

Life Sciences Technology

February 4, 2015

Price:	\$21.00
Fair Value Estimate:	\$25.00
52-Week Range:	\$11.00 - \$24.50
Market Cap (MM):	\$421
Shr.O/S-Diluted (mm):	20.0
Average Daily Volume:	47,145
Book Value:	\$4.96
Yield:	0.0%
Cash/Share:	\$(7.61)
FCF Yield:	(37.3)%
Debt/Cap:	18%

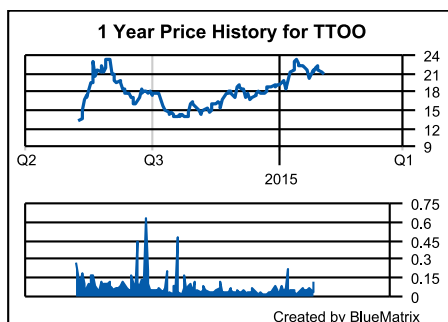
FYE: Dec	2014E	2015E	2016E
EPS:	\$(3.60)E	\$(2.10)E	\$(1.50)E
Prior EPS:	NC	NC	NC
Consensus	NM	-3.39	-1.92
P/E Ratio:	NA	NA	NA

Quarterly EPS:

Q1	\$(4.90)A	\$(0.49)E	NA
Q2	\$(5.03)A	\$(0.51)E	NA
Q3	\$(0.65)A	\$(0.54)E	NA
Q4	\$(0.46)E	\$(0.55)E	NA

Quarterly Revenue (M):

Q1	\$0A	\$0E	NA
Q2	\$0A	\$0E	NA
Q3	\$0A	\$1E	NA
Q4	\$0E	\$1E	NA
Year:	\$0E	\$2E	\$33E



T2 Biosystems, Inc.

(TTOO) - NEUTRAL

Canon Deal Opens \$700m Lyme Disease Mkt

PORTFOLIO MANAGER BRIEF

T2 announced a collaboration with Canon US Life Sciences to develop a novel test panel to rapidly detect Lyme disease. While still in early stages, T2's management is pinpointing a significant unmet clinical need, engaging in a JV to externally fund the R&D costs, and expanding the company's addressable market potential from \$3.0 billion to \$3.7 billion. A \$700-850 million market, Lyme could represent a large incremental opportunity for T2.

ANALYST NOTES

- TTOO's opportunity: Though likely a 2017-2018+ revenue story, we believe that T2's novel NMR technology has the potential to change the treatment paradigm and reduce the overall cost burden of Lyme disease on the US healthcare system. In an estimated 20-30% of the 300,000 cases per year in the US, patients do not exhibit the typical bull's-eye rash and/or IgM and IgG antibodies. Because patients don't exhibit symptoms until weeks-to-months after the tick bite, this population likely won't be identified until they are in the disseminated or late stage. The later the intervention, the higher the overall costs, and by some estimates 12x for a late stage patient (\$20,000 in 2012 dollars) compared to an early stage patient according to a study conducted by Dr. Zhang of the CDC.
- Current Methods: Testing for Lyme disease is presently dominated by antibody-based (serology) tests. Estimates point to as high as 98% of the 2.4 million tests (US) performed annually are antibody-based. The CDC currently recommends a two-tiered testing approach: an ELISA, followed by a confirmatory Western blot. The enzyme-linked immunoassay (ELISA) is a blood test that detects antibodies (IgG and IgM), not the Lyme disease bacterial strain. For positive or indeterminate samples, Western blot tests are ordered to ensure specificity.
- Limitations: There are significant limitations to the current testing methods: 1) tests cannot detect early (localized) infection; 2) some patients never develop antibodies so they always test negative despite having the disease; and 3) clearance of bacteria post-infection is difficult to detect because antibody levels can stay positive for years. Rapidly identifying active infections within hours vs. weeks and bacteria clearance are two major unmet needs that T2's NMR platform has the potential to address. According to a study released in the September issue of Clinical Infectious Diseases, two-tiered testing had a localized sensitivity of 37% (localized is often characterized as 3-30 days after bite) vs. 87% for patients with disseminated disease (weeks to months after bite).

- Estimates Costs: Per the same study in Clinical Infectious Diseases, the estimated annual lab services cost of Lyme disease on the total US healthcare system is \$492 million. Oxford Immunotec (NR) estimated the global TAM to be roughly 7.6 million patients, or \$700-850 million per year (US: 2.4 million tests, \$150-200 per; Europe: 2.2 million tests, \$75-100 per; China: 3 million tests, \$50-65 per). These figures do not include productivity losses associated with physical and mental impairment, the derivative costs incurred by the healthcare system due liberal prescription of antimicrobial agents, nor the five fold increase in annual doctor visits for Lyme disease patients. In a study released in PeerJ, 42% of patients reported to have stopped working as a result of their impairments (24% received disability) and another 25% changed the nature of their work or reduced their work hours.
- Competition: The serology-based testing market is currently very saturated. There are 28 companies with FDA approved tests including, BioMerieux, Abbott, Baxter, and Bio-Rad. Furthermore, Oxford Immunotec, among others, is exploring a T cell-based diagnostic to measure stimulated antigen-specific T cells. Some studies suggest that T cell response to a Lyme infection could be within one-to-two weeks after bite.

IMPORTANT DISCLOSURES

Research Analyst Certification

I, Paul Knight, the Primarily Responsible Analyst for this research report, hereby certify that all of the views expressed in this research report accurately reflect my personal views about any and all of the subject securities or issuers. No part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views I expressed in this research report.

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T2 Biosystems, Inc. currently is, or during the past 12 months was, a Janney Montgomery Scott LLC client. Janney Montgomery Scott LLC, provided investment banking related services.

Janney Montgomery Scott LLC managed or co-managed a public offering of securities for T2 Biosystems, Inc. in the past 12 months.

Janney Montgomery Scott LLC received compensation for investment banking services from T2 Biosystems, Inc. in the past 12 months.

Janney Montgomery Scott LLC intends to seek or expects to receive compensation for investment banking services from T2 Biosystems, Inc. in the next three months.

The research analyst is compensated based on, in part, Janney Montgomery Scott's profitability, which includes its investment banking revenues.

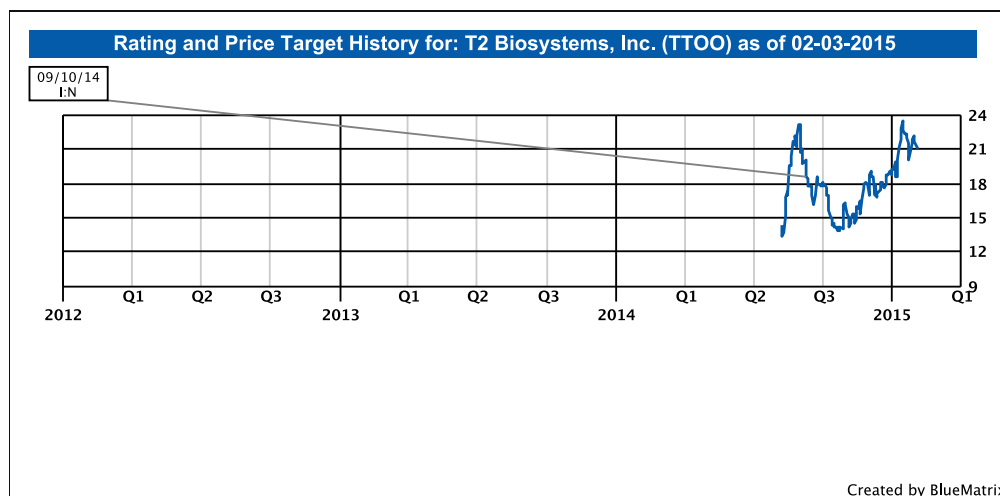
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BUY: Janney expects that the subject company will appreciate in value. Additionally, we expect that the subject company will outperform comparable companies within its sector.

NEUTRAL: Janney believes that the subject company is fairly valued and will perform in line with comparable companies within its sector. Investors may add to current positions on short-term weakness and sell on strength as the valuations or fundamentals become more or less attractive.

SELL: Janney expects that the subject company will likely decline in value and will underperform comparable companies within its sector.

Price Charts



Janney Montgomery Scott Ratings Distribution as of 12/31/14

Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [B]	138	51.30	15	10.87
NEUTRAL [N]	131	48.70	5	3.82
SELL [S]	0	0.00	0	0.00

*Percentages of each rating category where Janney has performed Investment Banking services over the past 12 months.

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