September 1, 2014

MARKET PERFORM

Reason for report:

INITIATION

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

Justin Bowers, CFA
(212) 277-6066
Justin.Bowers@Leerink.com

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

LEERINK

T2 BIOSYSTEMS, INC.

Compelling Opportunity, Priced Accordingly

• **Bottom Line:** We are initiating coverage of TTOO with a Market Perform rating and $23.50 price target. While we are compelled by TTOO's value proposition in potentially large markets with high unmet need, we consider its current stock price and premium multiple to fairly balance these considerations with uncertainties over its revenue ramp.

• **T2MR technology solves challenges inherent in other diagnostic technologies.** TTOO's proprietary magnetic resonance testing technology (T2MR) conveys several advantages relative to alternative biochemical testing technologies. The technology can: 1) detect a wide variety of diagnostic targets, 2) operate without up-front sample purification, and 3) yield result with challenging samples. It is also remarkably simple to use.

• **Applications of the technology platform are potentially broad.** 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.

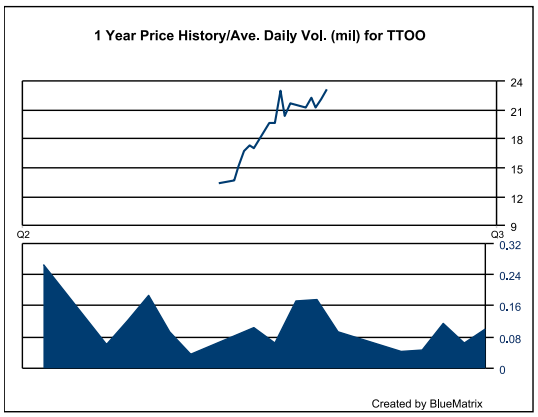
• **First products target potentially large markets with significant unmet need.** We believe it defensible to view TTOO's opportunity in sepsis diagnostics, direct from blood, as a $2B+ market in the U.S., the largest market opportunity in infectious disease diagnostics.

• **Strong clinical data de-risks the story.** The efficacy of TTOO's technology is supported by multiple peer-reviewed papers as well as a large, successful clinical trial for its T2Candida test.

• **Heightened focus on anti-infective stewardship and hospital-acquired conditions a tailwind.** TTOO efforts align with industry efforts to promote antibiotic stewardship and reduce the incidence of hospital-acquired infections.

• **Uncertainty over revenue ramp the greatest risk.** This uncertainty is a function of unknowns on the market opportunity for a novel product as well as the adoption curve. Additionally, the competitive environment for sepsis diagnosis continues to evolve, and TTOO's products are subject to development and regulatory risks.

Key Stats:	**(NASDAQ:TTOO)**
S&P 600 Health Care Index:	**1,326.92**
Price:	**$23.21**
Price Target:	$23.50
Methodology:	~8x Sept-17 TTM revs, discounted 1yr back at ~20% rate
52 Week High:	$24.50
52 Week Low:	$11.00
Shares Outstanding (mil):	20.0
Market Capitalization (mil):	$464.2
Book Value/Share:	$3.02
Cash Per Share:	$3.37
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
2013A	0.0	0.0	0.0	0.0	0.0	--	--	--	--	($8.69)	NM
2014E	0.0A	0.0	0.0	0.0	0.0	($2.88)A	($5.16)	($0.65)	($0.48)	($3.53)	NM
2015E	--	--	--	--	$3.4	--	--	--	--	($2.06)	NM
2016E	--	--	--	--	$36.5	--	--	--	--	($1.90)	NM

Source: Company Information and Leerink Partners LLC Research
Revenues in $MM. GAAP EPS presented. IPO 8.7.14.

INVESTMENT THESIS

We are initiating coverage of Lexington, MA-based T2 Biosystems (TTOO) with a Market Perform rating and $23.50 price target. T2 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 submitted an application to the FDA 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, yet consider the 110% appreciation of its stock price since IPO to fairly balance the risks and opportunities at this point.

INVESTMENT POSITIVES

Unique Technology Platform with Broad Application

T2MR technology solves challenges inherent in other diagnostic technologies. TTOO's proprietary magnetic resonance testing technology (T2MR) conveys several advantages relative to alternative biochemical testing technologies. The technology enables TTOO to detect a wide variety of analytes (i.e., targets) including nucleic acids, proteins, and small molecules, without need for the upfront purification required by other molecular testing technologies. Additionally, because the detection does not depend on the use of light, T2MR tests can be effectively performed on opaque or otherwise challenging samples. Finally, the testing device can be designed in a remarkably simplified fashion, enabling ease of use without the need for complex microfluidics, pumps, valves, and other complexities inherent in existing cartridge-based molecular platforms.

Applications of technology platform are potentially broad. 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. In addition to its initial target markets of sepsis pathogens and hemostasis, we could envision applications for T2MR in virology, oncology, food safety, and environment testing.

First products target potentially large markets with significant unmet need. While assessing the size of a novel diagnostics market is inherently a challenge, we believe it defensible to view TTOO's opportunity in sepsis diagnostics, direct from blood, as a $2B+ market in the U.S., the largest market opportunity in infectious disease diagnostics. The severity of the clinical condition, benefits of a rapid test result (sepsis is a condition in which hours matter), and downstream cost savings from reduced anti-infective usage and reduced length of stay all align to enable this opportunity.

Strong clinical data de-risks the story. The efficacy of TTOO's technology is supported by multiple peer-reviewed papers as well as a large, successful clinical trial for its T2Candida test. Thus, we believe the story de-risked from a technology point of view, as we know the T2MR technology works both analytically and clinically. We view this as a distinguishing feature between TTOO and comparably-staged stories in life science tools and diagnostics, both past and present.

Heightened focus on anti-infective stewardship and hospital-acquired conditions a tailwind. The Centers for Disease Control (CDC) in the U.S. states that as much as 30-50% of all antibiotics prescribed in U.S. acute care hospitals are unnecessary or inappropriate. The CDC has recently advocated that all hospitals adopt an antibiotic stewardship program and has teamed up with the American Hospital Association to help hospitals start these programs. We believe TTOO's value proposition is aligned with this focus on improved anti-infective stewardship, as its tests could help better direct anti-infective therapy for septic patients. Additionally, immediate domestic concerns of growing healthcare costs have driven the government to make cost-saving reforms by financially incentivizing hospitals to provide better care. For example, in accordance with the Affordable Care Act's (ACA) Hospital Acquired Condition (HAC) Reduction Program, beginning in FY2015, hospitals scoring in the top quartile for the rate of HACs (i.e., those with the poorest performance) will have their Medicare inpatient payments reduced by 1%. Similarly for Medicaid, the ACA ceases federal payments to hospitals for HAC-related costs and enforces payment penalties for hospital readmissions that are considered avoidable. Efforts to combat bacterial or fungal infections, often contracted within the hospital, could benefit from these provisions.

INVESTMENT RISKS

Revenue Ramp is the Greatest Uncertainty

Size of ultimate market opportunity for T2's products in sepsis is difficult to discern. While we see formidable strength in the TTOO platform, it is inherently difficult to estimate a market, in this case, the market for targeted fungal and bacterial tests directly from blood specimens, that doesn't yet exist. We'll have a much better ability to size this market once the products have been commercialized for a couple of years and we have a better feel for how they are used in clinical practice. For now, we consider a U.S. market opportunity for TTOO's sepsis tests of $1.9B - $2.3B readily defensible, though the confidence interval around this range is wide on both the upside and downside.

Adoption curve is a question. This consideration is similar to the prior one, though specifically addresses the uncertainty over the rate at which TTOO's products penetrate the available opportunity. We have several precedent product adoption curves in diagnostics to inform our thinking here. None are perfect analogies but the adoption curve for methicillin-resistant staph aureus (MRSA) testing is a pretty good proxy, in our view. We expect the sale of TTOO's products will be somewhat complex and involve buy-in from multiple different constituencies in the hospital, especially when one considers that the upfront costs of its products and downstream cost savings will accrue to different economic silos within a hospital.

Competitive environment in sepsis continues to evolve. The competitive environment in sepsis diagnostics is not stagnant. Existing companies are improving their products and newer entrants have shown an interest in the space. While TTOO's focus on sepsis diagnosis directly from patient blood samples is relatively unique, improvements downstream from the blood sample in the diagnostic process could impact providers' perception of TTOO's relative economic value. For example, the economic advantage of its 3 – 4 hour test results might look different if alternative processes enabled results in 1 – 2 days rather than 2 – 5 days. That said, sepsis is a market where hours matter, so we believe the value offered by direct testing should be secure.

While others can and will target the market for direct testing, TTOO should enjoy first mover advantage in the U.S.

Products are subject to regulatory uncertainty. This past May, TTOO submitted de novo 510(k) premarket applications for its lead products, T2Candida and the associated T2Dx instrument, to the FDA. While we feel confident that these products will be cleared, the regulatory process is inherently uncertain. Commercialization in the U.S. is entirely dependent on FDA clearance.

Pipeline development risk both in and outside of initially identified applications. While we consider TTOO's Candida test development de-risked, the company still faces development risks for its bacteria panel and hemostasis test, the latter which also requires the development of a new instrument, T2Stat. The company plans to initiate clinical trials for its bacteria test and hemostasis test in 2H 2015 and 1H 2016, respectively.

COMPANY PROFILE

Platform Technology Play

TTOO is an early stage company that has developed and plans to market a unique detection technology with potentially a broad range of applications. The company has developed a bench-top instrument called T2Dx and is developing a compact, fully integrated instrument called T2Stat. TTOO has initially focused its development efforts on acute diagnostics, specifically sepsis and hemostasis, and submitted an application to the FDA for its Candida test in May 2014. Potential future applications of the technology include other areas of diagnostics, environmental testing, food safety, and industrial testing.

TTOO was founded in 2006 and has since devoted much of its time and resources to developing its T2MR technology. The company is headquartered in Lexington, MA where it has a 12,500 square foot office and a 7,600 square foot lab. The 6,500 square foot manufacturing facility where tests and instruments are produced is located in Wilmington, MA. As of July 2014 T2 had 68 full-time employees of which 24 are in operations, 29 in research and development, 11 in general and administrative and 4 in sales and marketing.

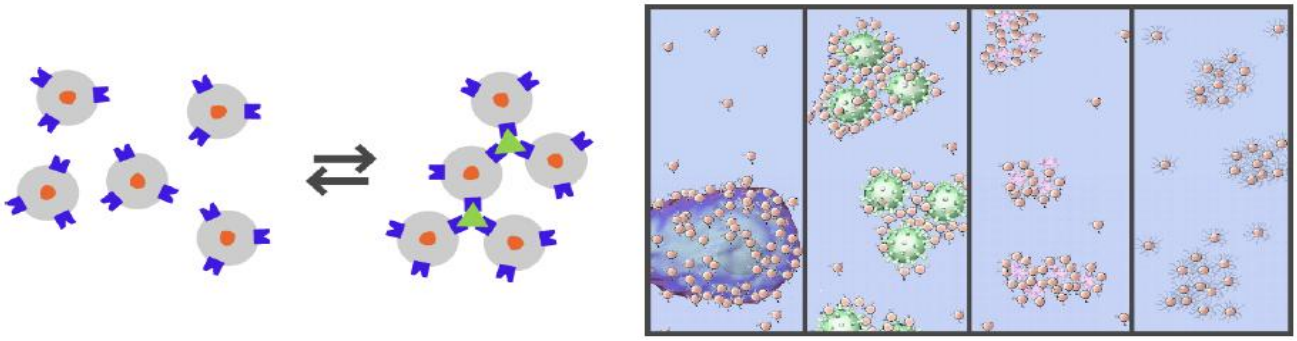
TECHNOLOGY OVERVIEW

T2MR is Unique in the Diagnostic Field

T2MR is a unique diagnostic tool that 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, an event TTOO can measure with its device, which is essentially a mini-nuclear magnetic resonance (NMR) detector that is automated and robust enough for diagnostic use.

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 figure below illustrates the process of nanoparticle clustering to detect analytes of interest.

Principle of T2MR Detection with Magnetic Nanoparticles

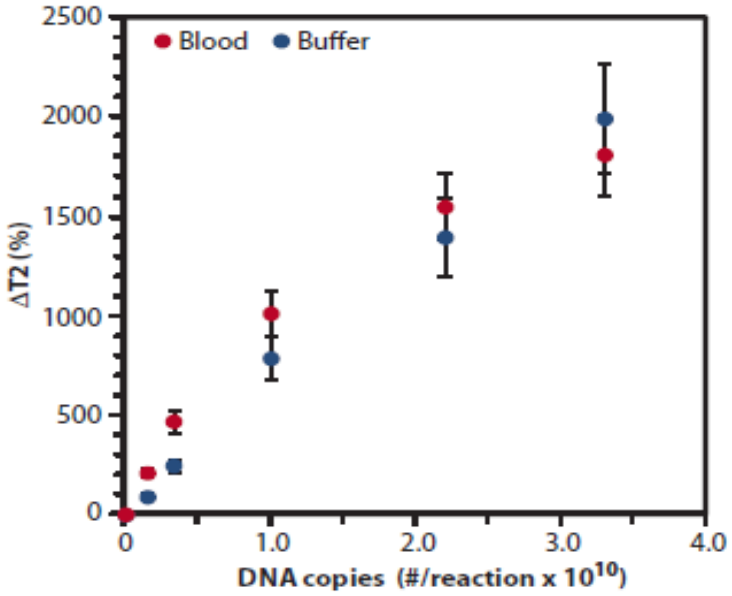


Source: Lowery et al. "Single-Coil, Multisample, Proton Relaxation Method for Magnetic Relaxation Switch Assays", Analytical Chemistry, Feb 2008

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 of 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.

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.

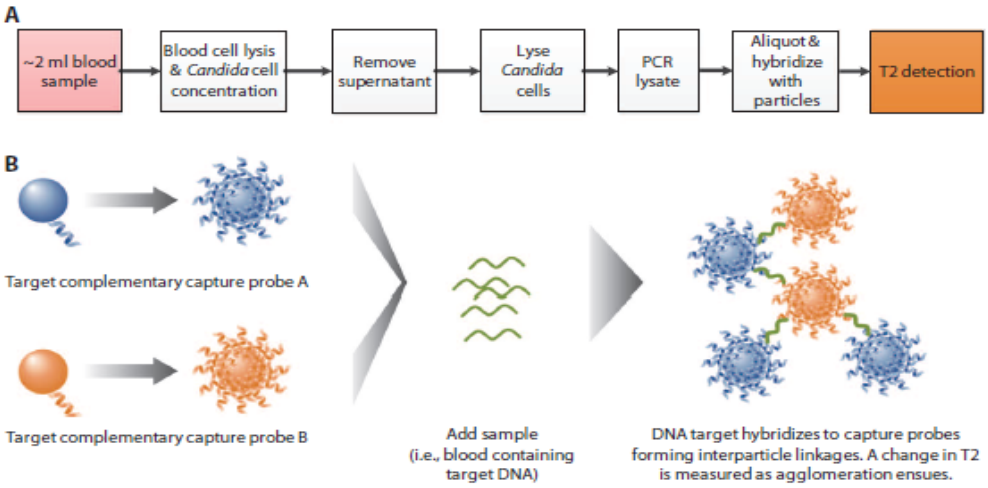
T2MR Diagnostic Instrument Overview

T2Dx is the company's first bench-top instrument utilizing T2MR technology. Patient samples are put directly into a test cartridge containing reagents and inserted into T2Dx, where the diagnostic panel is run on the specimen in as little as 3 hours. This platform will run tests for Candida and bacteria, requiring amplification of DNA particles to identify the presence of pathogens and identify the species present. The following figures illustrate both the form factor of the T2Dx instrument as well as the workflow for the tests in which nucleic acid is the target.

T2Dx Instrument

Source: T2 Biosystems

Assay Workflow for Detection of Candida with T2MR



Source: Neely et al. "T2 Magnetic Resonance Enables Nanoparticle-Mediated Rapid Detection of Candidemia in Whole Blood", Science Translational Medicine, April 2013

T2Stat is the second instrument under development and will run hemostasis-specific panels. Because magnetic resonance can detect changes in viscosity in blood, there is no need for the initial lysis and PCR steps in T2Dx. T2 relaxation signals will vary based on clot formation, stabilization or dissipation of blood and thus T2MR can track the stages of hemostasis over time. The following figure illustrates the form factor of the T2Stat instrument.

T2Stat Instrument

Source: T2 Biosystems

We believe TTOO's technology can ultimately be migrated to plate-based or other higher throughput, non-cartridge-based formats in the future as needed.

PRODUCT APPLICATIONS

T2MR Has Applications across Several Markets

Leveraging T2MR technology, TTOO is developing a variety of panels for diagnosis of Candida infection, bacterial infection, and impaired hemostasis. Potential future applications of the MR technology include diagnostics for infectious disease and oncology, as well as applications outside of healthcare such as environmental and food safety testing. Below is a diagram of the instruments and diagnostics currently in development with expected timeline for FDA filing.

Product Candidate Pipeline Currently in Development

Development	Validation	Pivotal Trial	Expected FDA Filing
Instruments			
T2Dx (infectious disease)			Submitted on May 27, 2014
T2Stat (hemostasis)		1H 2016	2017
Diagnostics			
T2Candida (sepsis)			Submitted on May 27, 2014
T2Bacteria (sepsis)		2H 2015	2016
T2HemoStat (hemostasis)		1H 2016	2017

Source: T2 Biosystems

TTOO's first two products target sepsis, an illness in which the body has a severe, inflammatory response to a bacterial, fungal, or viral infection. It is a life-threatening condition to which individuals with weakened immune systems or chronic illnesses are highly susceptible. Sepsis can lead to shock and organ failure, and is a leading cause of death in the United States.

Candida Infections Deadly, Existing Diagnostics Suboptimal

Candida is the most common fungal infection causing sepsis, responsible for approximately 10% - 20% of all sepsis cases in the U.S. It is the 7th leading cause of hospital-acquired infections, accounting for ~6% of total. Mortality rates for Candida infection hover around 40%, largely due to slow turnaround time to correctly diagnose infection. Clinical studies have shown that mortality rates for Candida infection can be reduced from 40% to 11% if targeted therapy is administered within 12 hours of symptoms, and literature suggests that mortality increases 6-10% each hour a sepsis patient is not given the right medication.[1]

There are ten strains of Candida found in humans, five of which cause 95% of Candida infections – C. albicans, C. tropicalis, C. glabrata, C. krusei and C. parapsilosis. Patients with Candida infection stay on average 40 days in the hospital and 9 days in the ICU, with patient costs amounting to ~$130,000 over the course of treatment. Because of the high mortality rate and high cost, prophylactic or empiric antifungal treatments are often administered before infection is diagnosed in patients at high-risk for Candida infection.[1] Caspofungin and Micafungin are popular treatment regimens but can run ~$500 per patient, a high cost given that physicians often initiate treatment before culture results confirm Candida presence. In addition, early courses of treatment are often azole-based, and azoles are widely known to be ineffective in glabrata and other strains of Candida.

For patients suspected of Candida infection, the typical course of treatment is antifungals followed by or coincident with a blood culture, growth of the organism on agar, and then finally species identification and susceptibility test to determine optimal course of treatment – a process which can take 2 – 5 days. The traditional process is not only slow but imprecise, as sensitivity of blood culture for Candida is only ~50%. Between the relatively high prevalence of Candida, the high cost of empiric and prophylactic treatment, and emerging concern over antibiotic resistance, there is a need for faster and more cost-effective diagnosis to stratify patients that need care and those who do not, and reduce the time to treatment for those who are in need of care.

T2Candida Offers Faster Results, Better Clinical Performance; Supported by Strong Data

T2Candida and the T2Dx instrument can identify the presence or absence of Candida and which of three groups of species that the infection falls under in as little as ~3 – 4 hours. This speed enables physicians to (1) make informed decisions about antifungal treatment to cut back on unnecessary empiric treatment on the first day of symptoms and (2) identify Candida species to tailor antifungal treatment to the specific strain, particularly for strains that are not responsive to azoles. T2Candida is not a replacement for blood culture but rather a first-in-line tool to enable more informed and more efficient action.

TTOO has completed a clinical pivotal trial for T2Dx and T2Candida to evaluate the sensitivity and specificity of Candida diagnosis. The trial consisted of two arms; the first, a 1,501-sample study of patients with possible Candida infections; the second, a 300-sample study with 250 contrived positive Candida infections and 50 uninfected samples. Sensitivity and specificity were found to be 91.1% and 99.4%, respectively, in aggregate across both arms. The limit of detection (LoD) was 1-3 colony-forming units (CFU)/mL – an impressive figure as compared to detection limits of 100-10,000 CFU/mL in blood culture.

Additionally, the ~4 hour average time to result for T2Candida represented a dramatic improvement over culture in the clinical study; culture took on average ~121 hours to yield a result.

In addition to the pivotal clinical trial, TTOO has engaged in a number of sponsored, co-authored studies with third-party institutions which provide additional support of the technology as compared to standard diagnostic treatment:

- ***Massachusetts General Hospital:*** In partnership with Harvard Medical School, Mass General conducted a clinical trial in April 2013 testing efficacy of T2Dx and the T2Candida panel in detecting known concentrations of Candida species in healthy blood samples. An additional evaluation of the T2Dx instrument was performed in unhealthy patients for which diagnosis was unknown and the results compared to blood culture. All five species of Candida were detected in the control blood samples, with percent detection range depending on the concentration in blood, and 100% detection across all species at a concentration of 3 CFU/mL. In tests of T2Dx against blood culture, there was a 97.8% positive agreement rate and a 100% negative agreement rate.

- ***University of Houston:*** A second study published later in 2013 compared efficacy of the T2Candida assay against Becton Dickinson's BACTEC 9050 blood culture system in detecting known concentrations of five Candida strains. Both systems were able to detect four species of Candida at 100% detection; however BACTEC could not detect any of the known cases of C. glabrata while TTOO detected this strain at 100%. The time to detection was significantly lower in T2Candida, ranging from 3.57 to 3.85 hours versus BACTEC's 30.58 to 106 hours. Notably, this study concluded that T2Candida cannot replace the need for later blood culture because it does not provide susceptibility results, but has the potential to be useful as a supplement.

TTOO submitted de novo 510(k) applications for T2Dx and T2Candida on May 27, 2014; we anticipate U.S. commercial launch of both products in 1H15.

T2Candida Could Prove Cost Effective on Reduction in Antifungal Use Alone

Importantly, in a world where the cost effectiveness of new diagnostic tests is increasingly a paramount consideration, TTOO's Candida test could pay for itself in the reduction of unnecessary antifungal use alone. A study published in June by the University of Houston suggests that T2Candida could save a hospital $700k - $1.4M annually per 5,000 patients from fewer doses of echinocandins, a prominent class of drugs used to treat candida infection. TTOO plans to initially

target those hospitals with 5,000 or more patients annually at risk for candida infection. That TTOO's test could potentially be cost effective even without consideration for reduction in length of stay is compelling, though the test should enable that benefit as well. A study published in 2009 in the American Journal of Respiratory and Critical Care Medicine suggested that providing targeted antifungal therapy within 24 hours of the presentation of symptoms decreased the length of hospital stay by ~10 days and decreased the average cost of care by ~$30,000 per patient. The combination of reduced anti-fungal use and reduced length of stay could yield a savings of ~$800 per test.

T2Bacteria Would Serve an Even Larger Patient Population

While fungal cells like Candida are seen in ~20% of severe sepsis cases, the most common cause of sepsis is definitively bacteria, with Gram positive and negative strains detected in 45%-80% and 30%-62% of severe cases, respectively. Mortality rates are similarly high and increase with every hour prior to appropriate therapeutic intervention (after hypotension onset for 6 hours). As a result, most blood infections are empirically treated with a first-line broad-spectrum antibiotic. However, 40% of these patients will not respond favorably in the next 3 to 5 days and require a different or more directed treatment. More generally, the practice of empiric antibiotic use can breed resistance.

The existing diagnostic work-up for suspected bacterial infection is similar to that of Candida, whereby blood samples are initially cultured before further tests are conducted for downstream species identification and susceptibility. The entire diagnostic process can take days.

TTOO is developing a T2Bacteria test, which detects the major bacterial pathogens associated with sepsis that are frequently not covered by first-line antibiotics. This test will also run on T2Dx instrument. Similar to the Candida panel, we believe T2Bacteria will generate results as quickly as 3 – 4 hours after a blood draw as compared to the days for traditional blood culture-dependent methods. Studies have shown that therapy administered within 48 hours of blood collection can decrease the mortality rate of some bacterial causes of sepsis by as much as 26%.

TTOO demonstrated the feasibility of its T2MR technology to detect bacterial targets in posters at the American Society for Microbiology meeting in May 2014. The company plans to commence clinical trials on T2Bacteria in the second half of 2015, submit its application to the FDA in 2016, and commercialize the product in 2017. We believe it likely that, after successful approval of T2Candida under the de novo 510(k) application, that the T2Bacteria test will follow a 510 (k) pathway as well.

Acute Market Need for Better Hemostasis Test; T2HemoStat a Novel Offering

Thrombosis and bleeding are among the foremost causes of morbidity and mortality; impaired hemostasis disrupts the formation of blood clots in 25% of trauma patients – over 3M patients per year in the US. Mortality rates in trauma patients with impaired hemostasis are as high as 45% but can be reduced to 19% with rapid delivery of therapy.[1]

Current diagnostic tests are outdated and only provide a partial picture of the hemostatic process. These tests measure clinical components of hemostasis (e.g., prothrombin time (PT), activated partial thromboplastin time, platelet aggregation) and/or mechanical clot strength. Legacy methods do not identify all bleeding disorders, and provide little insight into the risk of thrombosis, lack sensitivity toward measuring fibronolytic activity, and require several pieces of different instrumentation. A more informative, rapid test for hemostasis could both improve outcomes in a trauma setting as well as reduce costs due to more efficient utilization of scarce and expensive blood products.

The T2HemoStat panel could be such a test. The test operates using the same core technology as TTOO's infectious disease products but would be performed on an even more compact point-of-care instrument. This test can monitor the physical states of blood continuously, and measure both individual hemostatic parameters as well as integrated hemostasis. The test requires minimal blood draw from patients and only one instrument that can be used in the hospital or office – eliminating the need for specialty lab analysis – with results generated in as little as 20 minutes or less.

TTOO published a proof-of-concept study on T2HemoStat in the journal Clinical Chemistry in June 2014. This study illustrated T2MR's ability to measure hematocrit, clotting time, clot strength and platelet function, and also its ability to identify a new clot structure that has potential a novel biomarker for impaired hemostasis, findings which were published in the journal Blood. These results could be applicable not only for impaired hemostasis, but also thrombosis, the formation of clots within the blood vessel.

TTOO plans to initiate clinical trials for T2HemoStat in 1H 2016 and commercialize the product in 2017.

REIMBURSEMENT LANDSCAPE

Pathway to Payment Uses Existing DRG and CPT Codes

Reimbursement for TTOO's sepsis and hemostasis diagnostics in the U.S. will use existing codes, which will hasten receipt of payments after FDA clearance. The diagnosis and treatment of sepsis patients in the U.S. is currently reimbursed under existing diagnosis-related group, or DRG, codes. DRG codes pay providers a flat rate for acute inpatient services rendered based on the patient's diagnosis. The payment is calculated based on anticipated cost of the entire inpatient stay, and encourages cost-efficient care in that additional services are not individually reimbursed, encouraging providers to follow the most effective course of treatment to maximize their bottom-line. Thus cost efficiencies realized from adoption of TTOO's products should fall straight to the hospital's bottom line. Additionally, as we noted earlier, the heightened focus on efforts to reduce Hospital Acquired Conditions (HACs) in the Affordable Care Act (ACA) could motivate hospitals to reduce infection rates to avoid payment penalties.

Payment for T2Hemostat will likely utilize existing DRG and CPT codes and thus leverage the existing reimbursement provided for those codes.

MARKET OPPORTUNITY

ICU Patients, Cancer Ward Ready Targets

We see a ready market for TTOO's sepsis products in patients deemed to be at high risk for fungal and bacterial infections. We believe groups at high risk for Candida infection include patients in intensive care units (ICUs) as well as patients hospitalized in the oncology ward. The market for T2Bacteria should include all of these patients as well as some proportion of patients in the emergency department on whom physicians order blood cultures.

The million dollar question in our minds is how narrowly hospitals will attempt to define high risk, and subsequently stratify which patients are candidates for the test. We expect some stratification within the ICU and oncology populations will occur as hospitals attempt strike a balance between minimizing the cost and maximizing the benefit from TTOO's tests. Our diligence to better assess potential stratification protocols included extensive literature review and conversations with many in the medical field, both MEDACorp specialists and otherwise, including 11 physicians specialized in infectious disease, 3 microbiology/virology lab directors, and one pharmacy professional.

Patients commonly considered at high risk for Candida infections include those who are immunocompromised (e.g., transplant recipients, bone marrow recipients, cancer patients, especially those with very low white blood cell counts [i.e., neutropenics]) and those on IV antibiotics over an extended period. A broader definition could include any febrile (i.e., with fever) ICU patient, as well as a large proportion of hospitalized patients on chemotherapy. Taking into consideration our conversations with infectious disease physicians as well as broader definitions, we believe it defensible to consider the U.S. market opportunity for T2Candida test somewhere between 3.5M – 4.5M tests annually. This range assumes an ICU population of 7M patients per year along with 2.4M patients per year on chemotherapy, and represents the average and median estimates from our diligence on how narrowly candidates for TTOO's Candida test could be defined. Assuming a $200 average selling price (ASP) (TTOO has communicated the ASP is likely to be between $150 and $250), the U.S. market for T2Candida would range from $700M - $900M, which would rank it as one of the largest markets in infectious disease diagnostics.

Larger still is likely to be the market for T2Bacteria. Our diligence suggests that all of the patients who are candidates for T2Candida would also be candidates for T2Bacteria. Additionally, some proportion of patients who present at an emergency department and on whom doctors order a blood culture test would be candidates. The 2011 estimate of ED visits in the U.S. where a blood culture was ordered was ~5.2M, which represented an increase of ~14% annually from ~3.1M in 2007.[1] If we assume half of the 5.2M patients are candidates for T2Bacteria (which conservatively assumes no market growth from 2011), then the U.S. market opportunity for T2Bacteria would be ~6M – 7M tests annually, or $1.2B - $1.4B at $200 per test.

Of course, market estimates pre product launch in a new market are highly preliminary and subject to uncertainty. Once these products have been on the market for a couple of years, we'll be better able to extrapolate market size based on early use in the field.

Within the hemostasis market, for trauma alone, there are >3M patients in the U.S. who present with symptoms of impaired hemostasis annually. The typical patient is tested at least 3 times

during a hospital visit, which results in a market of at least 9M diagnostic tests annually. At an ASP of $35 - $50 per test, the U.S. market opportunity for T2HemoStat could be between ~$300M and $450M annually.[1]

KEY FORECAST ASSUMPTIONS

Proxy Ramp Curves Support Strong Revenue Growth

While the size of the market for TTOO's products is uncertain, the slope of the adoption curve, i.e., the portion of the market captured in any given year, is also an unknown. However, we have several previous product ramps to use as analogies for potential outcomes. The following table illustrates some diagnostic product ramp curves over the first 5 years post launch.

Adoption Curve for High-Profile Diagnostics, First 5 Years

Test / year post launch	1	2	3	4	5
HPV	1%	1%	2%	2%	3%
MRSA - molecular	4%	8%	13%	16%	17%
C. diff - molecular	3%	18%	34%	50%	61%
Microbial ID - Mass spec	0%	2%	4%	9%	18%
AlloMap	1%	6%	8%	11%	16%
BCa Prognosis	0%	2%	9%	21%	36%
BRCA	0%	0%	1%	1%	2%
Median	1%	2%	8%	11%	17%

Source: Leerink Partners; uncommon abbreviations: HPV = human papillomavirus, MRSA = methicillin-resistant Staphylococcus aureus, C. diff = Clostridium difficile, BCa = breast cancer, BRCA = breast cancer gene

All of these tests have their pro's and con's when considering their merits as proxies for TTOO's products. The molecular C. diff adoption curve was very steep, but that product line replaced existing testing modalities widely considered inadequate, and in most instances did not require an incremental capital purchase. Similarly, microbial identification by mass spec replaced existing testing modalities, though adoption was likely hindered by the need to justify an initial capital investment of ~$200k. The capital consideration should be less pronounced for TTOO. We expect most T2Dx placements will be reagent rental (i.e., leased), and in cases where a lab decides to purchase, the capital outlay will be more modest (we're modeling an ASP of $60k).

The HPV, AlloMap, BCa prognosis, and BRCA markets are not ideal proxies because all of these tests represented new markers or signatures for the biology of a condition. Candida and bacteria identification is not new biology, so TTOO should not need to same heavy lifting to convince the community of the relevance of its test results.

MRSA is probably the best analogy for the forecasting the ramp of TTOO's sepsis products, and we've used it to anchor our model. Our T2Candida forecast assumes a U.S. market opportunity of 3.5M tests annually, and we believe TTOO can achieve 13% penetration of this market by 2017, the third year of the product launch. This assumption underlies the bulk of our $111M revenue forecast for 2017. We don't expect T2Bacteria and T2HemoStat will launch until 2017, and thus have assumed relatively immaterial contribution from these tests in the early days.

We assume that TTOO achieves our 2017 revenue forecast by converting a sizeable portion of the top 450 hospitals in the U.S. by 2017. In total, we expect TTOO will exit the year with >300 commercial accounts. We also assume that most T2Dx instruments are placed under reagent rental, and thus our forecast is largely driven by test rather than instrument sales.

Additionally, we believe the high test ASPs, as well as simple cartridge and instrument design, should enable TTOO to achieve gross margins of 70%+ at scale. Finally, the operating expense increases we've forecasted reflect both TTOO's desire to expand sales and marketing aggressively to promote sales growth, as well as invest heavily in R&D to pursue a broad range of applications for T2MR.

COMPETITIVE LANDSCAPE

Competitive Landscape Continues to Evolve

The landscape for sepsis diagnosis, historically a sleepy field, has seen rapid innovation in the past few years, and we expect this pace of innovation will continue for the next several years. Mass spectrometry (specifically MALDI-TOF) and polymerase chain reaction (PCR) methods have made inroads into microbial identification market, and reduced turn-around times for identification accordingly when compared to legacy identification methods from vendors like MicroScan (now part of DHR) and bioMerieux. BRKR (MP) and bioMerieux market MALDI-TOF into microbiology labs, while CPHD (MP), BioFire (a subsidiary of bioMerieux), and NSPH market PCR-based tests for bacterial identification which also offer limited antimicrobial resistance information. BioFire's test does include 5 species of Candida as well. GNMK plans to enter the multiplexed bacterial and fungal identification market with its forthcoming ePlex instrument. However, all of these technologies require upfront sample incubation/culture prior to analysis, and thus cannot match TTOO's 3 – 4 hour sample-to-result.

One company to watch in this market is AXDX, which plans to commercialize an instrument in 2016 that can perform broad-based, rapid microbial ID and anti-infective susceptibility direct from positive blood culture bottles, without the intervening plating step required in advance of organism detection by mass spec. It too, though, first requires the culture/incubation step in advance of analysis, and thus could be more complementary than competitive to TTOO. Mass spec methods continue to improve as well, and we believe susceptibility testing might be feasible on mass spec in the next 2 – 5 years.

One company that does aspire to challenge TTOO's positioning with a direct from blood technology is ABT (MP). The company has recently promoted its efforts to resuscitate its Ibis PlexID technology into a new instrument called IRIDICA, which is a combination of PCR and mass spec technology. This technology is being designed to identify hundreds of bacteria and Candida from a direct patient specimen in ~8 hours, and the company is planning a 2015 launch in Europe. Roche also markets a direct-from-blood molecular sepsis test called SeptiFast, which has been available in Europe since 2006. Our checks indicate the performance of this test is underwhelming and we do not consider it a threat to TTOO's market positioning.

There are also some upstarts pursuing the sepsis diagnostics market, including GeneWeave Biosciences and Specific Technologies.

Competition for T2HemoStat largely consists of existing hemostasis monitors. Both Haemonetics, with its TEG instrument, and Rotem market real-time hemostasis monitors.

VALUATION

Rapid Revenue Growth Justifies Premium Multiple

The following table illustrates current revenue multiples for the emerging growth tools and diagnostics peer group.

Emerging Growth Tools/Diagnostics

		Current price		Revenue estimates			Revenue growth			Mkt cap / revenue		
Company	Symbol	8/27/2014	Mkt cap	2014	2015	2016	2014	2015	2016	2014	2015	2016
Accelerate	AXDX	$20.82	$928.2	nm	nm	nm	nm	nm	nm	nm	nm	nm
BG Medicine	BGMD	0.78	26.8	3.2	8.6	13.2	(21%)	169%	53%	8.4x	3.1x	2.0x
CareDx	CDNA	9.95	115.1	26.1	29.9	41.5	18%	15%	39%	4.4x	3.9x	2.8x
Combimatrix	CBMX	2.05	22.7	8.2	12.4	17.1	28%	51%	38%	2.8x	1.8x	1.3x
Cerus	CERS	3.76	278.4	38.4	53.9	85.0	(3%)	40%	58%	7.2x	5.2x	3.3x
Cancer Genetics	CGIX	9.41	91.2	11.7	32.3	nm	77%	176%	nm	7.8x	2.8x	nm
Diadexus	DDXS	0.67	36.7	28.8	32.9	nm	15%	15%	nm	1.3x	1.1x	nm
Exact Sciences	EXAS	22.19	1,840.3	2.1	75.7	201.3	(49%)	3490%	166%	872.9x	24.3x	9.1x
Fluidigm	FLDM	26.79	754.7	115.8	148.3	182.7	63%	28%	23%	6.5x	5.1x	4.1x
Foundation Medicine	FMI	22.92	647.7	59.3	109.8	198.6	104%	85%	81%	10.9x	5.9x	3.3x
GenMark	GNMK	10.68	445.7	27.9	38.5	64.3	2%	38%	67%	16.0x	11.6x	6.9x
Cellular Dynamics	ICEL	10.86	171.2	17.4	38.1	56.3	46%	119%	48%	9.8x	4.5x	3.0x
Liposcience	LPDX	2.86	43.7	39.0	39.8	43.9	(25%)	2%	10%	1.1x	1.1x	1.0x
Nanosphere	NSPH	0.87	66.5	14.6	26.0	46.4	46%	79%	78%	4.6x	2.6x	1.4x
Nanostring	NSTG	11.41	206.1	47.6	72.3	101.3	52%	52%	40%	4.3x	2.8x	2.0x
Oxford Immunotec	OXFD	14.47	254.3	49.3	67.1	85.3	27%	36%	27%	5.2x	3.8x	3.0x
PacBio	PACB	5.38	380.0	47.3	62.8	82.4	68%	33%	31%	8.0x	6.1x	4.6x
Roka Bioscience	ROKA	11.80	208.1	7.8	23.6	39.4	258%	201%	67%	26.6x	8.8x	5.3x
Sequenom	SQNM	3.83	446.9	169.0	219.2	251.0	4%	30%	15%	2.6x	2.0x	1.8x
Trovagene	TROV	5.24	99.1	0.3	3.1	20.6	4%	1057%	562%	367.5x	31.8x	4.8x
Veracyte	VCYT	12.87	276.6	39.7	73.7	114.6	82%	86%	55%	7.0x	3.8x	2.4x
Vermillion	VRML	2.24	80.4	nm	nm	nm	nm	nm	nm	nm	nm	nm
Intrexon	XON	$20.71	$2,080.9	64.6	145.8	214.4	172%	126%	47%	32.2x	14.3x	9.7x
Median							28%	52%	48%	7.2x	3.9x	3.0x

Source: FactSet Estimates

The median emerging growth tools and diagnostics company currently trades for ~5.5x forward-twelve month revenue (an average of the 2014e and 2015e median multiples). We believe TTOO deserves a premium to the peer group due to its unique, patent-protected technology, large market opportunity, and forecast for faster revenue growth than the peer group. We consider ~8x 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 Sept-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 curve. Therefore, we apply our revenue multiple of ~8x to our revenue estimate of ~$85M for the twelve months ended Sept-17 to yield a price of $28 in two years. We discount that back at a rate of 20% to arrive at a $23.50 12-month price target.

When considering valuation on a company like TTOO, investors should also be aware of the healthy prices strategic acquirers have paid for easy to use, novel molecular diagnostics assets. BDX paid $505M for what is now its BD Max offering ($230M for GeneOhm and $275M for HandyLab), Roche paid $275M upfront ($450M including contingent incentives) for IQuum. ABT

paid ~$225M for Ibis. BioFire is also a relevant comparable transaction, though unlike these other examples, the company had meaningful revenue at the time of acquisition. bioMeriuex acquired BioFire for $485M.

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, and product development risk.

MANAGEMENT

Strong management team with a wealth of experience in diagnostics and microbiology

John McDonough, Chief Executive Officer. John McDonough has served as TTOO's President and CEO and a member of the board of directors since November 2007. From 2003 to 2007, Mr. McDonough held various positions at Cytyc, a diagnostics company focused on women's health, where he was responsible for designing and executing Cytyc's growth strategy for expanding the company from a single product company with revenue of approximately $300 million to a diverse women's health company with revenue of approximately $750 million. He led the efforts that resulted in Cytyc's acquisition by Hologic, Inc. (HOLX-OP) in October, 2007, for over $6 billion. Mr. McDonough has served in senior executive management and CEO roles in several private and public companies. He received his B.S.B.A. from Stonehill College.

Marc Jones, Chief Financial Officer. Marc Jones has served as CFO since April 2013. Previously, Mr. Jones served as CFO of Crashlytics, a mobile device software company, until its acquisition by Twitter. From January 2012 to January 2013, Mr. Jones was CFO of Fluidnet, an intravenous systems medical device company, where he led finance, administrative and operations functions. From June 2007 to August 2011, Mr. Jones was CFO of CHiL Semiconductor, a power management solutions company until its acquisition by International Rectifier. Mr. Jones received his M.S. in finance from Northeastern University and his B.S. in economics and finance from Southern New Hampshire University.

Sarah Kalil, Chief Operating Officer. Sarah Kalil has served as COO since August 2013. From August 2010 to August 2013, Ms. Kalil was COO of Interlace Medical, a women's health medical device company, which was acquired by HOLX. From April 2009 to August 2010, Ms. Kalil was President and COO of Boston Endo-Surgical Technologies, a medical device company. From 2002 to 2009, she served as Operations Director of Innovend, a medical molding company. Ms. Kalil received her B.S. in engineering from the University of Vermont.

Tom Lowery, Ph.D., Chief Scientific Officer. Dr. Thomas Lowery has served as CSO since September 2013. Since joining TTOO in February 2007 as its first employee, Dr. Lowery has held various technical leadership roles in the assay, methods, reagents and detector development programs. Prior to joining TTOO, Dr. Lowery conducted research at the University of California

Berkeley focused on developing innovative magnetic resonance based biosensors for molecular imaging. Dr. Lowery has received 31 issued patents and patent applications and has published 30 articles in top peer-reviewed journals. He received his Ph.D. in chemistry from the University of California, Berkeley and his B.S. in biochemistry from Brigham Young University.

Michael A Pfaller, M.D., Chief Medical Officer. Dr. Michael A. Pfaller has served as Chief Medical Officer since March 2014. From 2005 until he joined TTOO, Dr. Pfaller was a consultant to JMI Laboratories, managing the in vitro testing of fungal and bacterial isolates. From 1983 to 2005, he was Clinical Director of the Clinical Microbiology Laboratory at the University of Iowa. Dr. Pfaller is highly respected in the field of microbiology such that, on one of our diligence calls, the infectious disease specialist communicated that "There are KOLs, and then there's Mike." He has published over 700 articles in the peer-reviewed literature as well as 10 books in the areas of antifungal agents and resistance, epidemiology of bacterial and fungal infections, and the role of the clinical microbiology laboratory in hospital infection control. He currently serves on the editorial boards of 8 microbiology journals, as Co-Editor in Chief of the American Society for Microbiology Manual of Clinical Microbiology, 11th edition and as co-editor of the 8th edition of Medical Microbiology. Dr. Pfaller received his M.D. from the Washington University School of Medicine and his B.A. in chemistry from Linfield College.

Rahul Dhanda, Vice President, Marketing. Rahul Dhanda has served as VP of Marketing since January 2010. Prior to joining TTOO in January 2008, Mr. Dhanda worked in marketing at Boston Scientific's (MP) Urology division. Prior to Boston Scientific, Mr. Dhanda worked in business development at Interleukin Genetics, which was acquired by Alticor, Inc. Mr. Dhanda received his M.B.A. from MIT's Sloan School of Management and his B.A. from Wesleyan University.

Glenn Magnuson, Vice President, Sales. Glenn Magnuson has served as VP, Sales since November 2013. Prior to joining TTOO, Mr. Magnuson spent four years at Thermo Fisher Scientific (TMO-OP), most recently in the role of Director of Sales for the Americas. Prior to TMO, Glenn worked at Cytyc/HOLX where he held several roles, including Regional Sales Director and Senior Director of Marketing. Mr. Magnuson also spent over ten years at Abbott Diagnostics in numerous positions in sales, sales training and marketing roles. He received his B.S. in finance from Bryant University.

Steven Scampini, Vice President, Engineering. Steve Scampini has served as VP, Engineering since July 2013. Prior to joining TTOO Mr. Scampini served as a Senior Director of Product Development at Cytyc/HOLX. Prior to joining Cytyc/HOLX, Mr. Scampini served in numerous research and development roles at Philips Medical Systems. Mr. Scampini received his B.S. in electrical engineering from Rensselaer Polytechnic Institute and his M.S. in electrical engineering from California Institute of Technology.

Frédéric Sweeney, Ph.D., Senior Director, Business Development. Dr. Frédéric Sweeney has served as Senior Director of Business Development since February 2013. Prior to joining TTOO, Dr. Sweeney was Vice President of Business Development & Strategic Alliances for Tornado Spectral Systems, a commercial-stage nanophotonics and spectroscopy technology company. Dr. Sweeney also worked as part of the life sciences investment team at VenGrowth Private Equity Partners. He received his Ph.D. in molecular and medical genetics from the University of Toronto.

Footnote: *1. Source: T2 Biosystems, Inc. S-1 SEC filing, published literature including ,Garey, KW, et. Al., Clinical Infectious Diseases (2006), Morrell, M, et. Al., Antimicrobial Agents and Chemotherapy (2005), Beyda, University of Houston, Diagnostic Microbiology and Infectious Disease (2013), Aitken, University of Houston, The Annals of Pharmacotherapy (2014), and MEDACorp specialist commentary.*

TTOO Biosystems (TTOO)

Income Statement

Dan Leonard, 212-277-6116
dan.leonard@leerink.com

	2012	2013	Mar	Jun-14e	Sep-14e	Dec-14e	2014e	2015e	2016e	2017e
Revenue										
Product	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$3,375**	**$36,450**	**$111,000**
Other	19	266	0	0	0	0	0	0	0	0
Total revenue	19	266	0	0	0	0	0	3,375	36,450	111,000
COGS	0	0	0	0	0	0	0	2,531	18,225	44,400
Gross profit	19	266	0	0	0	0	0	844	18,225	66,600
SG&A	2,945	5,022	1,842	2,200	3,000	4,000	11,042	18,000	29,160	49,950
R&D	11,727	14,936	5,065	5,200	5,200	5,500	20,965	24,000	27,338	36,630
Operating income (loss)	**(14,653)**	**(19,692)**	**(6,907)**	**(7,400)**	**(8,200)**	**(9,500)**	**(32,007)**	**(41,156)**	**(38,273)**	**(19,980)**
Interest expense (income)	154	403	86	105	94	84	370	386	586	1,096
Other expense, net	(352)	515	(73)	0	0	0	(73)	0	0	0
Pretax income	(14,455)	(20,610)	(6,920)	(7,505)	(8,294)	(9,584)	(32,304)	(41,542)	(38,858)	(21,076)
Taxes	0	0	0	0	0	0	0	0	0	0
Net income	($14,455)	($20,610)	($6,920)	($7,505)	($8,294)	($9,584)	($32,304)	($41,542)	($38,858)	($21,076)
Accetion of redeemable preferred	(4,412)	(6,908)	0	0	0	0	0	0	0	0
Net income applicable to common	($18,867)	($27,518)	($6,920)	($7,505)	($8,294)	($9,584)	($32,304)	($41,542)	($38,858)	($21,076)
Basic shares outstanding	2,315	2,373	2,400	1,454	12,718	20,041	9,153	20,166	20,428	20,791
Diluted shares outstanding	2,315	2,373	2,400	1,454	12,718	20,041	9,153	20,166	20,428	20,791
EPS diluted	**($6.24)**	**($8.69)**	**($2.88)**	**($5.16)**	**($0.65)**	**($0.48)**	**($3.53)**	**($2.06)**	**($1.90)**	**($1.01)**
EPS growth										
Sales growth								nm	980.0%	204.5%
Gross margin	100.0%	100.0%		0.0%	0.0%	0.0%	nm	25.0%	50.0%	60.0%
SG&A % of revenue	15500.0%	1888.0%		nm	nm	nm	nm	533.3%	80.0%	45.0%
R&D % of revenue	61721.1%	5615.0%		nm	nm	nm	nm	711.1%	75.0%	33.0%
Operating margin	**(77121.1%)**	**(7403.0%)**		**nm**	**nm**	**nm**	**nm**	**(1219.4%)**	**(105.0%)**	**(18.0%)**
Tax rate	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
D&A	$571	$584	$144	$250	$250	$250	$894	$1,183	$2,083	$3,330
EBITDA	**($14,082)**	**($19,108)**	**($6,763)**	**($7,150)**	**($7,950)**	**($9,250)**	**($31,113)**	**($39,974)**	**($36,190)**	**($16,650)**
Free cash flow										
Operarating cash flow	($13,303)	($18,053)	($5,791)				($29,612)	($41,376)	($34,400)	($8,672)
CapX	(283)	(513)	(263)				(1,163)	(1,696)	(7,669)	(11,444)
Free cash flow	($13,586)	($18,566)	($6,054)				($30,775)	($43,071)	($42,068)	($20,116)

Notes:

Source: Company reports and Leerink Partners estimates

Balance Sheet *($ thousands)*	Dec-13	Mar-14	Jun-14e	Sep-14e	Dec-14e
Assets					
Cash, equivalents, and short-term investments	$30,198	$23,698	$16,456	$67,490	$58,106
Accounts receivable	0	0	0	0	0
Inventory	0	0	0	0	0
Other	195	247	247	247	247
Total current assets	30,393	23,945	16,703	67,737	58,353
Property and equipment, net	1,118	1,237	1,287	1,337	1,387
Goodwill	0	0	0	0	0
Other intangibles	0	0	0	0	0
Other	374	650	650	650	650
Total assets	$31,885	$25,832	$18,640	$69,724	$60,390
Liabilities and shareholders' equity					
Notes payable and current maturities of long-term debt	$1,759	$1,764	$693	$693	$693
Accounts payable	943	1,035	1,000	1,000	1,000
Accruals and other	1,344	2,402	2,500	2,500	2,500
Total current liabilities	4,046	5,201	4,193	4,193	4,193
Long-term debt	3,299	2,855	3,926	3,926	3,926
Deferred payments	45	0	0	0	0
Other	1,225	1,187	1,187	1,187	1,187
Total liabilities	$8,615	$9,243	$9,306	$9,306	$9,306
Convertible preferred stock	$112,813	$114,719	$114,719	$0	$0
Shareholders' equity	($89,543)	($98,130)	($105,385)	$60,418	$51,084
Total liabilities, shareholders' equity, and minority interest	$31,885	$25,832	$18,640	$69,724	$60,390

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.

Distribution of Ratings/Investment Banking Services (IB) as of 06/30/14				
			IB Serv./Past 12 Mos.	
Rating	Count	Percent	Count	Percent
BUY [OP]	138	69.00	50	36.20
HOLD [MP]	62	31.00	2	3.20
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.

For price charts, statements of valuation and risk, as well as the specific disclosures for covered companies, client should refer to https://leerink2.bluematrix.com/bluematrix/Disclosure2 or send a request to Leerink Partners Editorial Department, One Federal Street, 37th Floor, Boston, MA 02110.

Leerink Partners LLC Equity Research

Director of Equity Research	**John L. Sullivan, CFA**	(617) 918-4875	john.sullivan@leerink.com
Associate Director of Research	**Alice C. Avanian, CFA**	(617) 918-4544	alice.avanian@leerink.com
Healthcare Strategy	**John L. Sullivan, CFA**	(617) 918-4875	john.sullivan@leerink.com
	Alice C. Avanian, CFA	(617) 918-4544	alice.avanian@leerink.com
Biotechnology	**Howard Liang, Ph.D.**	(617) 918-4857	howard.liang@leerink.com
	Joseph P. Schwartz	(617) 918-4575	joseph.schwartz@leerink.com
	Michael Schmidt, Ph.D.	(617) 918-4588	michael.schmidt@leerink.com
	Gena Wang, Ph.D., CFA	(212) 277-6073	gena.wang@leerink.com
	Jonathan Chang, Ph.D.	(617) 918-4015	jonathan.chang@leerink.com
	Paul Matteis	(617) 918-4585	paul.matteis@leerink.com
	Richard Goss	(617) 918-4059	richard.goss@leerink.com
Life Science Tools	**Dan Leonard**	(212) 277-6116	dan.leonard@leerink.com
and Diagnostics	Justin Bowers, CFA	(212) 277-6066	justin.bowers@leerink.com
Pharmaceuticals/Major	**Seamus Fernandez**	(617) 918-4011	seamus.fernandez@leerink.com
	Ario Arabi	(617) 918-4568	ario.arabi@leerink.com
	Aneesh Kapur	(617) 918-4576	aneesh.kapur@leerink.com
Specialty Pharmaceuticals	**Jason M. Gerberry, JD**	(617) 918-4549	jason.gerberry@leerink.com
Medical Devices, Cardiology	**Danielle Antalffy**	(212) 277-6044	danielle.antalffy@leerink.com
	Puneet Souda	(212) 277-6091	puneet.souda@leerink.com
& Orthopedics	**Richard Newitter**	(212) 277-6088	richard.newitter@leerink.com
	Ravi Misra	(212) 277-6049	ravi.misra@leerink.com
Healthcare Services	**Ana Gupte, Ph.D.**	(212) 277-6040	ana.gupte@leerink.com
Healthcare Technology	**David Larsen, CFA**	(617) 918-4502	david.larsen@leerink.com
& Distribution	Christopher Abbott	(617) 918-4010	chris.abbott@leerink.com
Sr. Editor/Supervisory Analyst	**Mary Ellen Eagan, CFA**	(617) 918-4837	maryellen.eagan@leerink.com
Supervisory Analysts	Robert Egan		bob.egan@leerink.com
	Amy N. Sonne		amy.sonne@leerink.com
Editorial	Cristina Diaz-Dickson	(617) 918-4548	cristina.diaz-dickson@leerink.com
Research Assistant	Carmen Augustine	(212) 277-6012	carmen.augustine@leerink.com

New York
299 Park Avenue, 21st floor
New York, NY 10171
(888) 778-1653

Boston
One Federal Street, 37th Floor
Boston, MA 02110
(800) 808-7525

San Francisco
201 Spear Street, 16th Floor
San Francisco, CA 94105
(800) 778-1164