnify these parties to the extent they become involved in infringement claims against us, including the claims described above. We could also voluntarily agree to defend or indemnify third parties in instances where we are not obligated to do so if we determine it would be important to our business relationships. If we are required or agree to defend or indemnify any of these third parties in connection with any infringement claims, we could incur significant costs and expenses that could adversely affect our business, operating results, or financial condition.

Table of Contents

We may be subject to damages resulting from claims that we or our employees have wrongfully used or disclosed alleged trade secrets of our employees' former employers or other institutions or third parties with whom such employees may have been previously affiliated.

Many of our employees were previously employed at universities or other life science or Ag-Bio companies, including our competitors or potential competitors. We have in the past received notices from third parties alleging potential disclosures of confidential information. We may become subject to claims that our employees or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers or other third parties or institutions with whom our employees may have been previously affiliated. Litigation may be necessary to defend against these claims. For example, a third party competitor initiated litigation against a newly hired Fluidigm employee alleging, among other claims, misappropriation of proprietary information and breach of contractual and fiduciary obligations to the third party. Although we are not currently a party to this litigation, the plaintiff filed a motion for leave to amend the complaint to add us as a defendant, and a hearing on such motion is schedule to occur in November 2016. The case is in its early stages, and we are unable to determine whether the competitor will be permitted to amend its complaint to name us, and, if the complaint is amended, the ultimate outcome or estimate of the range of potential losses. If the matter is not resolved prior to any amendment of the complaint to name us, we intend to defend the case vigorously. If we fail in defending such claims, in addition to paying monetary damages we may be subject to injunctive relief against us. A loss of key research personnel work product could hamper or prevent our ability to commercialize certain potential products or a loss or inability to hire key marketing, sales or research and development personnel could adversely affect our future product development, sales and revenues, any of which could severely harm our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

We depend on certain technologies that are licensed to us. We do not control these technologies and any loss of our rights to them could prevent us from selling our products, which would have an adverse effect on our business.

We rely on licenses in order to be able to use various proprietary technologies that are material to our business, including our core IFC, multi-layer soft lithography, and mass cytometry technologies. In some cases, we do not control the prosecution, maintenance, or filing of the patents to which we hold licenses, or the enforcement of these patents against third parties. Additionally, our business and product development plans anticipate and may substantially depend on future in-license agreements with additional third parties, some of which are currently in the early discussion phase. For example, Fluidigm Canada Inc., or Fluidigm Canada, an Ontario corporation and wholly-owned subsidiary of Fluidigm Sciences, was party to an interim license agreement, now expired, with Nodality, Inc., or Nodality, under which Nodality granted Fluidigm Canada a worldwide, non-exclusive, research use only, royalty bearing license to certain cytometric reagents, instruments, and other products. We have had prior discussions with Nodality to reinstate the license agreement. We cannot provide assurances that we will be able to reinstate the license agreement with Nodality or secure a new license agreement with Nodality or other third parties on acceptable terms, if at all.

In-licensed intellectual property rights that are fundamental to the business being operated present numerous risks and limitations. For example, all or a portion of the license rights granted may be limited for research use only, and in the event we attempt to expand into diagnostic applications, we would be required to negotiate additional rights, which may not be available to us on commercially reasonable terms, if at all.

Our rights to use the technology we license are also subject to the negotiation and continuation of those licenses. Certain of our licenses contain provisions that allow the licensor to terminate the license upon specific conditions. Our rights under the licenses are subject to our continued compliance with the terms of the license, including the payment of royalties due under the license. Because of the complexity of our products and the patents we have licensed, determining the scope of the license and related royalty obligation can be difficult and can lead to disputes between us

and the licensor. An unfavorable resolution of such a dispute could lead to an increase in the royalties payable pursuant to the license. If a licensor believed we were not paying the royalties due under the license or were otherwise not in compliance with the terms of the license, the licensor might attempt to revoke the license. If such an attempt were successful and the license is terminated, we might be barred from marketing, producing, and selling some or all of our products, which would have an adverse effect on our business. Potential disputes between us and one of our existing licensors concerning the terms or conditions of the applicable license agreement could result, among other risks, in substantial management distraction; increased expenses associated with litigation or efforts to resolve disputes; substantial customer uncertainty concerning the direction of our product lines; potential infringement claims against us and/or our customers, which could include efforts by a licensor to enjoin sales of our products; customer requests for indemnification by us; and, in the event of an adverse determination, our inability to operate our business as currently operated.

Table of Contents

Termination of material license agreements could prevent us from manufacturing and selling our products unless we can negotiate new license terms or develop or acquire alternative intellectual property rights that cover or enable similar functionality. Any of these factors would be expected to have a material adverse effect on our business, operating results, and financial condition and could result in a substantial decline in our stock price.

We are subject to certain manufacturing restrictions related to licensed technologies that were developed with the financial assistance of U.S. governmental grants.

We are subject to certain U.S. government regulations because we have licensed technologies that were developed with U.S. government grants. In accordance with these regulations, these licenses provide that products embodying the technologies are subject to domestic manufacturing requirements. If this domestic manufacturing requirement is not met, the government agency that funded the relevant grant is entitled to exercise specified rights, referred to as "march-in rights," which if exercised would allow the government agency to require the licensors or us to grant a non-exclusive, partially exclusive, or exclusive license in any field of use to a third party designated by such agency. All of our microfluidic systems revenue is dependent upon the availability of our IFCs, which incorporate technology developed with U.S. government grants. All of our instruments, including microfluidic systems, and IFCs for commercial sale are manufactured at our facility in Singapore. The federal regulations allow the funding government agency to grant, at the request of the licensors of such technology, a waiver of the domestic manufacturing requirement. Waivers may be requested prior to any government notification. We have assisted the licensors of these technologies with the analysis of the domestic manufacturing requirement, and, in December 2008, the sole licensor subject to the requirement applied for a waiver of the domestic manufacturing requirement with respect to the relevant patents licensed to us by this licensor. In July 2009, the funding government agency granted the requested waiver of the domestic manufacturing requirement for a three-year period commencing in July 2009. In June 2012, the licensor requested a continued waiver of the domestic manufacturing requirement with respect to the relevant patents, but the government agency has not yet taken any action in response to this request. If the government agency does not grant the requested waiver or the government fails to grant additional waivers of such requirement that may be sought in the future, then the U.S. government could exercise its march-in rights with respect to the relevant patents licensed to us. In addition, the license agreement under which the relevant patents are licensed to us contains provisions that obligate us to comply with this domestic manufacturing requirement. We are not currently manufacturing instruments and IFCs in the United States that incorporate the relevant licensed technology. If our lack of compliance with this provision constituted a material breach of the license agreement, the license of the relevant patents could be terminated or we could be compelled to relocate our manufacturing of microfluidic systems and IFCs to the United States to avoid or cure a material breach of the license agreement. Any of the exercise of march-in rights, the termination of our license of the relevant patents or the relocation of our manufacturing of microfluidic systems and IFCs to the United States could materially adversely affect our business, operations and financial condition.

We are subject to certain obligations and restrictions relating to technologies developed in cooperation with Canadian government agencies.

Some of our Canadian research and development is funded in part through government grants and by government agencies. The intellectual property developed through these projects is subject to rights and restrictions in favor of government agencies and Canadians generally. In most cases the government agency retains the right to use intellectual property developed through the project for non-commercial purposes and to publish the results of research conducted in connection with the project. This may increase the risk of public disclosure of information relating to our intellectual property, including confidential information, and may reduce its competitive advantage in commercializing intellectual property developed through these projects. In certain projects, we have also agreed to use commercially reasonable efforts to commercialize intellectual property in Canada, or more specifically in the province of Ontario, for the economic benefit of Canada and the province of Ontario. These restrictions will limit our choice of business and manufacturing locations, business partners and corporate structure and may, in certain circumstances,

restrict our ability to achieve maximum profitability and cost efficiency from the intellectual property generated by these projects. In one instance, a dispute with the applicable government funded entity may require mediation, which could lead to unanticipated delays in our commercialization efforts to that project. One of our Canadian government funded projects is also subject to certain limited "march-in" rights in favor of the government of the Province of Ontario, under which we may be required to grant a license to our intellectual property, including background intellectual property developed outside the scope of the project, to a responsible applicant on reasonable terms in circumstances where the government determines that such a license is necessary in order to alleviate emergency or extraordinary health or safety needs or for public use. In addition, we must provide reasonable assistance to the government in obtaining similar licenses from third parties required in connection with the use of its intellectual property. Instances in which the government of the Province of Ontario has exercised similar "march-in" rights are rare; however, the exercise of such rights could materially adversely affect our business, operations and financial condition.

Table of Contents

Risks Related to Our Common Stock

Our stock price may fluctuate significantly, particularly if holders of substantial amounts of our stock attempt to sell, and holders may have difficulty selling their shares based on current trading volumes of our stock. In addition, numerous other factors could result in substantial volatility in the trading price of our stock.

Our stock is currently traded on NASDAQ, but we can provide no assurance that we will be able to maintain an active trading market on NASDAQ or any other exchange in the future. The trading volume of our stock tends to be low relative to our total outstanding shares, and we have several stockholders who hold substantial blocks of our stock. As of September 30, 2016, we had 29,118,140 shares of common stock outstanding, and stockholders holding at least 5% of our stock, individually or with affiliated persons or entities, collectively beneficially owned or controlled approximately 78.7% of such shares. Sales of large numbers of shares by any of our large stockholders could adversely affect our trading price, particularly given our relatively small historic trading volumes. If stockholders holding shares of our common stock sell, indicate an intention to sell, or if it is perceived that they will sell, substantial amounts of their common stock in the public market, the trading price of our common stock could decline. Moreover, if there is no active trading market or if the volume of trading is limited, holders of our common stock may have difficulty selling their shares.

In addition, the trading price of our common stock may be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control. These factors include:

- actual or anticipated quarterly variation in our results of operations or the results of our competitors;
- announcements or communications by us or our competitors relating to, among other things, new commercial products, technological advances, significant contracts, commercial relationships, capital commitments, acquisitions or sales of businesses, and/or misperceptions in or speculation by the market regarding such announcements or communications;
- issuance of new or changed securities analysts' reports or recommendations for our stock;
- developments or disputes concerning our intellectual property or other proprietary rights;
- commencement of, or our involvement in, litigation;
- market conditions in the life science, Ag-Bio, and clinical research sectors;
- failure to complete significant sales;
- manufacturing disruptions that could occur if we were unable to successfully expand our production in our current or an alternative facility;
- any future sales of our common stock or other securities in connection with raising additional capital or otherwise;
- any major change to the composition of our board of directors or management; and
- general economic conditions and slow or negative growth of our markets.

The stock market in general, and market prices for the securities of technology-based companies like ours in particular, have from time to time experienced volatility that often has been unrelated to the operating performance of the underlying companies. These broad market and industry fluctuations may adversely affect the market price of our common stock regardless of our operating performance. In several recent situations where the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our stockholders were to bring a lawsuit against us, the defense and disposition of the lawsuit could be costly and divert the time and attention of our management and harm our operating results.

Table of Contents

If securities or industry analysts publish unfavorable research about our business or cease to cover our business, our stock price and/or trading volume could decline.

The trading market for our common stock may rely, in part, on the research and reports that equity research analysts publish about us and our business. We do not have any control of the analysts or the content and opinions included in their reports. The price of our stock could decline if one or more equity research analysts downgrade our stock or issue other unfavorable commentary or research. If one or more equity research analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our stock could decrease, which in turn could cause our stock price or trading volume to decline.

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 may have the effect of delaying or preventing a change of control or changes in our management, including provisions that:

- authorize our board of directors to issue, without further action by the stockholders, up to 10,000,000 shares of undesignated preferred 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 three year terms;
- provide that our directors may be removed only for cause;
- 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;
- specify that no stockholder is permitted to cumulate votes at any election of directors; and
- require a super-majority of votes to amend certain of the above-mentioned provisions.

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.

We have never paid dividends on our capital stock, and we do not anticipate paying any cash dividends in the foreseeable future.

We have paid no cash dividends on any of our classes of capital stock to date, have contractual restrictions against paying cash dividends, and currently intend to retain our future earnings to fund the development and growth of our business. As a result, capital appreciation, if any, of our common stock will be stockholders' sole source of gain for the foreseeable future.

Table of Contents

Risks Related to Our Outstanding 2.75% Senior Convertible Notes due 2034

Our outstanding 2.75% senior convertible notes due 2034 are effectively subordinated to our secured debt and any liabilities of our subsidiaries.

Our outstanding 2.75% senior convertible notes due 2034, which we refer to as our “notes”, rank:

- senior in right of payment to any of our indebtedness that is expressly subordinated in right of payment to the notes;
- equal in right of payment to all of our liabilities that are not so subordinated;
- effectively junior in right of payment to any of our secured indebtedness to the extent of the value of the assets securing such indebtedness; and
- structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries.

In February 2014, we completed our offering of notes with an aggregate outstanding principal amount of $201.3 million. In the event of our bankruptcy, liquidation, reorganization, or other winding up, our assets that secure debt ranking senior in right of payment to the notes will be available to pay obligations on the notes only after the secured debt has been repaid in full from these assets, and the assets of our subsidiaries will be available to pay obligations on the notes only after all claims senior to the notes have been repaid in full. There may not be sufficient assets remaining to pay amounts due on any or all of the notes then outstanding. The indenture governing the notes does not prohibit us from incurring additional senior debt or secured debt, nor does it prohibit our subsidiaries from incurring additional liabilities.

The notes are our obligations only and some of our operations are conducted through, and a portion of our consolidated assets are held by, our subsidiaries.

The notes are our obligations exclusively and are not guaranteed by any of our operating subsidiaries. A portion of our consolidated assets is held by our subsidiaries. Accordingly, our ability to service our debt, including the notes, depends in part on the results of operations of our subsidiaries and upon the ability of such subsidiaries to provide us with cash, whether in the form of dividends, loans, or otherwise, to pay amounts due on our obligations, including the notes. Our subsidiaries are separate and distinct legal entities and have no obligation, contingent or otherwise, to make payments on the notes or to make any funds available for that purpose. In addition, dividends, loans, or other distributions to us from such subsidiaries may be subject to contractual and other restrictions and are subject to other business and tax considerations.

Recent and future regulatory actions and other events may adversely affect the trading price and liquidity of the notes.

We expect that many investors in, and potential purchasers of, the notes will employ, or seek to employ, a convertible arbitrage strategy with respect to the notes. Investors would typically implement such a strategy by selling short the common stock underlying the notes and dynamically adjusting their short position while continuing to hold the notes. Investors may also implement this type of strategy by entering into swaps on our common stock in lieu of or in addition to short selling the common stock. As a result, any specific rules regulating equity swaps or short selling of securities or other governmental action that interferes with the ability of market participants to effect short sales or equity swaps with respect to our common stock could adversely affect the ability of investors in, or potential purchasers of, the notes to conduct the convertible arbitrage strategy that we believe they will employ, or seek to employ, with respect to the notes. This could, in turn, adversely affect the trading price and liquidity of the notes.

The SEC and other regulatory and self-regulatory authorities have implemented various rules and taken certain actions, and may in the future adopt additional rules and take other actions, that may impact those engaging in short selling activity involving equity securities (including our common stock). Such rules and actions include Rule 201 of SEC Regulation SHO, the adoption by the Financial Industry Regulatory Authority, Inc. and the national securities exchanges of a “Limit Up-Limit Down” program, the imposition of market-wide circuit breakers that halt trading of securities for certain periods following specific market declines, and the implementation of certain regulatory reforms required by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. Although the direction and magnitude of the effect that Regulation SHO, FINRA, securities exchange rule changes, and implementation of the Dodd-Frank Act may have on the trading price and the liquidity of the notes will depend on a variety of factors, many of which cannot be determined at the date of this report, past regulatory actions (such as certain emergency orders

Table of Contents

issued by the SEC in 2008 prohibiting short sales of stock of certain financial services companies) have had a significant impact on the trading prices and liquidity of convertible debt instruments. Any governmental or regulatory action that restricts the ability of investors in, or potential purchasers of, the notes to effect short sales of our common stock, borrow our common stock, or enter into swaps on our common stock or increases the costs of implementing an arbitrage strategy could adversely affect the trading price and the liquidity of the notes.

Volatility in the market price and trading volume of our common stock could adversely impact the trading price of the notes.

The stock market in recent years has experienced significant price and volume fluctuations that have often been unrelated to the operating performance of companies. The market price of our common stock could fluctuate significantly for many reasons, including in response to the risks described in this report, or for reasons unrelated to our operations, such as reports by industry analysts, investor perceptions or negative announcements by our customers, competitors or suppliers regarding their own performance, as well as industry conditions and general financial, economic and political instability. The market price of our common stock could also decline as a result of sales of a large number of shares of our common stock in the market, particularly sales by our directors, executive officers, employees, and significant stockholders, and the perception that these sales could occur may also depress the market price of our common stock. A decrease in the market price of our common stock would likely adversely impact the trading price of the notes. The market price of our common stock could also be affected by possible sales of our common stock by investors who view the notes as a more attractive means of equity participation in us and by hedging or arbitrage trading activity that we expect to develop involving our common stock. This trading activity could, in turn, affect the trading price of the notes.

We may still incur substantially more debt or take other actions which would intensify the risks discussed above.

We are not restricted under the terms of the indenture governing the notes from incurring additional debt, securing existing or future debt, recapitalizing our debt, or taking a number of other actions that are not limited by the terms of the indenture governing the notes that could have the effect of diminishing our ability to make payments on the notes when due. Any failure by us or any of our significant subsidiaries to make any payment at maturity of indebtedness for borrowed money in excess of $15 million or the acceleration of any such indebtedness in excess of $15 million would, subject to the terms of the indenture governing the notes, constitute a default under the indenture. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the notes when required.

We may not have the ability to raise the funds necessary to repurchase the notes upon specified dates or upon a fundamental change, and our future debt may contain limitations on our ability to repurchase the notes.

Holders of the notes have the right to require us to repurchase all or a portion of their notes on certain dates or upon the occurrence of a fundamental change at a repurchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest, if any. We may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of notes surrendered therefor.

In addition, our ability to repurchase the notes may be limited by law, regulatory authority, or agreements governing our future indebtedness. Our failure to repurchase notes at a time when the repurchase is required by the indenture would constitute a default under the indenture. A default under the indenture or the fundamental change itself could also lead to a default under agreements governing our future indebtedness. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the notes when required.

Holders of notes are not entitled to any rights with respect to our common stock, but they are subject to all changes made with respect to them to the extent our conversion obligation includes shares of our common stock.

Holders of notes are not entitled to any rights with respect to our common stock (including, without limitation, voting rights and rights to receive any dividends or other distributions on our common stock) prior to the conversion date with respect to any notes they surrender for conversion, but they are subject to all changes affecting our common stock. For example, if an amendment is proposed to our certificate of incorporation or bylaws requiring stockholder approval and the record date for determining the stockholders of record entitled to vote on the amendment occurs prior to the conversion date with respect to any

Table of Contents

notes surrendered for conversion, then the holder surrendering such notes will not be entitled to vote on the amendment, although such holder will nevertheless be subject to any changes affecting our common stock.

We have made only limited covenants in the indenture governing the notes, and these limited covenants may not protect a noteholder's investment.

The indenture governing the notes does not:

- require us to maintain any financial ratios or specific levels of net worth, revenues, income, cash flows, or liquidity and, accordingly, does not protect holders of the notes in the event that we experience adverse changes in our financial condition or results of operations;
- limit our subsidiaries' ability to guarantee or incur indebtedness that would rank structurally senior to the notes;
- limit our ability to incur additional indebtedness, including secured indebtedness;
- restrict our subsidiaries' ability to issue securities that would be senior to our equity interests in our subsidiaries and therefore would be structurally senior to the notes;
- restrict our ability to repurchase our securities;
- restrict our ability to pledge our assets or those of our subsidiaries; or
- restrict our ability to make investments or pay dividends or make other payments in respect of our common stock or our other indebtedness.

Furthermore, the indenture governing the notes contains only limited protections in the event of a change of control. We could engage in many types of transactions, such as acquisitions, refinancings, or certain recapitalizations, that could substantially affect our capital structure and the value of the notes and our common stock but may not constitute a "fundamental change" that permits holders to require us to repurchase their notes or a "make-whole fundamental change" that permits holders to convert their notes at an increased conversion rate. For these reasons, the limited covenants in the indenture governing the notes may not protect a noteholder's investment in the notes.

The increase in the conversion rate for notes converted in connection with a make-whole fundamental change or provisional redemption may not adequately compensate noteholders for any lost value of the notes as a result of such transaction or redemption.

If a make-whole fundamental change occurs prior to February 6, 2021 or upon our issuance of a notice of provisional redemption, under certain circumstances, we will increase the conversion rate by a number of additional shares of our common stock for notes converted in connection with such events. The increase in the conversion rate for notes converted in connection with such events may not adequately compensate noteholders for any lost value of the notes as a result of such transaction or redemption. In addition, if the price of our common stock in the transaction is greater than $180.00 per share or less than $39.96 per share (in each case, subject to adjustment), no additional shares will be added to the conversion rate. Moreover, in no event will the conversion rate per $1,000 principal amount of notes as a result of this adjustment exceed 25.0250 shares of common stock, subject to adjustment.

Our obligation to increase the conversion rate for notes converted in connection with such events could be considered a penalty, in which case the enforceability thereof would be subject to general principles of reasonableness and equitable remedies.

The conversion rate of the notes may not be adjusted for all dilutive events.

The conversion rate of the notes is subject to adjustment for certain events, including, but not limited to, the issuance of certain stock dividends on our common stock, the issuance of certain rights or warrants, subdivisions, combinations, distributions of capital stock, indebtedness, or assets, cash dividends and certain issuer tender or exchange offers. However, the conversion rate will not be adjusted for other events, such as a third-party tender or exchange offer or an issuance of common stock for cash, that

Table of Contents

may adversely affect the trading price of the notes or our common stock. An event that adversely affects the value of the notes may occur, and that event may not result in an adjustment to the conversion rate.

Some significant restructuring transactions may not constitute a fundamental change, in which case we would not be obligated to offer to repurchase the notes.

Upon the occurrence of a fundamental change, a holder of notes has the right to require us to repurchase the notes. However, the fundamental change provisions will not afford protection to holders of notes in the event of other transactions that could adversely affect the notes. For example, transactions such as leveraged recapitalizations, refinancings, restructurings, or acquisitions initiated by us may not constitute a fundamental change requiring us to repurchase the notes. In the event of any such transaction, the holders would not have the right to require us to repurchase the notes, even though each of these transactions could increase the amount of our indebtedness, or otherwise adversely affect our capital structure or any credit ratings, thereby adversely affecting the holders of notes.

In addition, absent the occurrence of a fundamental change or a make-whole fundamental change as described under changes in the composition of our board of directors will not provide holders with the right to require us to repurchase the notes or to an increase in the conversion rate upon conversion.

We cannot assure noteholders that an active trading market will develop or be maintained for the notes.

We do not intend to apply to list our outstanding convertible notes on any securities exchange or to arrange for quotation on any automated dealer quotation system. In addition, the liquidity of the trading market in the notes and the market price quoted for the notes may be adversely affected by changes in the overall market for this type of security and by changes in our financial performance or prospects or in the prospects for companies in our industry generally. As a result, we cannot assure noteholders that an active trading market will develop or be maintained for the notes. If an active trading market does not develop or is not maintained, the market price and liquidity of the notes may be adversely affected. In that case, noteholders may not be able to sell the notes at a particular time or at a favorable price.

Any adverse rating of the notes may cause their trading price to fall.

We do not intend to seek a rating on the notes. However, if a rating service were to rate the notes and if such rating service were to lower its rating on the notes below the rating initially assigned to the notes or otherwise announces its intention to put the notes on credit watch, the trading price of the notes could decline.

Holders of notes may be subject to tax if we make or fail to make certain adjustments to the conversion rate of the notes even though they do not receive a corresponding cash distribution.

The conversion rate of the notes is subject to adjustment in certain circumstances, including the payment of cash dividends. If the conversion rate is adjusted as a result of a distribution that is taxable to our common stockholders, such as a cash dividend, a noteholder may be deemed to have received a dividend subject to U.S. federal income tax without the receipt of any cash. In addition, a failure to adjust (or to adjust adequately) the conversion rate after an event that increases a noteholder's proportionate interest in us could be treated as a deemed taxable dividend to you. If a make-whole fundamental change occurs prior to February 6, 2021 or we provide notice of a provisional redemption, under some circumstances, we will increase the conversion rate for notes converted in connection with the make-whole fundamental change or provisional redemption. Such increase may also be treated as a distribution subject to U.S. federal income tax as a dividend. For a non-U.S. holder, any deemed dividend would be subject to U.S. federal withholding tax at a 30% rate, or such lower rate as may be specified by an applicable treaty, which may be set off against subsequent payments on the notes.

Any conversions of the notes will dilute the ownership interest of our existing stockholders, including holders who had previously converted their notes.

Any conversion of some or all of the notes will dilute the ownership interests of our existing stockholders. Any sales in the public market of our common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, the existence of the notes may encourage short selling by market participants because the conversion of the notes could depress the price of our common stock.

Table of Contents

Item 5. Other Information.

None.

Item 6. Exhibits.

Exhibit Number	Description	Incorporated by Reference From Form	Incorporated by Reference From Exhibit Number	Date Filed
10.1†*	Offer Letter to Stephen Christopher Linthwaite, dated July 14, 2016	Filed herewith		
10.2*	Employment and Severance Agreement, effective as of August 1, 2016, by and between the Company and Stephen Christopher Linthwaite	Filed herewith		
31.1	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 of Chief Executive Officer	Filed herewith		
31.2	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 of Chief Financial Officer	Filed herewith		
32.1(1)	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 of Chief Executive Officer	Furnished herewith		
32.2(1)	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 of Chief Financial Officer	Furnished herewith		
101.INS	XBRL Instance Document	Filed herewith		
101.SCH	XBRL Taxonomy Extension Schema Document	Filed herewith		
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	Filed herewith		
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	Filed herewith		
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	Filed herewith		
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	Filed herewith		

† Portions of this exhibit (indicated by asterisks) have been omitted pursuant to a request for confidential treatment and this exhibit has been filed separately with the SEC.

* Indicates a management contract or compensatory plan.

Table of Contents

(1) In accordance with Item 601(b)(32)(ii) of Regulation S-K and SEC Release No. 33-8238 and 34-47986, Final Rule: Management's Reports on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports, the certifications furnished in Exhibits 32.1 and 32.2 hereto are deemed to accompany this Form 10-Q and will not be deemed "filed" for purposes of Section 18 of the Exchange Act. Such certifications will not be deemed to be incorporated by reference into any filings under the Securities Act or the Exchange Act, except to the extent that the registrant specifically incorporates it by reference.

Table of Contents

SIGNATURES

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

FLUIDIGM CORPORATION

Dated: November 8, 2016 By: /s/ Stephen Christopher Linthwaite
Stephen Christopher Linthwaite

President and Chief Executive Officer

Dated: November 8, 2016 By: /s/ Vikram Jog
Vikram Jog
Chief Financial Officer

Table of Contents

EXHIBIT LIST

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