

Interoffice Memorandum

To: Jerry Tubergen

FROM: Lisa Peterson
Michael Lunt

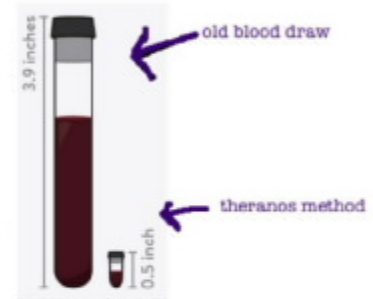
DATE: October 3, 2014

RE: Theranos

Recap of conversations with Elizabeth Holmes, founder and CEO of Theranos, and excerpts from written materials provided to RDV on the company:

What is Theranos Today?

Theranos is a revolutionary blood diagnostics company founded in 2003 and located in Palo Alto, CA. Instead of vials of blood (one for every test needed), Theranos requires only a pin-prick and a drop of blood to perform hundreds of tests, from standard cholesterol checks to sophisticated genetic analyses. The results are faster (couple hours), more accurate (100% automated, no manual handling of the sample), and far cheaper than conventional methods (All tests cost 50%-90% less than standard Medicare/Medicaid reimbursement rates). Holmes describes her company as a “sensors and software company” that is developing solutions to make actionable information accessible at the time it matters most, giving people an unprecedented view into their own health and the potential to head-off serious chronic diseases from cancer to diabetes to heart disease.



What is the company's mission and longer-term vision?

To make actionable health information accessible to people everywhere at the time it matters most, which means being able to detect conditions in time to do something about them and providing easy and affordable access to information that can empower people to improve their lives. Currently, Theranos has a “laser-focus” on being a major player in the US commercial lab testing market currently dominated by Quest and LabCorp with a plan to place a Theranos test center within 5 miles of almost every American, and within 1 mile of every city dweller. “Consumerizing” the healthcare experience is a huge element of their mission. Expansion opportunities include global healthcare test markets, the direct-to-consumer test market, as well as other testing verticals (e.g., pets, livestock, chemicals, water, air, biosecurity, etc.).

What is the market opportunity in the commercial lab sector?

The US commercial lab market is a \$180 billion market which performs nearly 7 billion tests annually. There are more than 4,000 different diagnostic tests available today that drive an estimated 70-80% of clinical decisions by physicians, while accounting for <2.5% of US healthcare expenditures. The vast majority of the tests are performed in retail locations, such as labs like Quest Diagnostics. Other lab environments include pharmacies, physician offices, and hospitals.

Describe the Walgreens opportunity?

Currently, Theranos operates just 22 lab locations, one at its headquarters in Silicon Valley and the others at Walgreens pharmacies in CA and AZ (greater Phoenix area). Walgreens announced a partnership with Theranos a year ago for a national-wide rollout in a "substantial" number of its locations across the country. As the largest US retail pharmacy chain with more than 8,200 neighborhood pharmacies (including nearly 200 in the Phoenix area), Walgreens has the infrastructure to enable Theranos to reach its goal of bringing its services within 5 miles of every US consumer. Once they can properly serve the AZ market, they will replicate it State-by-State in a national rollout with Walgreen's, and eventually to Europe via Walgreen's UK-based affiliate, Alliance Boots. Theranos' revenue for 2015 is projected to be \$990 million and assumes they open 900 Walgreens-Theranos centers next year. In addition to Walgreens, UCSF Medical Center, Dignity Health, and Intermountain are currently in talks with the company, to use its low-cost methods at its facilities as well. Theranos also has long-term contracts with major insurance providers, Medicare/Medicaid programs, hospital systems and physician groups that collectively cover over 150 million lives that have committed to use Theranos as their long-term laboratory infrastructure.

What are the main risks that Theranos faces?

Holmes believes the company's primary risk is the *execution of its business plan*, rather than technology, validation and customer acceptance. Its blood testing systems and software has been tested at length. Since 2005 Theranos' clients included 10 of the top 15 major pharmaceutical companies as they conducted clinical drug trials. Early-on this was a way for Theranos to stealthily refine its technology while earning revenue to build out its infrastructure. They would test drug-trial subjects 3x per week (which wasn't feasible using vein-puncture), with the objective of catching adverse drug effects quickly, before they became dangerous, which gave clinicians earlier reads on efficacy dynamics and allowed for quicker dose-response. Through this work, Theranos has been comprehensively validated over the last 9 years by the 10 largest pharmaceutical companies, with hundreds of thousands of assays processed. The rollout of Theranos into a substantial portion of the 8,200 Walgreens across the US will test Theranos' ability to manage the build-out in a timely and efficient manner, as well as attract and retain a quality workforce.

What is the status of the current fundraising?

Theranos has no debt and has no plans to take on any debt financing. The last equity transaction was completed in Jan-2014. To date, the company has raised over \$400 million. They plan to hold only one more equity transaction for the purpose of carefully selecting long-term, like-minded shareholders who invest for material long-term gains and want to be part of a long-term mission and company. Holmes stated this equity raise will likely exceed \$500 million, with the average investment size starting at \$25 to \$50 million, with some investors indicating a desire to make significantly larger investments. It's our understanding that the cash will be used to redeem earlier investors with shorter-term investment horizons. After this transaction and as the company grows from this point, Theranos will begin consolidating its existing shareholder base around these long-term shareholders.

What are Theranos' key objectives for the meeting on October 14?

Theranos desires a long-term partnership with investors in the current fundraising round. In particular, Holmes is seeking investors who want to build a great company that will both "do well and do good" over the course of multiple generations, with less emphasis on liquidity and more emphasis on long-term capital appreciation. Thus, Holmes and the Theranos team want to get to know the people making the investment, understanding their investment philosophy and target investment profile, as well as meet in person those who will be interacting with the company on a go-forward basis.

APPENDIX – Statistics and Noteworthy Items

- There hasn't been any major change to clinical chemistry in 30+ years. Healthcare reform, increasing healthcare costs, and changing market dynamics make it ripe for innovation.
- Lab testing represents a very small percentage of total healthcare spending (<2.5%), yet 70-80% of medical decisions regarding prevention, diagnosis, and treatment involve lab tests.
- The pre and post analytical phases of the lab testing process (human interaction parts) account for 93% of errors. Theranos automates the pre-and post-analytic processes (no manual handling of the sample), drastically minimizing the human elements of processing which is proven to cause of the majority of lab test errors.
- Chronic diseases (heart disease, cancers, stroke, chronic respiratory diseases, diabetes, Alzheimer's disease, mental illness, etc) account for ~75% of US health expenditures and ~70% of American deaths each year.
- Due to a lack of timely, accurate lab information, physicians are prone to prescribing ineffective/improper medications which add cost to the healthcare system.
- 40-60% of people given a requisition by a doctor to get a blood test - don't go. They either have fear of needles, inability to draw enough blood because of collapsed veins, find it inconvenient, worry about the process and the results, or find it cost prohibitive.
- Theranos tests not only cost 50-90% less than Medicare/Medicaid reimbursement standards, they cost the same amount for everyone, regardless of insurance plan or if uninsured. And costs for all labs are posted on-line for complete transparency. With wide-spread adoption, Theranos could save the US billions.
- Fertility tests cost ~\$2,000 and are not typically covered by insurance. Theranos charges \$35, making it affordable to all women and allowing them to better manage that process and take some of the stress out of trying to conceive.
- Holmes' name is on 18 US and 66 foreign approved patents. In addition, the company has filed for 186 applications worldwide (18 granted to date). Holmes' first patent, and the innovation on which she founded the company, is for a patch that not only delivers medication to the bloodstream, but can simultaneously test the blood to assess the effectiveness of the therapy, and uses a cellphone chip to send results in real-time to physicians.
- Theranos is certified by CMS as a high complexity CLIA laboratory (Clinical Lab Improvement Amendments of 1988), and they are licensed to operate in every state.
- Theranos uses their own analyzer equipment. How they accomplish what they do with such small blood-samples is a trade-secret. Holmes will only say that "their equipment uses the same fundamental chemical methods existing labs do". Its advances relate to "optimizing the chemistry" and "leveraging software" to permit those conventional methods to work on tiny sample sizes.
- A Theranos analyzer station is a small fraction of the size of a current lab making it possible to place a Theranos lab in the operating room or in a military evacuation helicopter, on ships, in refugee camps, virtually anywhere. Real-time data in ER and hospitals will reduce hospital bed stays and costs.
- Incumbent players criticize Theranos' lack of publication of any validation studies in peer-review journals. Since their tests employ the same fundamental chemical methods as existing tests, Holmes views peer-review publication of validation studies as both unnecessary and inappropriate. Unlike most labs, Theranos does not buy analyzer equipment from a 3rd party, and they do not sell their analyzers to other labs, and therefore are not required to seek FDA approval on the analyzer equipment. Although not required, Holmes is seeking FDA clearance for every one of its tests.
- Skeptics question her ability to scale to levels necessary to become a serious competitor. Quest has \$7 billion in revenues, 45,000 employees, a fleet of 3,000 vehicles, 20 aircraft and runs 8 regional hubs, 150 satellite labs and 2,200 patient services centers. Other skeptics question the vastness of Holmes' end-to-end business model. "Why not just sell Theranos analyzers to existing labs?" It's like FedEx trying to manufacture all its own airplanes and trucks.