

Sonnest - Deal Memo

Publication Date:

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# Introduction

**Purpose**

The purpose of this Deal Memo is to elaborate and summarize all due diligence and assessment efforts related to the investment suitability of the company in question. This Deal Memo is confidential and may contain proprietary information; nevertheless, it may be circulated to Southwest Angel Network Members not involved directly with the due diligence process, or with other Angel Networks for the purpose of deal syndication.

The Southwest Angel Network investors involved in the creation of this Deal Memo are attempting to confirm or deny statements or assumptions related to the team, technology, market, customers, vendors, intellectual property, competition, exit opportunities, deal terms, and any other key aspect critical to the proposed investment. Each area of due diligence will the summary of the interview or analysis.

After due diligence efforts are complete, those Southwest Angel Network Members involved with due diligence may articulate in their own words why they are investing based on the opportunities they see.

**Disclaimer**

This Deal Memo is in no way a recommendation to invest. The Southwest Angel Network does not make investment recommendations (yes or no) on any company that comes before the network. Each angel must make their own investment decision. The information and analysis found in this document are based on the best efforts of those involved while evaluating the company in question. It is incumbent on each potential investor to conduct his/her own assessment based on expertise or investment criteria. Angel investments are made on an individual basis, and at no time will an investor hold other investors responsible for investment decisions as a result of this Deal Memo.

**Process**

* 1. The deal lead anticipates making an investment unless the due diligence uncovers negative information.
	2. The deal lead is the primary point of contact with the company
	3. The deal lead has final editorial responsibility for all sections of the deal memo
	4. The deal lead recruits the deal memo team and Identifies a lead for each section of this document. Some team members may be responsible for more than one section.
	5. The deal lead asks the company to complete the Supplemental Information form.
	6. At the start of the deal memo process, the deal lead gets agreement with the section leads and the company on a date and time for a final call with the company.
	7. Each section lead reviews all available information and does any additional research deemed helpful, possibly including talking to experts, doing a web search and making reference calls
	8. The section leads write a first draft of their sections, develop a list of questions for the company (documented by the section lead in section 15) and any agreement needed to be reached with the company before funding (documented by the section lead in section 3). Unless you are making a number of phone calls to customers or for CEO reference checks, it is our expectation that you will spend no more than 2 hours to draft your section. It don’t feel comfortable that you can complete a draft in that amount of time, please contact your deal lead.
	9. The deal lead can ask the section 15 questions of the company in real time (possibly including the section lead in a conference call with the company) or save the questions for the final conference call with the company.
	10. The final conference call is held with the company to review the contents of sections 15 and 3.
	11. The section leads then completes the write up of their section and assigns a score using the rating criteria defined in the Executive Summary, section 2.
	12. The deal lead writes section 2 (Executive Summary), deletes section 15, and makes any updates to any other sections as deemed appropriate.
	13. The Deal memo is circulated to all SWAN angels.

# Executive Summary

**Deal Lead(s): Bob Bridge and Sam Kessel**

As shown below, in each of the assessment areas, the company has been reviewed against applicable criteria and given a score using the following scale:

|  |  |
| --- | --- |
| Score | Score Description |
| 5 | Effective – Satisfies all criteria. |
| 4 | Sufficient – Meets most criteria. Needs some modifications. Not a barrier to funding |
| 3 | Needs Improvement – Meets a portion of the criteria. Needs work and additional capability, but the company appears able and committed to address the concerns both now and after funding. |
| 2 | Potentially Problematic – Fails to meet most criteria. Issues may be overcome, but it is likely that the company is not fundable at this time. |
| 1 | Critical – Fails to meet criteria. Issues cannot be overcome. Company should not be funded. |

|  |  |  |
| --- | --- | --- |
| Assessment Area | Overall Score  | Remaining Risks and Concerns |
| Social Impact | 4 | High potential to improve healthcare costs and outcomes and serve disadvantaged areas and populations. However, risks to focusing and executing on the full potential of social impact and measuring it exist at this early stage. |
| Team and Operating Ability | 5 | Strong team with credible backgrounds. History of successful exits and creating an ROI of up to 20X for early investors/Angels. |
| Product and Technology | 5 | Novel technology for heart imaging with nanoparticles targeting the heart. No side effects to date. Nanoparticle has a long shelf life. Possess a strong patent protection.The technology is compelling because it democratizes detection in two ways: 1) it makes the procedure available for any office with an ultrasound and 2) since it so safe, it can be performed frequently as needed and in surgical situations as well. |
| Market Size and Customer Problem Verification | 5 | Millions of patients require echocardiograms annually and many more require imaging for heart attacks separately. |
| Go to Market Strategy | 4 | While this is a pre-production, pre-revenue company, the regulatory pathway and supporting financials appear to be reasonable. Additionally, the main path to the market is either a partnership or acquisition by a large medical technology or medical imaging firm. The management team has engaged in conversations with multiple potential partners. |
| Competition | 5 | There are no direct competitors of voltage activated ultrasound dyes. There are indirect competitors in terms of CT and MRI scans that could use AI technology. However, these will have different benefits and drawbacks compared to Electrast. Thus, Electrast would be better for specific conditions. |
| Exit Opportunity | 5 | The team has successfully navigated the exit of Harpoon Medical previously to Edwards and has already identified several exit opportunities by engaging with interested parties. |
| Proposed Deal Terms | 4 | Series-A $3M raise on a $9M pre-valuation |
| Corporate Structure and Governance | 4 | Concerns: Low % ownership by the CEO and limited investor influence on the board post-A. That said, the team and board of director appear to be highly experienced and capable. We believe that the concerns listed above will not be the source of a significant risk for investors. Additionally, the team stated willingness to adjust the BoD and negotiate this. |
| Finances | 4 (minority opinion of 3 noted) | While the company is thoughtful about expenses and has a clear plan for R&D expenditures, management will not forecast any revenues given FDA Phase III study will not be completed until about 2024. |
| Overall | 45/50= 90% | Overall, this is a strong, early stage biotech company. The product is novel, serves an unmet need, and has a strong competitive advantage. The team is strong with a previous successful medical device exit (Harpoon medical to Edwards for $150 M). They have a strong medical and engineering teams as well. There are concerns about the corporate structure, due to relatively low ownership by the CEO (10%) and a relatively long time until revenues are earned. The upside is that this company has a strong exit potential within a reasonable time frame (5 to 7 years). |

Sonnest is a pre-revenue, pre-clinical company that has developed a new heart imaging agent, called Electrast. Electrast uses ultrasound to show a detailed view of the micro-structure of the heart. Electrast is a nanoparticle with a dye encapsulated that is activated by the electrical activity of the muscle cells in the heart, and is visible with ultrasound. This technology enables a physician to see if a patient is having a heart attack (myocardial infarction).

The company aims to make the detection of heart attacks inexpensive, quick, and readily available in large hospitals as well as lower resourced areas. Compared to other modalities, such as CT, MRI, and minimally invasive catheterization procedures, this dye would be a significant change in diagnostic ultrasound and the detection of heart attacks.

The company was founded by a team of experienced healthcare entrepreneurs, physicians, and engineers. Dr. Brett Angel (Drexel) is an electrophysiologist (cardiologist with subspecialty training in heart rhythms). Dr. Andrew Kohut (UPenn) conceived of an imaging agent that works with ultrasound to demonstrate if a patient is having a heart attack. They teamed up with scientist [Steven Wrenn](https://drexel.edu/engineering/about/faculty-staff/W/wrenn-steven/), PhD at Drexel University to develop the nanoparticle-based imaging agent.

They have several publications supporting their work including a paper in *Applied Acoustics***.**  The management team is led by Peter Boyd, CEO, and Bill Niland, executive chairman of the board. Together, they helped lead Harpoon Medical (a cardiac valve device) to a $150 million acquisition by Edwards Lifesciences.

It is important to note that the management of Sonnest is involved in an organization called Wheelhouse Ventures. It includes several executives from Harpoon Medical, who are working together to start several medical technology companies. These executives include Bill Niland, and Mark Collins (fractional CFO).

Peter Boyd, the CEO focuses 80-90% of his time (40+ hours per week) on Sonnest and assists on his colleague's other companies part-time. He is a JD/MBA graduate from the University of Virginia. Peter’s work experience includes a law firm in Silicon Valley for early stage companies and venture capital firms. Vapotherm (an oxygen delivery device), and Harpoon Medical. There are three companies at Wheelhouse Ventures with no plans to start more simultaneously. We had conversations with the management team and feel confident this structure is a value-add for Sonnest.

One concern with the investment is the expected board structure post series A. The company expects to have only one investor representative on a board of five members. That said, the existing board members have strong management, scientific, and medical expertise. This under-representation of investors on the board is not expected to create a significant risk for investors. Additionally, the management team expressed flexibility about board structure and are willing to discuss this with SWAN further.

In terms of social impact, the technology is compelling because it democratizes detection of heart attacks. 1) It makes heart attack detection available for any office with an ultrasound and 2) since it so safe, it can be performed frequently as needed and in surgical situations as well.

Overall, we have rated Sonnest high (90%) according to our assessment areas. Furthermore, the team has been proactive in identifying comparable acquisitions in the sector and have built relationships with potential partners/acquirers early on and are gaining solid traction. The deal memo team feels very positive about this investment opportunity and have written this memo to share their observations. It is up to every angel to make their own well-reasoned investment decision. Please feel free to reach out to Bob Bridge or Sam Kessel to address any questions or concerns. Peter Boyd, the CEO, is happy to have another phone call with interested angels to clarify any remaining questions.

# Agreements that need to be reached with the company before funding

Identify any agreements that need to be reached with the company before angels invest. The agreements will typically be documented in a Term Sheet or in a Side Letter which is part of the closing documents.

None noted

# **Social Impact – Score**: 4

**Section Lead(s): Brianna/Blake**

**Impact Metric(s) for quarterly reports to SWAN:**

Impact Metrics

The impact metrics that the Sonnest team is prepared to report on primarily relate to the number of patients evaluated with their trademarked Electrast product. To further illustrate impact, the Sonnest team plans to further disaggregate these metrics by:

* Patient geography: developing vs. developed countries
* Patient geography: rural vs. urban communities
* Patient medical history: patients treated who also have chronic kidney disease
* Statistics on the race of the patients treated with Electrast (when available)
* Aggregate outcomes for patients treated with Electrast (i.e., patients who avoided more invasive testing, when available)

Executive Summary

In summary, Sonnest plans to have a social impact by improving quality of care, increasing access, and reducing costs (i.e., avoiding more invasive testing)—particularly in rural areas and developing countries—to those with coronary heart and chronic kidney disease. Notably, these diseases both disproportionately impact disadvantaged socioeconomic groups. Sonnest believes their impact can be life-changing and extend to millions of individuals globally. After due diligence, Sonnest has demonstrated a score of 4 for social impact. If we were investing at a later stage, with a more proven and commercialized product, Sonnest could be deserving of a 5. At this stage, however, there is uncertainty and risks in execution for Sonnest to go beyond just the social impact of healthcare advancement and focus on measurable health improvement of underserved populations as a core focus of their business model.

Social Impact

Sonnest’s impact metrics largely correspond to IRIS+ indicator PI6845; patients screened, aligning with United Nations Sustainable Development Goal #3: Good Health and Wellbeing. Given the evidence-backed link between Electrast screenings and positive health outcomes or avoidance of adverse health outcomes, these reported metrics are outcome indicators and a proxy for the Electrast screening accessibility.

The company's theory of change is that by replacing traditional screening methods with Electrast screenings, the rate at which heart perfusion abnormalities can be detected among patients with Coronary Heart Disease (CHD) increases, improving patients' likelihood of survival and treatment. Simultaneously, Electrast screenings reduce the cost of diagnosing heart perfusion abnormalities and evade more costly treatments with nuclear radiation and coronary angiography. These cost reductions also improve health outcomes by freeing up resources for treatment and more frequent tests for more updated health information, not exposing patients to nuclear radiation, or the more invasive nature of tests such as coronary angiography. Finally, the Electrast technology, performed quickly at point-of-care, increases accessibility to lower-cost quality treatment by not requiring centralized testing facilities or more costly medical equipment. In the short-term, patients benefit from improved health outcomes, and the long-term impact is a longer life expectancy for patients with CHD.

The scale of potential impact is quite large. In 2019, 11 million Americans visited a physician for CHD, and 5 million Americans visited emergency departments for chest pain. The depth of the potential impact is also extensive, as more than 650,000 Americans died from CHD in 2019. CHD also disproportionately affects minorities in the United States. In particular, Hispanic and African-American patients confront more barriers to CHD diagnosis and care, receive lower-quality treatment, and experience worse health outcomes than their White non-Hispanic counterparts.

Following the Impact Management Project's nine types of [impact risks](https://impactmanagementproject.com/impact-management/impact-management-norms/risk/), we believe only two risks merit further discussion related to Sonnest: evidence risk and execution risk. We do not believe either risk is extremely high or a deal killer, but further discussion of these risks is included in the appendix.

Overall, Sonnest has high potential to positively impact the large group of patients with CHD—including many from disadvantaged socioeconomic groups—by improving their health outcomes, cost, and access. While there are, of course, execution risks at this early stage due to the lack of validation of the Electrast technology on human subjects, the positive impact potential significantly outweighs the risks in our view. Notably, however, in speaking further with the company, management emphasized the benefit for minorities in the U.S. because of comorbidities, but expressed some reluctance in prioritizing rural/developing geographies, voicing that prioritizing a strong company first and foremost is the foundation for prolonged impact to enable and ensure that Sonnest can serve these markets, whether initially or down the road. Given Sonnest appears to be targeting an early exit, the degree to and speed with which these areas are targeted and the social impact potential of Electrast is realized and measured may be out of their control.

# Team and Operating Ability – Score: 5

**Section Lead(s):** Lorraine Stipek and Rashmi Kilam

Sonnest team comprises seasoned individuals who built companies together for over a decade, had prior exits, attracted reputable investors, top VCs in the country and strategic players towards a unicorn exit and another NASDAQ listing. The team has a strong track record and works well together driven by tremendous mutual respect and relevant domain experience.

**Peter Boyd** was brought into the team by **William (Bill) Nyland** whose reputation exceeds any early investor’s expectations, with almost a 20X ROI in the recent past and neither lost an ounce of humility with the success. Peter brings healthcare and legal background to the commercialization of Sonnest as a CEO. He has successfully executed deal closures, developed teams, navigated M&A, acquisition transitions, fundraising and also invested along the way. **Mark Collins**, another seasoned operator, plays a CFO role in all three companies with a focus on HR/operations and Finances at Sonnest. Peter, Bill, and Mark are the primary team that brought Harpoon Medical, a med-tech start up, to a successful exit for up to $100MN. The trio decided to leverage each other’s expertise and network ecosystem under Wheelhouse Ventures, LLC currently with only three companies: Sonnest, RelGel Tech (that recently raised 4MN in the peak of CoVID 19) and NeoProgen (stem cell based that has an impending tactical strategy in the future). Bill, the designated chairman of Sonnest has a primary focus on RelGelTech, while Peter’s primary focus is Sonnest with up to 80% of his time, 40hrs/week+ and knee deep in fundraising for the company. Peter is smart, organized, calm, thoughtful, coachable and thorough. He is very frugal with capital and has skin in the game (he also got his family to commit in two previous debt rounds). Peter is equipped with a sweet spot for identifying technology gaps, good inventors, ideal investors (smart money) and the requisite focus to navigate an exit. Peter played an instrumental role in bringing the deal to fruition at Harpoon Inc- he was the primary contact for the transition to Edwards, valued and retained at Edwards beyond. During the negotiations, Peter played a significant role facilitating tougher areas of the deal with a clear head displaying problem solving attitude and leadership for the other founders. Peter also played a key role in helping another venture Vapotherm navigate through a particularly difficult recall situation and earned high respect from others in the industry.

The key founders and principal inventors described in Appendix 12 comprise of **Dr. Steven Wrenn**, the Chief Technology Officer/CSO; clinical advisors, **Dr. Brett Angel**, **Dr. Andrew Kohut** and scientific team **Dr. Cimorelli, Michael Flynn and Ben Andrien**. It is certainly noteworthy to point that this technical team has strong physician, medial expertise and research/training expertise. Sonnest intends to hire a Sr. Manager or Director of Clinical Affairs to work with Dr. Angel and Dr. Kohut to manage the day-to-day operations of the company’s clinical program.

In conclusion, Sonnest has a novel way to image the heart using nanotechnology that could become the gold standard of care globally with ubiquitous POCUS (Point of Care Ultrasound) and a multibillion-dollar opportunity with a solid management to grow the company towards an ROI and a greater good. We highly recommend the team and the opportunity to invest in the company. (Attached interviews with references)

# Product and Technology - Score: 5

**Section Lead(s): Dr Sam Kessel/Dr. Buddy Owen/Ben Buentipo**

**Summary**

Sonnest, Inc. is developing *Electrast,* an imaging agent that is contained in a nanoparticle that is activated by the heart’s electrical activity to become visible in the myocardium through ultrasound. Electrast allows the assessment and monitoring of microcirculatory perfusion at the point of care and in real-time by using ultrasound. This enables visualization of heart attacks with ultrasound, which is not possible with current technologies. Additionally, this agent does not cause kidney damage unlike other contrast agents on the market, which is a substantial advantage over competitors.

**Background**

Traditional Methods

Current methods and gold standards of care for myocardial perfusion testing include nuclear stress testing and coronary angiography. However, these methods are invasive, require substantial radiation exposure, expensive, and are recommended to not be repeated within one-year of testing.

Solution Advantages

Electrast is an ultrasound-based contrast agent that is non-invasive and does not require radiation. The contrast agent is contained in a nanoparticle and is activated by the heart’s electrical activity. Ultrasound is safe, portable, and less expensive compared to other imaging modalities, such as CT and MRI. While contrast is often used in cardiac ultrasound, it does not offer detailed view of the heart muscle and is unable to detect heart attacks. Additionally, other ultrasound contrast agents can cause kidney damage, while Electrast in animal studies does not cause damage to the kidneys.

Clinical Development and Next Steps

The Electrast product is pre-clinical and has been tested in small animal (rodent) and large animal (pig) studies to date. The product has been validated in these animals and has shown that the nanoparticle is activated by the electrical activity of the heart and is able to demonstrate live versus dead heart muscle. It is able to illuminate the heart without illuminating the blood inside the heart. This allows physicians better visualization of the heart.



With the current seed round, Sonnest is aiming to transfer manufacturing to a 3rd party and develop a phase I study and enroll 20 patients to assess the safety of the product in humans which will be conducted in South Africa. After initial proof of concept studies in South Africa they plan on returning to the US for further larger scale studies. This is a fairly common practice in the industry as international locations allow for faster study development than in the US.

Sonnest is aiming to begin testing the Electrast product in humans by Q2 of 2021 for a feasibility study, but will require Series A financing round ($4 M) soon before that, estimated in Q4 of 2020. The feasibility study will take likely 12 to 15 months.

The most important technological risk is that the animal studies are not indicative of how the agent will work in humans. Additionally, there may be risks in scaling up production effectively of the nanoparticles which could result in increased costs for manufacturing.

Market Position

Coronary artery disease affects 18 million Americans a year and costs $2 billion to identify and treat. This condition is most often identified in doctor’s offices, the emergency room, and during stress testing. There is no point-of-care method for myocardial perfusion testing. Current methods can be inconvenient, toxic, and expensive.

Diagnostic catheterization requires dyes that impact kidney function as well as the risks of a catheterization procedure. Nuclear cardiac imaging requires the use of significant amounts of radiation. Electrast allows the provider to assess the perfusion, structure, and function of the heart. It is a point-of-care solution that is safe, cost-effective, and in real-time.

Sonnest will position itself as a competitor to technologies detecting MI including diagnostic catheterizations and nuclear imaging of the heart. It can be used in the emergency department as well as in the cardiologist’s clinic to assess for current and old heart attacks and determine the location of dead or damaged heart muscle. The benefit of Electrast is that with ultrasound it can be used at the patient’s bedside and does not require the patient to move in order to get accurate imaging.

**Technical Team**

The technical team is comprised of accomplished physicians and scientists that include two cardiologists/electrophysiologists and four chemical engineers. Full Descriptions are in the appendix. The technology was developed at Drexel University.

**Functionality and Design**

Electrast is a liposome nanoparticle and it contains liquid perfluorocarbon, in the presence of an electrical field, the nanoparticle alters its structure to allow water inside. This activates the perfluorocarbon and allows it to create a signal that can be detected with ultrasound to visualize the heart.

In layman’s term, there is a dye inside of a protective shell. The dye is released when it is activated by the electricity in the heart and is able to be seen with ultrasound.

 

**Risk Identification and Challenges**

The most important technological risk is that the animal studies are not indicative of how the agent will work in humans. Additionally, there may be risks in scaling up production effectively of the nanoparticles which could result in increased costs for manufacturing. The technical team is well suited to develop the product from the scientific/engineering side as well as from the clinical perspective.

**Protectability of the Product**

Electrast is covered by 2 patent families with 2 current issued patents as well as more in development. The core advantage of Electrast over competitors is that it is a contrast agent that is selectively active in the heart and activated by the heart. No other competitor has been able to successfully execute a design similar to this to date.

# Market Size and Customer Problem Verification - Score: 5

**Section Lead(s): Sam**

**One-page Summary (additional info can be placed in an appendix)**

According to the American College of Cardiology there were 760,000 echocardiograms performed in hospitals annually from 2001-2011 with a 3% annual growth rate[[1]](#footnote-2). In total, according to the Agency for Healthcare Quality and safety, 20% of all Medicare enrollees got at least one echocardiogram each year[[2]](#footnote-3). In 2015, 31 million echocardiograms were performed annually in the US[[3]](#footnote-4). In 2019, the leading contrast agent for echocardiograms, Definity sold $218 M worth of product. If Sonnest is able to become a world leader in contrast echocardiograms and is able to detect heart attacks/myocardial infarcts, which current contrast echocardiograms CANNOT do, it will be competing with the 8 M nuclear stress tests and 5 M emergency department visits for chest pains annually. At $125/dose it is possible for Sonnest to produce a >$1 billion product. However, it will inevitably take substantial amount of time once on the market to convert physicians from their current practices even if the product is superior to traditional methods.

This is a large market with several competitors, however Sonnest, if developed as planned, would have a substantial competitive advantage by allowing in depth visualization of the heart and would not have the side effect of kidney damage that is caused by current agents on the market.

The market drivers for cardiac imaging are 1) improved outcomes for patients, 2) cost and 3) physician adoption, especially by key opinion leaders. Hospitals and pharmacy benefit managers and insurers also play key roles in these markets. If Sonnest is able to demonstrate superior diagnostic abilities compared to competitors in terms of speed of diagnosis and ease of use, it will likely be adopted. The medical field, overall, is relatively slow to adopt products but if key opinion leaders I.e. the American College of Cardiology recommends the product, it could have widespread adoption.

Unlike other products and companies that SWAN invests in, Electrast is very early stage and it is not possible to determine how adoption will occur until it has a product on the market. The product was developed by cardiologists and is based on their needs for an improved imaging agent and therefore, it is likely to solve a key unmet need in the industry.

# Go to Market Strategy- Score: 4

**Section Lead(s): Sam**

**One-page Summary (additional info can be placed in an appendix)**

While this is a pre-production, pre-revenue company, the regulatory pathway and financials behind it appear to be reasonable. Additionally, the main path to the market is via either a partnership or acquisition by a large med tech or medical imaging firm. The management team has already been in talks with multiple potential partners. Sonnest does not currently have any sales people. Bill Niland, the chairman of the board has experience with several successful med-tech exits.

The go-to market strategy for the company is consistent with its pre-revenue, pre-production status.

See comments from Peter Boyd, CEO:

*Sonnest expects to exit to or partner with a strategic with a commercial organization that calls on cardiologists. The most likely acquirer is one of the current ultrasound contrast manufacturers (Bracco or GE) who have a small market share in the United States when compared to Lantheus which sell Definity®. Definity® is the leading ultrasound contrast agent in the U.S. with ~80% market share, generating >$200M in revenue in 2019 and growing at 15- 20%. The marketing plan for either of these acquirers would be to market to existing Definity® users with a significantly improved product. If Sonnest were to market the product itself, that would be the initial commercialization strategy.*

# Competition – Score: 5

**Section Lead(s): Sam Kessel/Dr. Buddy Owen/Ben Buentipo**

**Summary**

By the year 2030, the UN Sustainable Development Goals aim to reduce premature mortality from non-communicable diseases by a third. Cardiovascular diseases (which include coronary heart disease and stroke) are the most common non-communicable diseases globally, responsible for an estimated 17 to 18 million deaths in 2017, of which more than three quarters were in low-income and middle-income countries.

Electrast is a novel ultrasound imaging agent that can image cardiac perfusion. Unlike other marketed cardiac ultrasound dyes, it is able to give detailed information about the heart not just the overall functioning as traditional dyes do. There are no other cardiac ultrasound dyes that are able to function as Electrast does and there is no direct competitor in the space.

However, a major indirect competitor is the rise of CT perfusion imaging. While CT necessarily involves radiation and an iodinated dye which can impact the kidneys, it can offer more detailed views of the heart’s anatomy. CT scanners are very common in hospitals throughout the country and run 24 hours per day (as opposed to PET/SPECT imaging). Due to advances in software including *TeraRecon* and *Vital Images,* CT perfusion scanning is offering a more detailed view of the heart.

**Existing Competitors and Competitor Assessment**

Healthcare Tech produced an article called “Top 10 Medical Imaging Solution Companies – 2020.” Two of the companies listed were already in the cardiac imaging software space and real-time blood flow imaging, *CardioWise* and *Dynamic Light*.

CardioWise is a cardiac imaging analysis company that simplifies the diagnosis of heart disease. By leveraging its cloud-based, Software as a Service (SaaS) platform technology, CardioWise provides easy to interpret 3D color maps of heart function to cardiologists and patients on any mobile device over a secure portal. Integrated with Coronary Computed Tomography Angiography (CCTA).

CardioWise was founded in 2011 and has five employees. [Cardiowise](https://www.crunchbase.com/organization/cardiowise) has raised a total of [$340K](https://www.crunchbase.com/search/funding_rounds/field/organizations/funding_total/cardiowise) in funding over two rounds. First equity crowdfunding round occurred in May 2012 for an undisclosed amount. Their latest funding was raised on [Mar 5, 2020](https://www.crunchbase.com/search/funding_rounds/field/organizations/last_funding_at/cardiowise) from a [seed](https://www.crunchbase.com/search/funding_rounds/field/organizations/last_funding_type/cardiowise) round.

Dynamic Light is a blood flow imaging tool that uses the principles of dynamic light scattering to generate ‘speckle’ images which have unique characteristics. Speckle imaging enables non-invasive real-time, continuous, and quantitative visualization of blood flow in living tissues. It enables monitoring of tissue perfusion during surgery. Technology is complementary to ICG angiography by offering real-time and continuous blood flow monitoring. Dynamic Light was founded in 2018. It is a small company with two employees, based in Austin, TX.

Table 1 illustrates the competitive landscape and features of other modalities for myocardial perfusion testing.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Electrast** | **EKG** | **Contrast Echo** | **SPECT** | **PET** | **cMRI** | **CCTA** | **Coronary Angiography** |
| **Real-time imaging** |  | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| **Direct visualization of ischemia/infarct** |  | **X** | **X** |  |  | **X** | **X** |  |
| **Minimally invasive** |  |  |  |  |  |  |  | **X** |
| **Non-ionizing radiation** |  |  |  | **X** | **X** |  | **X** | **X** |
| **Quick (<= 20 minutes)** |  |  |  | **X** | **X** | **X** | **X** | **X** |
| **Low cost** |  |  |  | **X** | **X** | **X** | **X** | **X** |
| **Point of care** |  |  |  | **X** | **X** | **X** | **X** | **X** |

*Table 1: Electrast’s competitive landscape analysis.*

**Competitive Advantage**

The key advantage Electrast would have over CT imaging is that it can be done in lower resourced settings, does not require radiation and would not cause kidney damage, which are critical to the success of the product. Many patients are unable to get contrast imaging because kidney disease is a common comorbidity with heart disease.

Other medical technology companies, such as Hologic, I-View Software, offer products in contrast-enhanced diagnostic imaging but are not yet in the in the cardiology space and is still invasive. Other cardiac imaging vendors, such as General Electric and Phillips, offer diagnostic imaging but no contrast-agent products.

Although these companies and solutions may offer non-invasive and/or real-time imaging solutions, Electrast addresses these and also point-of-care utility, patient safety, and cost-effectiveness.

**Possible Barriers and Concerns**

The main barrier for Sonnest and Electrast is the lengthy FDA approval process and regulatory requirements which have substantial capital and time requirements. However, this is also a barrier to any other direct competitors using ultrasound contrast agents. Sonnest’s indirect competitors in CT software do not have the same barriers to allowing advanced heart imaging but they also will require radiation and potentially kidney damaging dyes.

**Additional Comments**

# Exit Opportunity – Score: 5

**Section Lead(s): Sam**

**One-page Summary (additional info can be placed in an appendix)**

The Sonnest team is unique in that they have previously had a successful exit with Harpoon Medical and have the management expertise to evaluate exit opportunities. From the beginning, Sonnest has been designed to reach an exit after enough clinical development. The team is targeting four different categories of acquirers : “1) current contrast manufacturers, 2) specialty pharma companies, 3) ultrasound manufacturers, and 4) large integrated MedTech companies that call on cardiologists.” Of these Sonnest has found the most interest in contract manufacturers and one large integrated MedTech firm.

There are several similar types of acquisitions that have occurred in this space. The paragraphs below are descriptions of deals from the management of Sonnest:

First is the Eli Lilly acquisition of Avid Radiopharmaceuticals for $300M upfront prior to FDA approval and up to $800M in total with potential milestone payments (Pitchbook reports $896M). Avid was formed in 2004 to develop positron emission tomography (PET) imaging agents to visualize beta-amyloid plaque in the brain. The company’s lead compound, Amyvid, was designed as an early diagnostic for Altemeyer’s. At the time of acquisition, Avid had completed enrollment of the Phase III study of Amyvid and was working with FDA to secure approval of Amyvid.

Second, is CV Therapeutics development of Lexiscan in the mid-2000’s. Lexiscan (Regadenoson) is an A2A adenosine receptor agonist indicated for use as a pharmacologic stress agent in radionuclide myocardial perfusion imaging (MPI), a test that detects and characterizes coronary artery disease, in patients unable to undergo adequate exercise stress during a nuclear stress test. The drug works towards increasing the blood flow in the arteries prior to injecting the tracer and does not qualify as a non-invasive treatment and has potential side effects.



A detailed case study on CV Therapeutics and Lexiscan is included in the dataroom. In short, CV Therapeutics partnered with Astellas Pharma, a large Japanese pharmaceutical company, to develop Lexiscan. Under the terms of the development agreement, Astellas made $19M in development milestone payments, reimbursed CV Therapeutics for 75% of the development costs upon FDA approval and received rights to market Lexiscan in the United States with an ongoing royalty. Lexiscan was approved in April of 2008 and revenues grew to $267M in 2009 and $438M in 2010. In 2011, the royalties for Lexiscan (along with an antibiotic Cubicin) were acquired in 2011 for $487M. In 2009 CV Therapeutics, which had one other approved product that was not generating the same amount of revenue as Lexiscan or growing at the same rate, was acquired by Gilead Sciences for $1.4B*.*

Based on these examples of similar imaging agents in different verticals, it is possible that Sonnest is able to develop Electrast to the point where it can either have an outright early acquisition or partner with a larger firm to assist with the development costs in exchange for an acquisition or licensing agreement after further development.

The time frame for a possible acquisition could range from after phase I trials within 18 months of this seed round, to 3-4 years after the investment during phase II/pivotal studies and possibly later depending on technical and manufacturing challenges that delay studies. The management of Sonnest has indicated that they are looking to exit well before they get to Phase III studies. Additionally, Peter Boyd has stated that “Sonnest was designed with an early stage acquisition in mind,” and has aggressively pursued partnerships and feedback from the beginning of Sonnest. He has significant traction with potential acquirers and they seem very interested in potentially acquiring Sonnest once it reaches Phase II trials. The Sonnest team, in our opinion is experienced with med-tech acquisitions and has the ability to execute a deal after sufficient research and development of Electrast.

# Deal Terms – Score: 4

**Section Lead(s): Bob**

The basic terms are a series-A $3M raise on a $9M pre-valuation. The first close requires $1.5M for the initial closing.

Given the quality of the team, and the assumed quality of the technology these terms appear reasonable.

If the requested pre-money were lower (e.g., $6M or $7M,) then this section would have been scored 5.

# Corporate Structure and Governance -Score: 4

**Section Lead(s): Bob Bridge**

We believe that the existing board directors have relevant experience.

There is a plan to establish an option pool immediately before the close of series A. The term sheet states the pool will be 1.7M shares, a 10% pool.

There are some unusual aspects to the corporate structure which results in the score of 3 for this section.

* The board composition, post series A, has minimal investor representation
* Peter Boyd, the CEO, has an unusually low percent ownership which may pose challenges to his management authority

That said, the executive team is highly experienced, credible and appears to be. transparent. Based on that observation, we have scored this section a 4

**Board Composition**

Regarding Board structure, the company states that:

“Sonnest, Inc. has authorized a five-member Board of Directors and four of the seats are currently filled from the co-founding team with one seat vacant. Every Board member has a significant ownership stake that is subject to vesting, so no one is provided additional compensation for their role as a Director. The current Board includes:

1. William Niland, Executive Chairman
2. Peter Boyd, CEO
3. Dr. Steven Wrenn, CTO
4. Dr. Brett Angel, Co-Founder and Medical Advisor

The company expects the Board composition to change with the Series A financing. We expect that at least one seat will be filled by the Series A stockholders and have discussed having Dr. Angel transition to running the Company’s Medical Advisory Board with Dr. Kohut and bringing in an independent board member with experience in diagnostic or cardiac space.”

This is not an optimal board structure. The normal model is an equal number of company reps and investor reps plus one independent.

**CEO Ownership percentage**

The current cap table is:



This is not an optimal cap table in that Peter, the CEO, has only 10% ownership.

That said, Peter Boyd has invested in convertible debt as shown below. William Niland and Peter’s father also have invested in convertible debt.



# Finances – Score: 4 (MAJORITY OPINION) 3 (MINORITY OPINION)

**Section Leads (Majority): Sam Kessel/Rashmi/Bob Bridge**

While the majority agrees with the facts presented by Will Thomas below, we believe that for the stage of Sonnest as a company, the projections for costs are low compared to competitors for the development process and that it is reasonable to not have solid predictions of revenues at this point in time. Based on the total addressable market, regulatory strategy, and experience of the team, we believe that the financial estimates are reasonable.

**Section Lead(s): Will Thomas**

Given the early stage of the Company, the long R&D and FDA approval process, the Company only forecasts expenses, but no revenues yet. While the company has been thoughtful about expenditures, J-curve is deep and revenues are speculative. If FDA trials all go well and development can be funded with this raise plus another $10mm series B, the company could exit at a healthy valuation to a strategic. Or the Company could continue to raise around $20mm for a FDA Phase III and develop a go-to-market strategy for a later, and potentially more lucrative exit.

Management’s forecast below demonstrates the consumption of $33,151,900 through the end of 2022. Interim-year detail shows a low cash position of $437K in Q3 2021, just prior to the expected $8mm raise in Q4 2021. Given the burn rate in 2021, a delay in funding could prove damaging to current investor equity positions, so the company and investors will need to be vigiliant in monitoring cashflow.



Management provided further detail on the development plan, sales and COGS:

**Development Plan:**

The Series A round funds initial human studies outside the U.S. in 2021. A $7-10M Series B round funds additional clinical work outside the U.S. and the first patients in the United States. The target for the first U.S. patients is late 2021 or Q1 of 2022. The Series B funding will also be used to design the “FDA Phase III Pivotal Study” that will be required to secure FDA approval. With safety data, preliminary efficacy results and the Phase III Study designed and approved, the Company expects to be able to partner with or exit to a large strategic. If not, they intend to raise a $15M - $25M Series C to fund the FDA Phase III Pivotal Study. That study would start in late 2022 and run well into 2023 with FDA approval coming in late 2023 (optimistic) or 2024 (realistic).

**Sales:**

In terms of revenue ramp, the Company reports it is largely dependent on whether they are commercializing the product themselves or whether they have been successful partnering with a strategic. They point to Lexiscan as a case study; it is a vasodilator that is used in nuclear stress testing, one of the markets where Electrast™ will be very valuable. The Company explains that Lexiscan was developed by a small public biotech in partnership with Astellas Pharma, a large Japanese multinational. Once they got FDA approval in 2008, Astellas commercialized Lexiscan in the U.S. and grew revenues to $438M in annual revenues by 2010. While they explain they can’t commit to replicating what Lexiscan did, they believe they have identified a similarly large unmet clinical need in the cardiovascular space, meaning the revenue opportunities for the Sonnest are significant.

**COGS:**

Regarding COGS once sales begin, the company estimates raw materials to manufacture a dose of Electrast™ at scale are <$10/dose (or even <$5/dose). That does not include manufacturing costs but there is nothing in Electrast™ that would make it exceedingly expensive to manufacture like with some specialized drugs or biological agents. And there are already reimbursements from CMS/Medicare of ~$200 for a “contrast echo” versus a non-contrast echo. If the company can get increased reimbursement based on the value they create. When discussing sales pricing with strategics, Sonnest discusses a price point in the $100 - $125 based on the price for existing contrast agents (i.e. Definity®).

While it would be nice to have a revenue ramp, management should be applauded for not projecting pricing, volume or even timing of revenue generation given the long FDA Approval process.

# Appendix – additional notes

**Social Impact**

Following the Impact Management ' 'Project's nine types of impact risks, we believe only two risks merit further discussion related to Sonnest. The first impact risk is evidence risk—the probability that insufficiently high-quality data exists to know what impact is occurring—which could present itself if Sonnest is unable to gain all of the data it would like to in order to report impact outcomes to SWAN. For the next two to three years, every patient treated with Electrast will be enrolled in a clinical study, so Sonnest will have significant information about their background and treatment outcomes and are prepared to report on that information to SWAN on an aggregated basis. Once the technology is commercially available, it may be harder to provide more granular data. It would probably be limited to sales tracing (i.e., X number of doses sold to Y hospital). The second impact risk is execution risk—the probability that the activities are not delivered as planned and do not result in the desired outcomes—which is mainly related to the early stage of the company and the potential that Electrast technology does not replicate the impact it has in animals when it is tested and modified, if necessary, to be used in humans. Execution risk also exists if Sonnest cannot successfully focus their sales/distribution strategy into rural areas and/or developing countries,otherwise gain traction with those customers, or has an early exit to an acquirer less committed to the social impact potential of Sonnest. We expect the FDA approval process would prevent a third risk, unexpected impact risk, from being material.

**Technical Team**

* **Steven Wrenn, PhD., Inventor, Co-Founder & Chief Scientific Officer:** Dr. Steven Wrenn is a professor of chemical and biological engineering at Drexel University. He is a colloid scientist who maintains an active research lab focused primarily on biological colloids and their applications in ultrasound. Dr. Wrenn is the lead inventor on the two patent families which are the foundation of the Sonnest IP portfolio. Dr. Wrenn was also the Principal Investigator on the $543,000 Drexel-Coulter Translational Research Partnership Program grant that funded the Electrast™ development work to date and was granted a sabbatical to take a full-time role leading Sonnest’s research and development efforts
* **Brett Angel, MD, Inventor & Co-Founder:** is an invasive cardiologist sub-specialized in cardiac electrophysiology. He is board certified in Internal Medicine, Cardiovascular Disease, and Echocardiography. He is a Clinical Assistant Professor of Medicine at Drexel University in the department of Cardiology. He has an interest in novel ultrasound contrast agents for cardiac enhancement and initially contacted Dr. Wrenn in 2015 and challenged him to create a contrast agent that is naturally dark but lights up in the presence of an electric field. He is a member of the Heart Rhythm Society and the American College of Cardiology with an M.D. from the University of Witwatersrand in South Africa, international clinical experience in the U.K. and specialist medical training at Albert Einstein Medical Center and Drexel University in the U.S
* **Andrew Kohut, MD/MPH, Inventor & Co-Founder:** is a noninvasive cardiologist, board certified in cardiovascular disease, echocardiography and nuclear cardiology. He is a Clinical Associate Professor of Medicine at the University of Pennsylvania. His primary clinical interests are in the detection, treatment and prevention of coronary artery disease and valvular heart disease. His research has focused on the ultrasound imaging, bioeffect of nonlinear ultrasound on heart tissue, and molecular mechanisms of heart failure. He is a member of the Alpha Omega Alpha Medical Honor Society. Dr. Kohut has an MD from Drexel University, MPH from Boston University and BA from the University of Pennsylvania
* **Michael Flynn, BS/MS, Co-Founder & Principal Electrast Engineer:** is a chemical engineer with a background in colloidal structures, custom software, electronics systems, and acoustics. While working as a graduate researcher in the Wrenn lab, Mr. Flynn took on various roles in industry as an analytical chemist turned software developer at W. L. Gore and Associates, and a product development and polymerization simulations engineer at Infineum USA. He also developed the electronics system to measure Electrast™’s acoustic activity and its sensitivity to the applied electrical environment. Mr. Flynn received degrees in chemical engineering from the BS/MS dual degree program at Drexel University.
* **Michael Cimorelli, PhD Candidate, Inventor & Co-Founder:** is a scientist whose PhD thesis was focused around the technical aspects that govern Electrast™. He has won numerous awards in the US and abroad including the Koerner Family Fellowship, the GAANN Education Fellowship, the NSF Graduate International Research Experience Fellowship, and the Fulbright Open Research Fellowship. Mr. Cimorelli is currently a consultant to Sonnest as he completes a Fulbright and plans to join full-time in a hybrid role as a Senior Scientist with business and corporate development responsibilities in June of 2020 after the completion of his PhD.

**Interview Notes: Terri Burke**

**How did you get to know Peter?**

Terri ran business development for Edwards and met Peter through Harpoon acquisition. Terri led the acquisition effort and Peter was point of contact for the majority of the due diligence requests. It was a structured acquisition with milestones so while Terri left Edwards before the final step, she managed the structuring.

**What was your experience in working with Peter?**

Peter is very smart, and he understands the world of startups and negotiations. He works very hard and managed an extremely organized data room. Thoughtful and organized. Was able to deal with high pressure situations. This was a 100M up front, milestone-based deal with difficult deadlines. Toward the end, we wanted to accelerate the deal docs. Peter worked hard to get it completed without cutting corners. Surrounds himself with the right people to get things done right and empowers his team.

**Communications Style**

Not everyone loves Peter’s communication style. It is somewhat cerebral. May take some time to get used to. Peter takes feedback, was willing to adjust contents of his pitch deck for example.

**Can you name a more material example of Peter taking feedback?**

Early in the deal communication – we put forth a term sheet that was not what the company was expecting, and they were very put off by that – the inventor was offended. We broke up the meeting and the Harpoon team communicated they were upset – Terri expressed there might be a disconnect in the market and proposed they compare notes on the way they were sizing the market. Peter played the role of mediator, took it in stride and was adept at coaching the rest of the team to get through it . The two teams went back though it and realize there actually was a disconnect in the market sizing. Harpoon was better able to articulate a treatable market Edwards missed. Peter was the one who helped negotiate through the difference 2 weeks later to come to an agreement

**What was Peter’s role vs Bill’s role in developing capital for Harpoon?**

Don’t know who was in the driver’s seat early on. In our first meeting Peter was always together with Bill and Peter always had the detail. Jim Gammie – was the inventor and he was at the initial meeting. We knew immediately it was the technology we were searching for.

**What about the other Wheelhouse companies?**

Wheelhouse ventures is the same Harpoon team – don’t know much about it. Can say they are very lean about sharing and using capital. It seems efficient because they play different roles depending on the company. Edwards did look briefly at the other companies in Wheelhouse:

ReGel technology is a tough market – ortho – we have a fund too and it needs more commercialization, later acquisitions – behaves diff – Spine fillers have a lot of dead technologies. Have sophisticated investors so probably good for them - they knew how to execute the playbook really well

Stem cells are just really difficult -we didn’t look at much because outside of our expertise. Stem cells have a long clinical pathway. Seemed like a stretch for Wheelhouse expertise as well but they have likely built out the team to fill the gaps

Have not yet looked at Sonnest personally.

**Summary thoughts on Peter**

Overall, capital efficient. Peter knows how to get early data to understand the value prop and what do to do to demonstrate or prove to get the early data. Knows to look for the value inflection point. Revenue run rate is not as important at that point than dedicated, repeat usage demonstrating it is innovative and fits a real patient need. Peter and team probably not commercial team – optimized to look for early exits. If they wanted to go more commercial, they would need to build a different team.

**Recommendations:**

Should ask Peter where he needs additional skill sets and where he feels he needs to build out the team

**Interview Notes : Scott Talbot**

30 years in patent law with Cooley law firm. Also background in Aero Engr. Works primarily with early stage companies, IP intensive and focuses on IP, licensing and trademark. He works in this capacity for Sonnest.

**Tell us how you know Peter -** Met Peter very early in his career attempting to recruit him to lawschool. They kept in touch and later and Scott worked with Jim Gammie at Harpoon and also participated in their exit with Edwards. Jim got the start up bug and started Protaryx with Terri Burkes. Terri is now a venture partner at Epidarix. Jim has at least one other startup in the fire while maintaining his clinical practice (not sure how relevant info on Jim in but leaving in notes for now)

Since then, also brainstormed with Peter as he developed ideas for Wheelhouse but Scott is not involved with the corporate structure. While Cooley is listed and the corporate attorney and Scott as the contact, it is other partners in the company who assist with the structural corporate aspects of the company.

**How does their structure impact the way they raise money and manage the company?** Scott not involved with the financial side. Scott knows Bill very well and thinks very highly of him. Would be comfortable with any venture he was involved in.

**Back to Peter…..**

Engaging, genuine person, humble, knows what he knows and knows what he doesn’t know. He is very sophisticated at the IP and how to manage venture deals, and knows the mechanics of how it works in the patent office. Peter is very analytical, likes to be precise and know the facts of what is going on. He is analytical to a point where he can be off-putting to others who are not as precise. But he is not analytical to the point of no action – it is just everything he does is supported by analysis. Still, He knows he isn’t patent lawyer – so can have informed conversations but also knows when to get help and is very precise with how he spends money on legal support. He is not so convinced of his own “rightness” that he doesn’t ask for help. Could not come up with a specific example of when Peter has taken feedback on something he was passionate about, but felt strongly that he had witnessed Peter behave in this manner.

Scott went on to say he wishes all his clients were like this. He is respectful of the relationship, optimizes time spent Cooley and gives the appropriate time for runway on requests.

**How will he balance the business and legal part and Wheelhouse as well – how will that reflect on Sonnest** ?

They have been very mindful about not getting spread too thin. Three is IT. No more. Of the 3, he will be mostly engaged on Sonnest. Don’t deal with NeoProgen as it is outside his expertise. Also each stays primarily in their lane - Mark is clearly the CFO, Peter legal and BD. Of the rest founding team of Sonnest – just met them once and some email traffic – good personalities, not arrogant. Did work with Steve closely in the patent work, very little with the others.

**How did they find the technology? –**

Don’t specifically know how they found the technology – Drexel, doing a university spin out – they look for the IP and then co-work with them to develop the company. Same thing they did for Harpoon.

**How are Peter’s Communication skills?**

Might take a bit of time to tune into his skills – may seem hesitant at first but he is very composed and deals well with difficult people.

**Final points?**

Very impressed by the technology and would be interested in investing. Big fan of Peters.

Attachment - Company Provided Information

Company Pitch Deck

Company Application form

Company Supplemental Information form

Other documents

1. <https://www.sciencedirect.com/science/article/pii/S0735109715075300#:~:text=Analysis%20of%20trends,Central%20Illustration%2C%20panel%20A>). [↑](#footnote-ref-2)
2. <https://www.ncbi.nlm.nih.gov/books/NBK208663/> [↑](#footnote-ref-3)
3. https://www.lantheus.com/art-of-imaging/echocardiography/ [↑](#footnote-ref-4)