

March 18, 2015

## OUTPERFORM from MARKET PERFORM

Reason for report:

### RATING CHANGE

**Dan Leonard**  
(212) 277-6116  
Dan.Leonard@Leerink.com

**Kevin C. Chen**  
(212) 277-6045  
Kevin.Chen@leerink.com

**Carmen Augustine**  
(212) 277-6012  
Carmen.Augustine@Leerink.com



## T2 BIOSYSTEMS, INC.

### Upgrade to Outperform on Improved Risk/Reward

• **Bottom Line:** We believe the risk/reward profile of TTOO's stock has improved substantially over the last 7 months. Thus, we're upgrading to Outperform from Market Perform. Our price target remains \$23.

• **Speed of FDA clearance and publication signal a high level of interest to us.** The Sept 2014 FDA clearance of TTOO's Candida test and instrument itself de-risks TTOO's story compared to previously. Additionally, we believe the speed at which both the FDA issued its clearance and the data were published signals a high level of interest in the medical community for a test that can deliver Candida results in ~4 hrs vs 2 – 5 days with conventional technology (see initiation for further background on clinical context [\[LINK\]](#)). Both the FDA clearance and publication of the clinical validation data occurred in half the time of comparable products.

• **Early commercialization efforts underway.** TTOO is now in the process of commercializing its T2Candida test. The company expanded its sales and marketing headcount from 4 in June 2014 to 14 at year end. TTOO is currently engaged with 25% of its target 450 hospitals, a larger funnel than it initially contemplated at this stage. Nine of these facilities have completed favorable economic evaluations. We expect the company can secure its first commercial contracts within the next ~3 months.

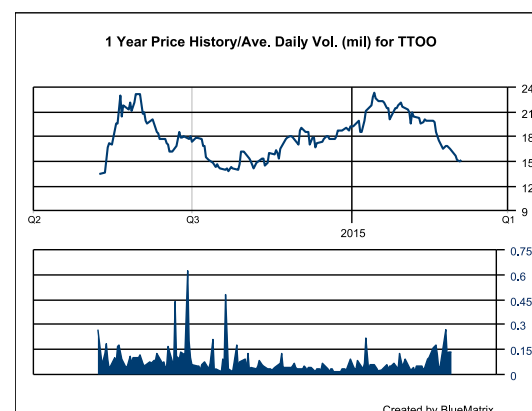
• **Catalyst waterfall includes contracts, further publications, and clinical trials.** We expect the announcement of initial customer contracts could be a positive catalyst for TTOO's stock. Additionally, we believe further key publications could be supportive. TTOO has four additional studies underway to support the clinical validity and utility of its T2Candida test, some of which could be published in 2015. Also, we expect another economic justification publication could be forthcoming this year, one which assesses the economic value of T2Candida bottoms up using data from the clinical trial as well as wholesale drug pricing. Finally, we view the initiation of TTOO's clinical trials for T2Bacteria (2H15) and T2HemoStat (1H16) as potential positive catalysts.

• **Novel technology platform has broad application; value recognized in public and private markets.** That TTOO's technology can be applied to virtually any class of analyte and work in challenging samples could enable broad applications both within and beyond medical diagnostics. We consider TTOO's recently announced collaboration with Canon U.S. Life Sciences an endorsement of the technology's capability, and we expect additional agreements to follow. Canon is collaborating with TTOO to develop a test for Lyme disease. Diagnostic platform technologies with broad application trade and have transacted at large valuations.

### Key Stats:

(NASDAQ:TTOO)

<b>S&amp;P 600 Health Care Index:</b>	<b>1,612.47</b>
<b>Price:</b>	<b>\$15.94</b>
Price Target:	\$23.00
Methodology:	~6x Dec.-17E TTM revs., discounted 1 year back at ~20% rate
52 Week High:	\$24.50
52 Week Low:	\$11.00
Shares Outstanding (mil):	20.0
Market Capitalization (mil):	\$318.8
Book Value/Share:	\$2.65
Cash Per Share:	\$3.68
Net Debt to Total Capital:	NM
Dividend (ann):	\$0.00
Dividend Yield:	0.0%



Dec Yr	1Q	2Q	3Q	4Q	FY Rev	1Q	2Q	3Q	4Q	FY EPS	P/E
2014A	0.0	0.0	0.0	\$0.1	\$0.1	(\$4.90)	(\$6.35)	(\$0.71)	(\$0.45)	(\$4.15)	NM
2015E	\$0.2	\$0.3	\$1.4	\$2.8	\$4.6	(\$0.59)	(\$0.60)	(\$0.56)	(\$0.51)	(\$2.27)	NM
2016E	--	--	--	--	\$38.5	--	--	--	--	(\$2.08)	NM
2017E	--	--	--	--	\$114.0	--	--	--	--	(\$1.11)	NM

Source: Company Information and Leerink Partners LLC Research  
Revenues in \$MM.

GAAP EPS presented. Quarterly figures may not sum to annual total due to change in shares out. IPO was 8.7.14.

## INVESTMENT THESIS

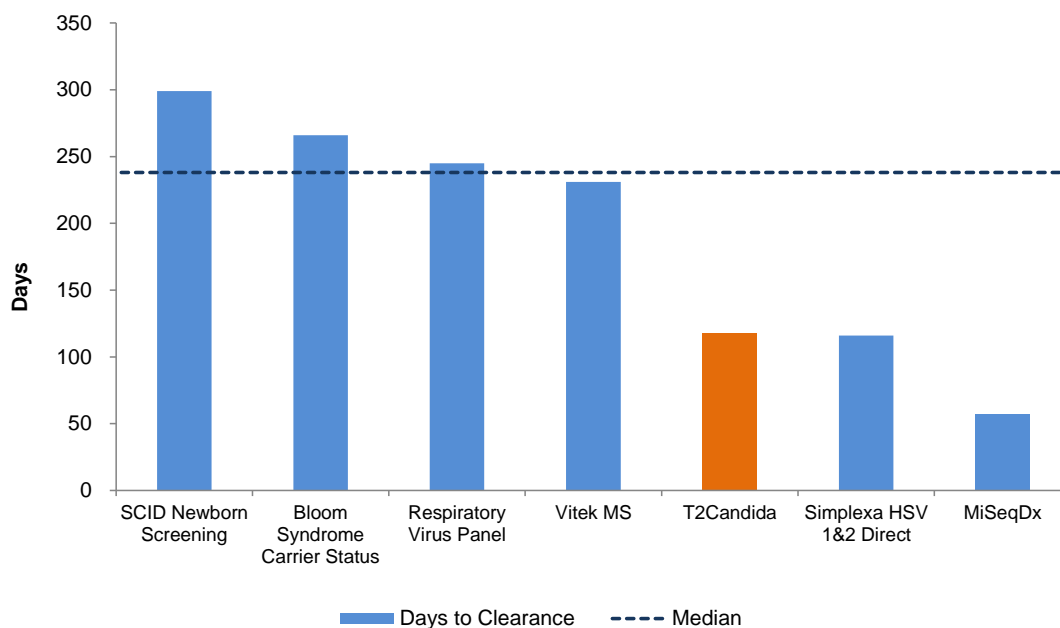
TTOO is a developmental stage manufacturer of a novel detection platform with broad application. Its initial focus is to commercialize instruments and diagnostic tests for sepsis and hemostasis, and the company has received FDA clearance for its first product, a test to detect Candida infection in the bloodstream. TTOO's instruments and tests are based on a unique technology which capitalizes on the magnetic properties of water to detect a broad range of analytes in solution. We believe the market opportunities for TTOO's technology are broad and view the risk/reward on the stock favorably at current levels.

## SPEED OF CLEARANCE, PUBLICATION = HIGH INTEREST

FDA clearance and clinical publication twice as fast as comparable tests

TTOO received FDA clearance for its T2Candida test much faster than we anticipated, and much faster than many other de novo 510(k) clearances we have witnessed. The FDA uses its de novo 510(k) clearance process when an adequate predicate device does not exist, and these clearance processes can last longer than traditional 510(k) clearances. The following table illustrates FDA clearance timelines for some other novel device/test combinations.

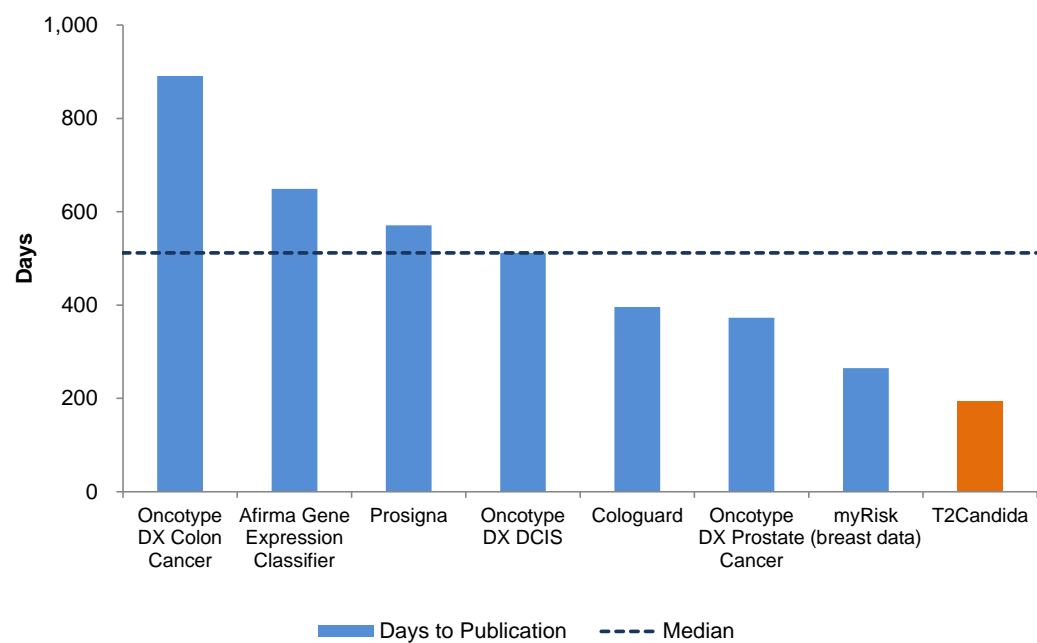
### T2Candida Test Cleared Twice as Quickly as Other De Novo Products



Source: Leerink Partners; SCID = severe combined immunodeficiency; HSV = herpes simplex virus; MS = mass spectrometry

Additionally, the lag between T2OO's disclosure of its top-line results from its pivotal clinical validation study and the publication of those results in peer-reviewed literature was much shorter than that for many other diagnostic products. The following table illustrates this disparity.

Clinical Validation Published Twice as Quickly as Validation of Comparable Products



Source: Leerink Partners

We believe the speed of these events signals a high level of interest in the medical community for a test such as T2OO's that can detect organisms directly from blood. This interest stems from the test's ability to deliver results in ~4 hours vs 2 – 5 days with conventional technologies. See our initiation for more background on the clinical case for rapid Candida testing ([LINK](#)).

## FURTHER CATALYSTS ON THE WAY

Contract wins, publications, clinical trial launches, and partnerships could all boost sentiment

**Initial contract wins in proximity.** With the speedy approval of the T2Candida test in 3Q14, TTOO was able to jump start its sales efforts. The company targets 30 contracts with high volume hospitals for its T2Candida test in 2015, and has sounded positive on the customer acquisition process to date. The company has already noted its sales funnel is swelling at a greater rate than anticipated. We expect the initial contracts to be announced within ~3 months, with the revenue ramp to be back-ended in 2015 as the sales cycle takes 6-12 months.

**Incremental publications expected throughout 2015.** We believe further key publications could be supportive of TTOO's commercialization efforts for T2Candida. TTOO has four additional studies underway to support the clinical validity and utility of its T2Candida test, some of which could be published in 2015. Additionally, we expect another economic justification publication could be forthcoming this year, one which assesses the economic value of T2Candida bottoms up using data from the clinical trial as well as wholesale drug pricing.

**T2Bacteria and T2HemoStat clinical trials on schedule.** We view the initiation of the FDA clinical trials for T2Bacteria in 2H15 and T2HemoStasis in 1H16 as de-risking events for these products.

**More partnerships perhaps on the way.** The February announcement of a multi-year agreement with Canon to develop a rapid diagnostic for Lyme disease highlights the breadth of TTOO's technology platform and the potential for further 3<sup>rd</sup> party collaborations. It also offers endorsement by a major company, albeit with a minor presence in life sciences. We believe companies both within and outside the traditional diagnostics industry have interest in partnering with TTOO, and we expect further partnerships could follow.

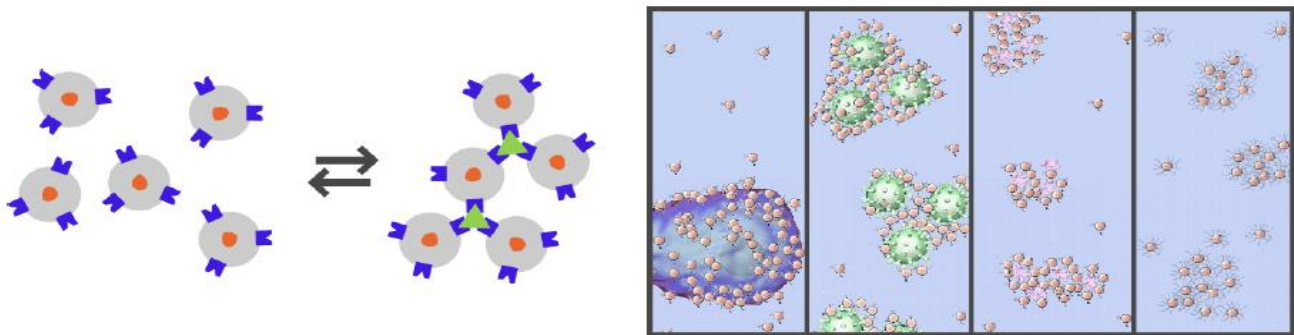
## TECHNOLOGY PLATFORM HAS BROAD APPLICATION

Ease of use, multiple applications

**TTOO's technology is unique.** TTOO's proprietary magnetic resonance testing technology (T2MR) is unique relative to other biochemical testing technologies in diagnostics. The mechanism takes advantage of miniaturized magnetic resonance technology and the magnetic properties of water molecules in solution to detect targets of interest. Specifically, different clustering patterns of molecules in water-based solutions affect the properties of hydrogen atoms in water. The relaxation of these molecules post disturbance is known as the T2 signal, a signal TTOO can measure with its device.

Various triggers can disturb the water microenvironment and catalyze a measurable event. In the case of TTOO's Candida and bacteria assays, these triggers are magnetic nanoparticles, coated with binder, that bind to nucleic acid from Candida and bacteria targets. The magnetic nanoparticles can be conditioned to bind to virtually any class of analyte (i.e., particle to be measured), including proteins, cells, viruses, and small molecules. Once an analyte is identified in solution, the nanoparticles cluster onto this analyte, and in so clustering, change the T2 of the surrounding water. Thus, the absence or presence of the target analyte can quickly be determined. If the analyte is not present in solution, the nanoparticles will not bind to anything and the T2 readout will not reflect that of the known probe, but rather the T2 of water. The following figure illustrates the process of nanoparticle clustering to detect analytes of interest.

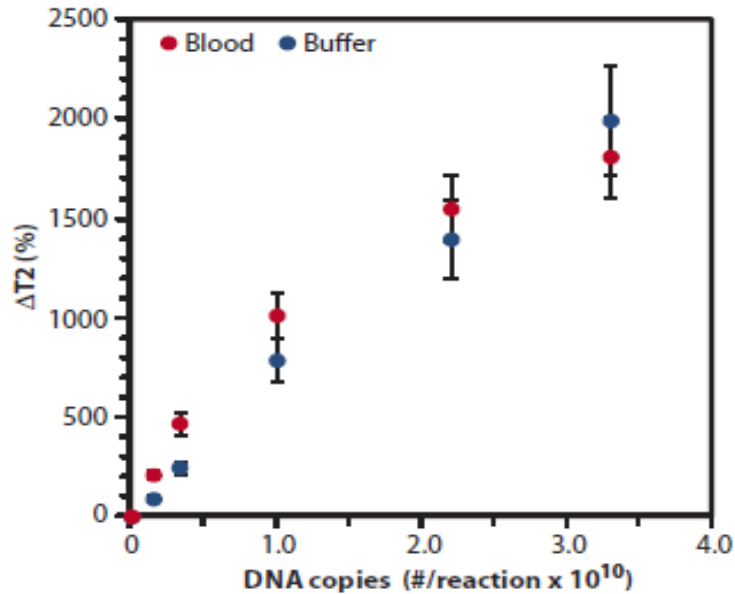
### Principle of T2MR Detection with Magnetic Nanoparticles



Source: Lowery et al. "Single-Coil, Multisample, Proton Relaxation Method for Magnetic Relaxation Switch Assays," *Analytical Chemistry*, Feb 2008; Leerink Partners

In measurements of hemostasis, no magnetic nanoparticles are required because the composition of the blood itself changes during the hemostatic process. The addition of basic chemicals triggers the clotting event, which impacts the microenvironments of water around the various components within the blood sample. The water microenvironments can again be measured with T2MR.

Underlying both methods is the principle that the change in T2 will display a positive relationship with the concentration of the event being measured. The following figure illustrates an example.

**Scatter Plot Showing T2 Detection Over a Range of DNA Concentrations in Blood**

Source: Beyda et al. "Comparison of the T2Dx instrument with T2Candida assay and automated blood culture in the detection of *Candida* species using seeded blood samples," *Diagnostic Microbiology and Infectious Disease*, Dec 2013

In clinical applications, assays can be performed on a variety of specimens including blood, urine, and serum using the T2MR process.

**Platform poses a range of advantages.** The benefits of this measurement method, vs other more standard diagnostic measurement technologies such as polymerase chain reaction (PCR), are threefold: (1) the sample doesn't require upfront purification; (2) because the detection step is not dependent on the use of light, tests can be performed in opaque or dirty samples; and (3) the diagnostic device can be designed in a remarkably simplified fashion, enabling ease of use unmatched by most competing instruments. The following graphic illustrates some of these applications.

T2MR Has a Broad Range of Applications



Source: T2 Biosystems

## NOVEL TECHNOLOGY PLATFORMS ARE VALUABLE

T2MR one of the most compelling platforms in diagnostics

**Platform plays have value in both the public and private markets.** While investors may view TTOO largely as a commercial execution story, we believe they should not lose sight of the value placed on novel platform technologies in diagnostics. We believe TTOO's T2MR system represents one of the most compelling platforms due to its ability to test on challenging samples as well as ease of use. The following table illustrates values ascribed to public companies and technology acquisitions in diagnostics, in circumstances where those companies trade or transacted based on the value of the technology platform, rather than revenue multiple.

### TTOO Only a Slight Premium to Median Diagnostics Platform Play

Company / Asset	Mkt Cap (\$M)	Notes
AXDX	\$923	
GNMK	544	
NSPH	30	
QTNT	278	
ROKA	74	
BD Max	505	BDX paid \$230M for GeneOhm and \$275M for HandyLab in two separate transactions
Ibis Biosciences	215	ABT spent \$175M to purchase remaining 81.4% stake
IQuum	\$275	Roche paid up to \$450m including contingent incentives
Median (ex TTOO)	\$277	
TTOO	\$319	

Source: Leerink Partners; market caps from FactSet, as of 3/17/2015 close, unless otherwise noted

TTOO trades at only a slight premium to the median of these other diagnostic platform technologies, a premium we do not think sufficiently reflects the platform's value.

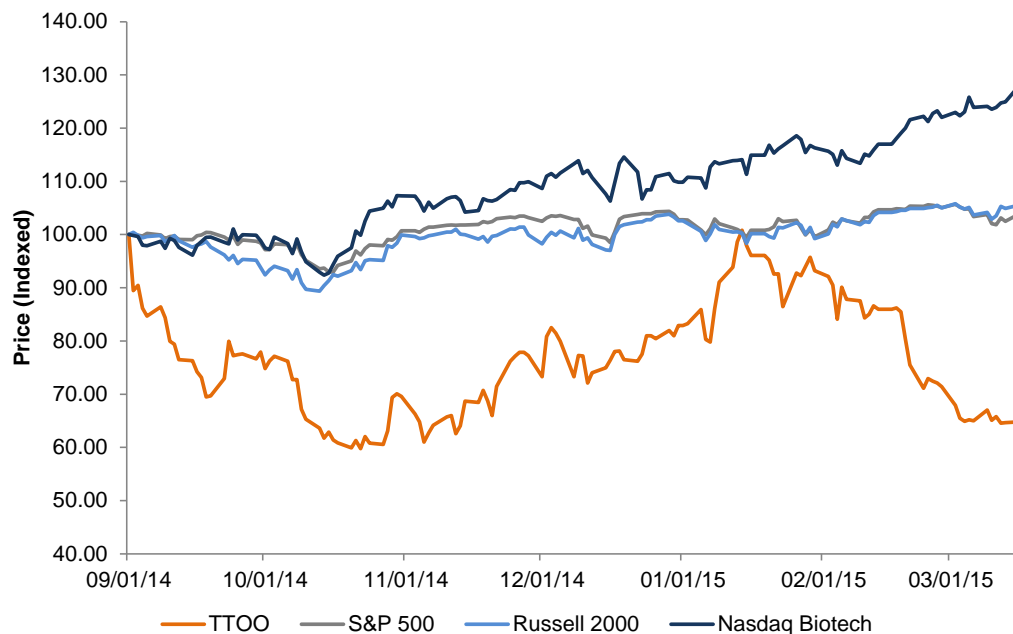


## STOCK WEAKNESS PRESENTS BUYING OPPORTUNITY

Weakening of stock year-to-date offers buying opportunity

We believe the weakness in TTOO's stock year-to-date presents a buying opportunity. The following table illustrates the underperformance of TTOO's shares compared to relevant indices, despite the progress the company has made in the past 6 months.

### TTOO's Recent Underperformance Not Reflective of Fundamentals



Source: FactSet

## VALUATION

The median emerging growth tools and diagnostics company currently trades for ~6x forward-twelve month revenue. We believe TTOO deserves a multiple of at least parity to the peer group due to its unique, patent-protected technology, large market opportunity, and revenue growth prospects. We consider ~6x FTM revenue a fair reflection of these positive attributes, offset by inherent uncertainties over the revenue ramp for TTOO's products. When calculating a 12-month price target, we would normally calculate an enterprise value, using projected levels of debt and cash, that is a multiple of revenue for the twelve months ended Dec-16 (the forward twelve month revenue estimate, twelve months from now). However, for TTOO, we project out a year further given the company's stage in its product adoption. Therefore, we apply our revenue multiple of ~6x to our revenue estimate of ~\$114M for the twelve months ended Dec-17 to yield a price of \$28 in two years. We discount that back at a rate of 20% to arrive at a \$23 12-month price target.

## RISKS TO VALUATION

The primary risks to our price target for TTOO include, but are not limited to: a slower-than-projected adoption curve for the company's sepsis products, a smaller-than-projected market opportunity for the company's sepsis products, an unforeseen detrimental impact from an evolving competitive environment, regulatory risk, product development risk, and financing risk.

	2012	2013	Mar-14	Jun-14	Sep-14	Dec-14	2014	Mar-15e	Jun-15e	Sep-15e	Dec-15e	2015e	2016e	2017e
Revenue														
<b>Product</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,000</b>	<b>\$2,375</b>	<b>\$3,375</b>	<b>\$36,450</b>	<b>\$111,000</b>
Other	<u>19</u>	<u>266</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>119</u>	<u>119</u>	<u>200</u>	<u>300</u>	<u>350</u>	<u>400</u>	<u>1,250</u>	<u>2,000</u>	<u>3,000</u>
Total revenue	19	266	0	0	0	119	119	200	300	1,350	2,775	4,625	38,450	114,000
COGS	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>19,225</u>	<u>45,600</u>
Gross profit	19	266	0	0	0	119	119	200	300	1,350	2,775	4,625	19,225	68,400
SG&A	2,945	5,022	1,842	2,446	2,984	3,747	11,019	4,871	5,000	5,200	5,400	20,471	30,760	51,300
R&D	<u>11,727</u>	<u>14,936</u>	<u>5,065</u>	<u>4,703</u>	<u>4,803</u>	<u>5,210</u>	<u>19,781</u>	<u>6,773</u>	<u>6,900</u>	<u>7,000</u>	<u>7,200</u>	<u>27,873</u>	<u>28,838</u>	<u>37,620</u>
<b>Operating income (loss)</b>	<b>(14,653)</b>	<b>(19,692)</b>	<b>(6,907)</b>	<b>(7,149)</b>	<b>(7,787)</b>	<b>(8,838)</b>	<b>(30,681)</b>	<b>(11,444)</b>	<b>(11,600)</b>	<b>(10,850)</b>	<b>(9,825)</b>	<b>(43,719)</b>	<b>(40,373)</b>	<b>(20,520)</b>
Interest expense (income)	154	403	86	80	304	251	721	490	496	502	507	1,996	2,123	2,564
Other expense, net	<u>(352)</u>	<u>515</u>	<u>(73)</u>	<u>74</u>	<u>0</u>	<u>(13)</u>	<u>(12)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Pretax income	(14,455)	(20,610)	(6,920)	(7,303)	(8,091)	(9,076)	(31,390)	(11,934)	(12,096)	(11,352)	(10,332)	(45,715)	(42,496)	(23,084)
Taxes	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net income	(\$14,455)	(\$20,610)	(\$6,920)	(\$7,303)	(\$8,091)	(\$9,076)	(\$31,390)	(\$11,934)	(\$12,096)	(\$11,352)	(\$10,332)	(\$45,715)	(\$42,496)	(\$23,084)
Accretion of redeemable preferred	<u>(4,412)</u>	<u>(6,908)</u>	<u>(1,906)</u>	<u>(1,906)</u>	<u>(758)</u>	<u>0</u>	<u>(4,570)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net income applicable to common	(\$18,867)	(\$27,518)	(\$8,826)	(\$9,209)	(\$8,849)	(\$9,076)	(\$35,960)	(\$11,934)	(\$12,096)	(\$11,352)	(\$10,332)	(\$45,715)	(\$42,496)	(\$23,084)
Basic shares outstanding	2,315	2,373	1,412	1,451	12,379	20,042	8,675	20,092	20,142	20,192	20,242	20,167	20,429	20,792
Diluted shares outstanding	2,315	2,373	1,412	1,451	12,379	20,042	8,675	20,092	20,142	20,192	20,242	20,167	20,429	20,792
<b>EPS diluted</b>	<b>(\$6.24)</b>	<b>(\$8.69)</b>	<b>(\$4.90)</b>	<b>(\$6.35)</b>	<b>(\$0.71)</b>	<b>(\$0.45)</b>	<b>(\$4.15)</b>	<b>(\$0.59)</b>	<b>(\$0.60)</b>	<b>(\$0.56)</b>	<b>(\$0.51)</b>	<b>(\$2.27)</b>	<b>(\$2.08)</b>	<b>(\$1.11)</b>
<i>EPS growth</i>														
Sales growth								nm	nm	nm	2231.9%	3786.6%	731.4%	196.5%
Gross margin	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	50.0%	60.0%
SG&A % of revenue	15500.0%	1888.0%	nm	nm	nm	3148.7%	9259.7%	2435.6%	1666.7%	385.2%	194.6%	442.6%	80.0%	45.0%
R&D % of revenue	61721.1%	5615.0%	nm	nm	nm	4378.2%	16622.7%	3386.5%	2300.0%	518.5%	259.5%	602.7%	75.0%	33.0%
<b>Operating margin</b>	<b>(77121.1%)</b>	<b>(7403.0%)</b>	<b>nm</b>	<b>nm</b>	<b>nm</b>	<b>(7426.9%)</b>	<b>(25782.4%)</b>	<b>(5722.1%)</b>	<b>(3866.7%)</b>	<b>(803.7%)</b>	<b>(354.1%)</b>	<b>(945.3%)</b>	<b>(105.0%)</b>	<b>(18.0%)</b>
Tax rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
D&A	\$571	\$584	\$144	\$0	\$0	\$0	\$144	\$250	\$250	\$350	\$300	\$1,150	\$2,083	\$3,330
<b>EBITDA</b>	<b>(\$14,082)</b>	<b>(\$19,108)</b>	<b>(\$6,763)</b>	<b>(\$7,149)</b>	<b>(\$7,787)</b>	<b>(\$8,838)</b>	<b>(\$30,537)</b>	<b>(\$11,194)</b>	<b>(\$11,350)</b>	<b>(\$10,500)</b>	<b>(\$9,525)</b>	<b>(\$42,569)</b>	<b>(\$38,290)</b>	<b>(\$17,190)</b>
<b>Free cash flow</b>														
Operating cash flow	(\$13,303)	(\$18,053)	(\$5,791)	(\$6,400)	(\$7,508)	(\$8,485)	(\$28,184)	(\$12,448)	(\$11,546)	(\$12,509)	(\$8,637)	(\$45,140)	(\$38,482)	(\$10,713)
CapX	<u>(283)</u>	<u>(513)</u>	<u>(263)</u>	<u>(245)</u>	<u>(531)</u>	<u>(1,045)</u>	<u>(2,084)</u>	<u>(500)</u>	<u>(500)</u>	<u>(500)</u>	<u>(500)</u>	<u>(2,000)</u>	<u>(5,959)</u>	<u>(11,444)</u>
Free cash flow	(\$13,586)	(\$18,566)	(\$6,054)	(\$6,645)	(\$8,039)	(\$9,530)	(\$30,268)	(\$12,948)	(\$12,046)	(\$13,009)	(\$9,137)	(\$47,140)	(\$44,440)	(\$22,157)

**Notes:**

Source: Company reports and Leerink Partners estimates

<b>Balance Sheet (\$ thousands)</b>	<b>Mar-14</b>	<b>Jun-14</b>	<b>Sep-14</b>	<b>Dec-14</b>	<b>Mar-15e</b>	<b>Jun-15e</b>	<b>Sep-15e</b>	<b>Dec-15e</b>
<b>Assets</b>								
Cash, equivalents, and short-term investments	\$23,698	\$15,876	\$75,589	\$73,849	\$61,401	\$49,855	\$37,346	\$28,709
Accounts receivable	0	0	0	201	201	201	384	911
Inventory	0	0	0	115	115	115	0	0
Other	<u>247</u>	<u>202</u>	<u>1,087</u>	<u>1,156</u>	<u>1,156</u>	<u>1,156</u>	<u>400</u>	<u>950</u>
Total current assets	23,945	16,078	76,676	75,321	62,873	51,327	38,129	30,570
Property and equipment, net	1,237	1,327	1,698	2,760	3,010	3,260	3,410	3,610
Goodwill	0	0	0	0	0	0	0	0
Other intangibles	0	0	0	0	0	0	0	0
Restricted cash and other	<u>650</u>	<u>2,647</u>	<u>493</u>	<u>740</u>	<u>740</u>	<u>740</u>	<u>740</u>	<u>740</u>
Total assets	\$25,832	\$20,052	\$78,867	\$78,821	\$66,623	\$55,327	\$42,279	\$34,920
<b>Liabilities and shareholders' equity</b>								
Notes payable and current maturities of long-term debt	\$1,764	\$1,769	\$290	\$295	\$3,143	\$3,143	\$3,143	\$3,143
Accounts payable	1,035	720	725	735	1,000	1,000	(76)	0
Accruals and other	<u>2,402</u>	<u>4,257</u>	<u>5,647</u>	<u>3,829</u>	<u>2,500</u>	<u>2,500</u>	<u>880</u>	<u>2,090</u>
Total current liabilities	5,201	6,746	6,662	4,859	6,643	6,643	3,948	5,233
Long-term debt	2,855	2,411	10,733	20,660	17,812	17,812	17,812	17,812
Deferred payments	0	23	18	106	106	106	106	106
Other	<u>1,187</u>	<u>1,226</u>	<u>24</u>	<u>195</u>	<u>195</u>	<u>195</u>	<u>195</u>	<u>195</u>
Total liabilities	\$9,243	\$10,406	\$17,437	\$25,820	\$24,756	\$24,756	\$22,060	\$23,346
Convertible preferred stock	\$114,719	\$116,625	\$0	\$0	\$0	\$0	\$0	\$0
Shareholders' equity	(\$98,130)	(\$106,980)	\$61,430	\$53,001	\$41,867	\$30,571	\$20,219	\$11,574
Total liabilities, shareholders' equity, and minority interest	\$25,832	\$20,051	\$78,867	\$78,821	\$66,623	\$55,327	\$42,279	\$34,920

Notes:

Source: Company reports and Leerink Partners estimates

## Disclosures Appendix

### Analyst Certification

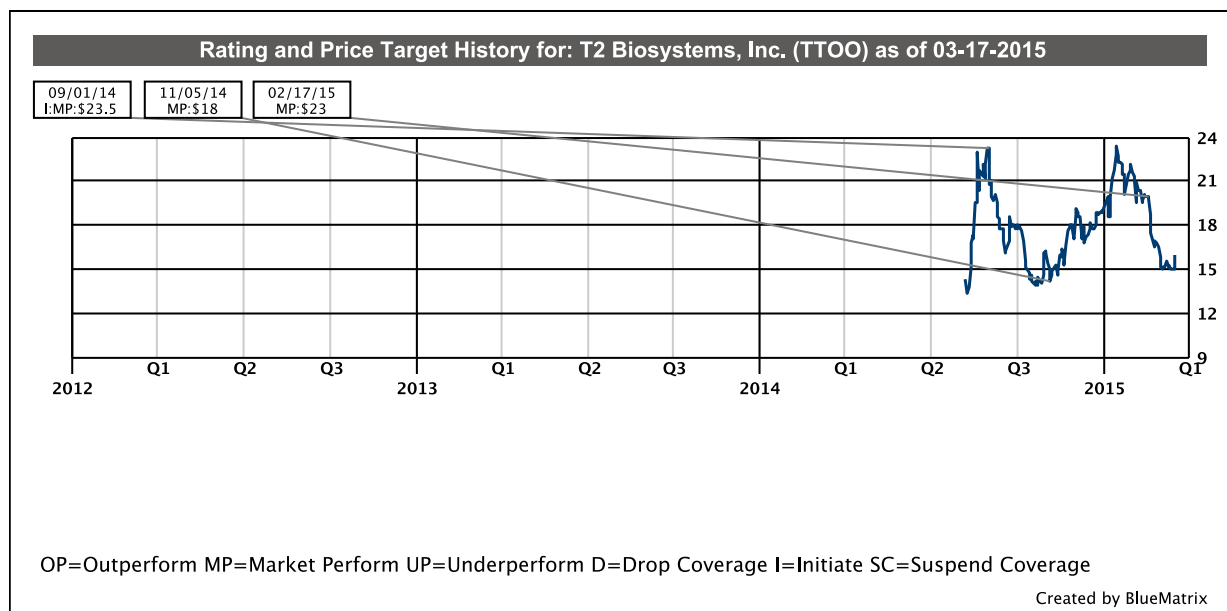
I, Dan Leonard, certify that the views expressed in this report accurately reflect my views and that no part of my compensation was, is, or will be directly related to the specific recommendation or views contained in this report.

### Valuation

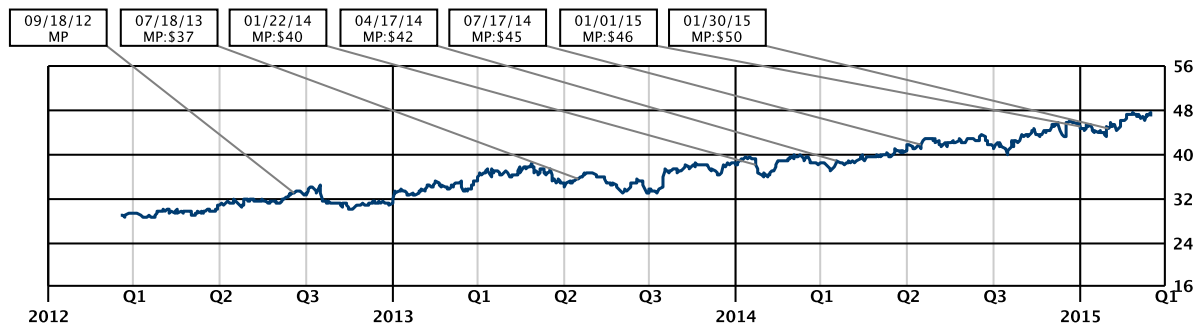
The median emerging growth tools and diagnostics company currently trades for ~6x forward-twelve month revenue. We believe T2OO deserves a multiple of at least parity to the peer group due to its unique, patent-protected technology, large market opportunity, and revenue growth prospects. We consider ~6x FTM revenue a fair reflection of these positive attributes, offset by inherent uncertainties over the revenue ramp for T2OO's products. When calculating a 12-month price target, we would normally calculate an enterprise value, using projected levels of debt and cash, that is a multiple of revenue for the twelve months ended Dec-16 (the forward twelve month revenue estimate, twelve months from now). However, for T2OO, we project out a year further given the company's stage in its product adoption. Therefore, we apply our revenue multiple of ~6x to our revenue estimate of ~\$114M for the twelve months ended Dec-17 to yield a price of \$28 in two years. We discount that back at a rate of 20% to arrive at a \$23 12-month price target.

### Risks to Valuation

The primary risks to our price target for T2OO include, but are not limited to: a slower-than-projected adoption curve for the company's sepsis products, a smaller-than-projected market opportunity for the company's sepsis products, an unforeseen detrimental impact from an evolving competitive environment, regulatory risk, product development risk, and financing risk.



### Rating and Price Target History for: Abbott Laboratories (ABT) as of 03-17-2015

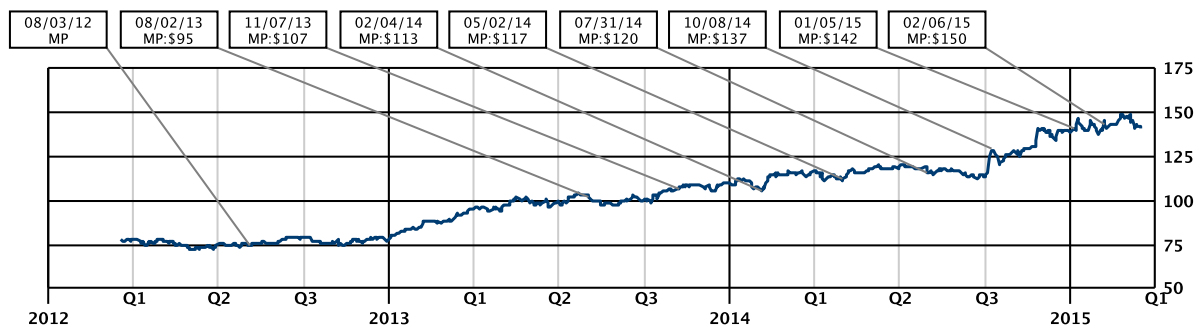


Leerink Swann placed an Outperform rating on ABT on October 31, 2005. On June 11, 2013, Leerink Swann began a transition to specific price targets for the stocks under its coverage, replacing valuation ranges.

OP=Outperform MP=Market Perform UP=Underperform D=Drop Coverage I=Initiate SC=Suspend Coverage

Created by BlueMatrix

### Rating and Price Target History for: Becton, Dickinson and Company (BDX) as of 03-17-2015

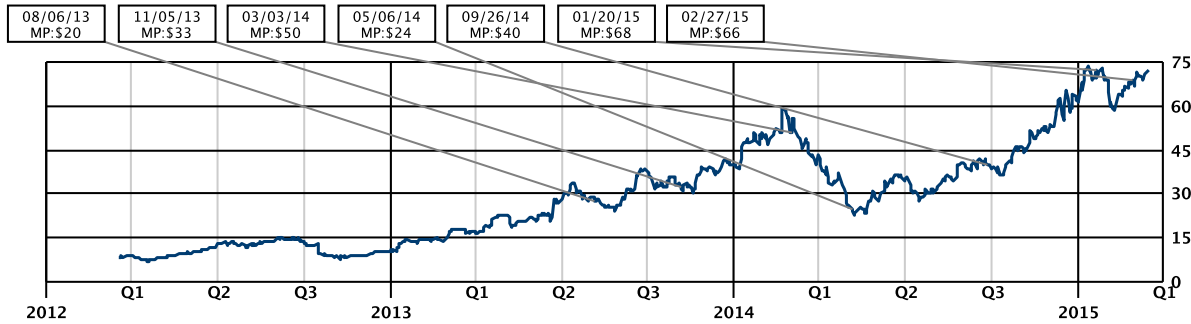


Leerink Swann initiated coverage of BDX with an Outperform rating on April 25, 2003. On June 11, 2013, Leerink Swann began a transition to specific price targets for the stocks under its coverage, replacing valuation ranges.

OP=Outperform MP=Market Perform UP=Underperform D=Drop Coverage I=Initiate SC=Suspend Coverage

Created by BlueMatrix

### Rating and Price Target History for: Isis Pharmaceuticals, Inc. (ISIS) as of 03-17-2015

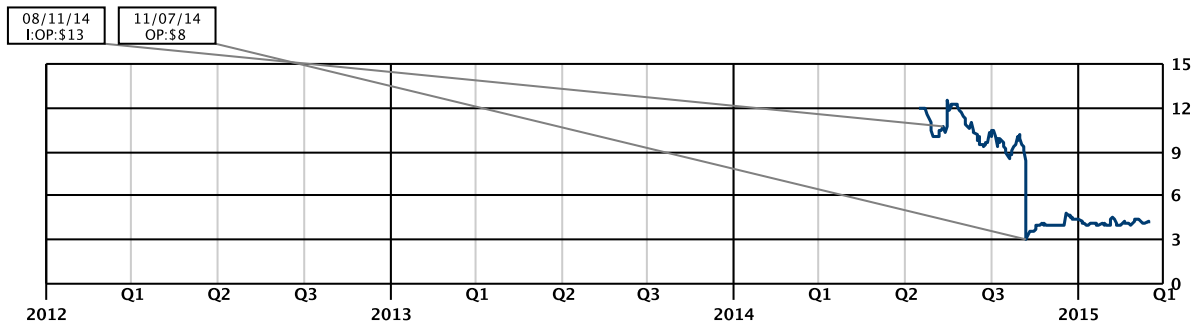


Leerink Swann placed a Market Perform rating on ISIS on April 18, 2008. On June 11, 2013, Leerink Swann began a transition to specific price targets for the stocks under its coverage, replacing valuation ranges.

OP=Outperform MP=Market Perform UP=Underperform D=Drop Coverage I=Initiate SC=Suspend Coverage

Created by BlueMatrix

### Rating and Price Target History for: Roka Bioscience, Inc. (ROKA) as of 03-17-2015



OP=Outperform MP=Market Perform UP=Underperform D=Drop Coverage I=Initiate SC=Suspend Coverage

Created by BlueMatrix

Distribution of Ratings/Investment Banking Services (IB) as of 12/31/14				
Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [OP]	150	70.00	60	40.00
HOLD [MP]	64	30.00	1	2.00
SELL [UP]	0	0.00	0	0.00

## Explanation of Ratings

**Outperform (Buy):** We expect this stock to outperform its benchmark over the next 12 months.

**Market Perform (Hold/Neutral):** We expect this stock to perform in line with its benchmark over the next 12 months.

**Underperform (Sell):** We expect this stock to underperform its benchmark over the next 12 months. The degree of outperformance or underperformance required to warrant an Outperform or an Underperform rating should be commensurate with the risk profile of the company.

For the purposes of these definitions the relevant benchmark will be the S&P 600® Health Care Index for issuers with a market capitalization of less than \$2 billion and the S&P 500® Health Care Index for issuers with a market capitalization over \$2 billion.

## Important Disclosures

This information (including, but not limited to, prices, quotes and statistics) has been obtained from sources that we believe reliable, but we do not represent that it is accurate or complete and it should not be relied upon as such. All information is subject to change without notice. This is provided for information purposes only and should not be regarded as an offer to sell or as a solicitation of an offer to buy any product to which this information relates. The Firm, its officers, directors, employees, proprietary accounts and affiliates may have a position, long or short, in the securities referred to in this report, and/or other related securities, and from time to time may increase or decrease the position or express a view that is contrary to that contained in this report. The Firm's salespeople, traders and other professionals may provide oral or written market commentary or trading strategies that are contrary to opinions expressed in this report. The Firm's proprietary accounts may make investment decisions that are inconsistent with the opinions expressed in this report. The past performance of securities does not guarantee or predict future performance. Transaction strategies described herein may not be suitable for all investors. Additional information is available upon request by contacting the Editorial Department at One Federal Street, 37th Floor, Boston, MA 02110.

Like all Firm employees, analysts receive compensation that is impacted by, among other factors, overall firm profitability, which includes revenues from, among other business units, Institutional Equities, and Investment Banking. Analysts, however, are not compensated for a specific investment banking services transaction. MEDACorp is a network of healthcare professionals, attorneys, physicians, key opinion leaders and other specialists accessed by Leerink and it provides information used by its analysts in preparing research.

In the past 12 months, the Firm has received compensation for providing investment banking services to T2 Biosystems, Inc. and Roka Bioscience, Inc. .

Leerink Partners LLC makes a market in T2 Biosystems, Inc., Isis Pharmaceuticals, Inc. and Roka Bioscience, Inc.



**Leerink Partners LLC is willing to sell to, or buy from, clients the common stock of Abbott Laboratories and Becton, Dickinson and Company on a principal basis.**

**Leerink Partners LLC has acted as a co-manager for a public offering of T2 Biosystems, Inc. in the past 12 months.**

**Leerink Partners LLC has acted as the manager for a public offering of Roka Bioscience, Inc. in the past 12 months.**

**©2015 Leerink Partners LLC. All rights reserved. This document may not be reproduced or circulated without our written authority.**

## Leerink Partners LLC Equity Research

<b>Director of Equity Research</b>	<b>John L. Sullivan, CFA</b>	(617) 918-4875	john.sullivan@leerink.com
<b>Associate Director of Research</b>	<b>Alice C. Avanian, CFA</b>	(617) 918-4544	alice.avanian@leerink.com
<b>Healthcare Strategy</b>	<b>John L. Sullivan, CFA</b>	(617) 918-4875	john.sullivan@leerink.com
	<b>Alice C. Avanian, CFA</b>	(617) 918-4544	alice.avanian@leerink.com
<b>Biotechnology</b>	<b>Howard Liang, Ph.D.</b>	(617) 918-4857	howard.liang@leerink.com
	<b>Joseph P. Schwartz</b>	(617) 918-4575	joseph.schwartz@leerink.com
	<b>Michael Schmidt, Ph.D.</b>	(617) 918-4588	michael.schmidt@leerink.com
	<b>Gena Wang, Ph.D., CFA</b>	(212) 277-6073	gena.wang@leerink.com
	<b>Paul Matteis</b>	(617) 918-4585	paul.matteis@leerink.com
	Jonathan Chang, Ph.D.	(617) 918-4015	jonathan.chang@leerink.com
	Richard Goss	(617) 918-4059	richard.goss@leerink.com
<b>Life Science Tools and Diagnostics</b>	<b>Dan Leonard</b>	(212) 277-6116	dan.leonard@leerink.com
	Justin Bowers, CFA	(212) 277-6066	justin.bowers@leerink.com
	Kevin C. Chen	(212) 277-6045	kevin.chen@leerink.com
<b>Pharmaceuticals/Major</b>	<b>Seamus Fernandez</b>	(617) 918-4011	seamus.fernandez@leerink.com
	Aneesh Kapur	(617) 918-4576	aneesh.kapur@leerink.com
<b>Specialty Pharmaceuticals</b>	<b>Jason M. Gerberry, JD</b>	(617) 918-4549	jason.gerberry@leerink.com
	Derek C. Archila	(617) 918-4851	derek.archila@leerink.com
<b>Medical Devices, Cardiology &amp; Orthopedics</b>	<b>Danielle Antalffy</b>	(212) 277-6044	danielle.antalffy@leerink.com
	Puneet Souda	(212) 277-6091	puneet.souda@leerink.com
	<b>Richard Newitter</b>	(212) 277-6088	richard.newitter@leerink.com
	Ravi Misra	(212) 277-6049	ravi.misra@leerink.com
<b>Healthcare Services</b>	<b>Ana Gupte, Ph.D.</b>	(212) 277-6040	ana.gupte@leerink.com
<b>Healthcare Technology &amp; Distribution</b>	<b>David Larsen, CFA</b>	(617) 918-4502	david.larsen@leerink.com
	Christopher Abbott	(617) 918-4010	chris.abbott@leerink.com
<b>Digital Health</b>	<b>Steven Wardell</b>	(617) 918-4097	steven.wardell@leerink.com
<b>Sr. Editor/Supervisory Analyst</b>	<b>Mary Ellen Eagan, CFA</b>	(617) 918-4837	maryellen.eagan@leerink.com
<b>Supervisory Analysts</b>	Robert Egan		bob.egan@leerink.com
	Amy N. Sonne		amy.sonne@leerink.com
<b>Editorial</b>	Cristina Diaz-Dickson	(617) 918-4548	cristina.diaz-dickson@leerink.com
<b>Research Associate</b>	Carmen Augustine	(212) 277-6012	carmen.augustine@leerink.com

**New York**  
299 Park Avenue, 21<sup>st</sup> floor  
New York, NY 10171  
(888) 778-1653

**Boston**  
**One Federal Street, 37<sup>th</sup> Floor**  
**Boston, MA 02110**  
**(800) 808-7525**

**San Francisco**  
201 Spear Street, 16<sup>th</sup> Floor  
San Francisco, CA 94105  
(800) 778-1164