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Zacks Equity Research

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Vicor Technologies, Inc. (VCRT-OTC)

VCRT: 2011 Outlook

Current Recommendation	**Outperform**
Prior Recommendation	N/A
Date of Last Change	04/9/2010
Current Price (02/04/11)	$0.47
Six- Month Target Price	**$1.07**

OUTLOOK

Vicor began generating revenue in January 2010 after 10 years as a developmental company. Risks still abound but, in our opinion, are acceptable given the potential for sales and profitability to ramp rapidly. Early indications suggest the PD2i Analyzer™ has received a positive response from physicians although unit placements have been well below our initial expectations. We think several catalysts can accelerate this slow placement rate in 2011.

We maintain our Outperform rating. Our near-term price target is $1.07.

SUMMARY DATA

52-Week High	**$0.85**
52-Week Low	**$0.45**
One-Year Return (%)	**N/A**
Beta	**-0.24**
Average Daily Volume (sh)	**29,227**
Shares Outstanding (mil)	**46**
Market Capitalization ($mil)	**$21**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**7**
Insider Ownership (%)	**N/A**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2011 Estimate	**N/A**
P/E using 2012 Estimate	**N/A**
Zacks Rank	**3**

Risk Level	**N/A**
Type of Stock	**N/A**
Industry	**Med Instruments**
Zacks Rank in Industry	**19 of 50**

ZACKS ESTIMATES

Revenue
(in 000's)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2008	$0 A	$0 A	$0 A	$0 A	$0 A
2009	$0 A	$0 A	$0 A	$0 A	$0 A
2010	$100 A	$8 A	$14 A	$67 E	$189 E
2011					$1,794 E

Earnings per Share
(EPS is operating earnings before non recurring items)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2008					-$0.29 A
2009					-$0.18 A
2010	-$0.06 A	-$0.05 A	-$0.03 A	-$0.06 E	-$0.19 E
2011					-$0.14 E

Zacks Projected EPS Growth Rate - Next 5 Years % **N/A**

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2011 PREVIEW

While 2010 ended up being somewhat of a disappointment for Vicor from a revenue perspective, we are optimistic that this will not be repeated in 2011. We look for approximately 50 units placed through the end of 2010 but for this to significantly accelerate through 2011 (we model an installed base of 230 units at FYE 2011). We believe several catalysts will fuel this more rapid placement rate during 2011 – which should in-turn accelerate utilization revenue:

- **Bigger, Productive Sales Force:** Vicor stumbled out of the gate early in 2010, hoping distribution could be handled by a small physician practice in the Southeast. This proved ineffective with few systems placed. As a result Vicor changed tactics and hired (Sept 2010) a national sales manager with a long and successful history in medical device sales. He quickly beefed up the sales force and spread the geographical footprint throughout the country. This already appears to be paying dividends, with the news that 8 units were placed in December alone. Vicor expects to continue to increase the size of its domestic sales force throughout 2011 - from 26 as of September 2010, to 50 (expected) at December 2010 to 70 by the end of 2011. This should, in-turn, help to accelerate the rate of unit placements.

- **Acceptance:** Overwhelming evidence supports that PD2i works as Vicor claims and that it has significant and important clinical utility. A better mousetrap does not always translate into rapid acceptance, however. This is especially true in the medical field where optimizing patient care is often weighed against other considerations such return-on-investment or just plain skepticism. It's easier to commit to a new technology if your neighbor tried it first and had a great experience. We think physicians that are using the Analyzer are finding real utility for it and are finding that the economics work. We believe this should help PD2i gain traction as physicians tout its benefits to colleagues.

- **Leasing option:** Agreement with equipment leasing company signed in early 2011 allows companies to obtain the Analyzer without the upfront cost.

- **International Distribution:** Deal signed for distributor in Asia. Vicor currently negotiating contracts for distribution in Middle East and Europe. We expect several new international distribution deals to be in place during 2011. Depending on the rate of acceptance, the international market could offer significant upside to our current forecasts.

- **Experienced Domestic Distributor:** Vicor may supplement its own sales efforts with the use of a domestic distributor. "Once Bitten Twice Shy" – management learned from their mistake in early 2010 so if and when a domestic distribution agreement is penned, expect it to be with an experienced firm that will deliver results.

- **Cardiac Death Indication:** 510(k) submitted in July 2010. While we hoped Vicor would have received FDA clearance for this indication already, the delay does not dampen our expectation that it will come in 2011. This would allow Vicor to broaden its marketing message and could significantly increase interest in the Analyzer (especially with cardiologists). And we remind investors that any physician can already use the Analyzer for any indication they feel it is useful for – FDA clearance of specific indications allows Vicor to explicitly market for those indications.

- **Normal Range Study:** Should be concluded in 2011 followed by a 510(k) filing for the determination of abnormal heart rate variability in patients at rest and during exercise. FDA clearance should be a catalyst in driving utilization of the Analyzer for the diagnosis of diabetic neuropathy – a huge potential market.

- **Trauma Indication:** Following FDA clearance for the cardiac mortality indication, Vicor expects to pursue a claim for diagnosis of patients at imminent risk of death from trauma.

- **Ongoing Studies:** Vicor is also studying PD2i in applications other than trauma and cardiac death including for the detection of blood loss from internal bleeding and the prediction of adverse cardiac events in college athletes.

- **Exposure to the "Right" People:** PD2i has only very recently begun to get noticed by the larger medical community. Exposure through presentations at prestigious events and publication in prominent journals is one of the most influential forms of marketing and Vicor is now doing both tirelessly. We expect this to be a

continuing theme throughout 2011 and result in greater exposure to people that understand the significance of the technology. This will hopefully be another catalyst to sales growth.

- **Higher Utilization:** Additional indications coming online along with greater exposure of the technology through presentations at prestigious conferences and in medial journals should help drive greater utilization of the Analyzer. Combined with a growing installed based, Vicor's "printer / printer cartridge" business model can significantly steepen the rate of revenue and earnings growth.

RECENT NEWS

ACC Presentation
In January 2011 Vicor announced that an abstract of its chronic heart failure trial had been chosen for presentation at the American College of Cardiology (ACC) 60th Annual Scientific Session on April 4, 2011.

The presentation, *Prognostic Significnce of PD2i, Novel Risk Marker in Heart Failure Patients,* is an abstract from the MUSIC trial, data from which was used in support of a 510(k) submission in July 2010 seeking a claim for the identification of congestive heart failure (CHF) patients at elevated risk of cardiac mortality.

DAN Study Published
In January 2011 Vicor announced that a manuscript detailing a study demonstrating PD21's ability to detect diabetic autonomous neuropathy was accepted for publication in Clinical Neurophysiology, the official journal of the International Federation of Clinical Neurophysiology. The manuscript, *Nonlinear PD2i heart rate complexity algorithm detects autonomic neuropathy in patients with type 1 diabetes mellitus*, was written by Vicor's scientific and medical teams.

Lease Financing Program
In January 2011 Vicor announced that it established a captive lease program with a third party to provide a financing option for customers of its PD2i Analyzer. Vicor had started offering their instruments for lease during the third quarter 2010 but now with a captive lease program fully-established, this may help drive sales.

CFO Hired
In January 2011 Vicor announced that it hired Thomas Bohannon as Chief Financial Officer. Prior to this, David Fater had held dual roles as Vicor's CEO and CFO. Mr. Fater will remain CEO. Mr. Bohannon had been Vicor's acting Chief Accounting Officer since December 2008.

Distribution in China
In December 2010 Vicor announced that it entered into an agreement with Guangzhou Jiyuan Biotech for distribution of the PD2i Analyzer in China. Guangzhou Jiyuan Biotech, founded in 2002, is a privately-held biotech company focused on the marketing, promotion, and distribution of medical devices, in vitro diagnostic reagents, and research products in China. Guangzhou Jiyuan Biotech will be responsible for (include the cost of) gaining regulatory approval to market Vicor's products in China.

Sales Force Paying Dividends
Sales appear to be benefitting from the September 2010 hiring of a National Sales Director who subsequently brought on 26 new sales reps. In mid-December Vicor announced that they placed eight PD2i Analyzers with physicians in Michigan, Wisconsin, Texas, North Carolina and California.

Our current forecast is that Vicor will have approximately 50 units placed by year-end 2010 but for unit placements to significantly accelerate in 2011, partially as a result of continued expansion of the domestic sales force.

OVERVIEW

BUSINESS

Vicor Technologies, Inc ("Vicor") was formed in August 2005 and went public in 2007. The medical diagnostics company is focused on developing non-invasive technology to accurately predict the risk of future pathological events (i.e. sudden cardiac death, complications from diabetes, etc.). The company's technology is based on its proprietary point correlation dimension algorithm (PD2i® algorithm) which appears to be a superior alternative to currently used vital sign and heart rate variability measurement technology. Vicor is headquartered in Boca Raton, FL and employed ten people as of March 1, 2010.

Vicor received FDA marketing approval of its first product, the PD2i Analyzer™ ("Analyzer") in December 2008. The product subsequently went through additional programming updates and launched in January 2010. The Analyzer incorporates Vicor's PD2i® software technology into a private label electrocardiogram (ECG) machine. The product displays and analyzes ECG data that measures heart rate variability (HRV). The HRV data and analysis generated by the Analyzer software is not currently approved by the FDA to address a specific medical indication so the clinical significance of the data must currently be determined by a physician. However, there are currently 60 ICD-9 diagnosis codes available for which use of the Analyzer can be justified and physicians are currently being reimbursed by Medicare, Medicaid and private insurers through existing CPT codes. On July 1, 2010 Vicor made a 510(k) filing seeking clearance to market the Analyzer for identification of the risk of suffering cardiac mortality. We also expect Vicor to seek a trauma indication following regulatory clearance for cardiac mortality. Vicor received approval of protocol for its "normal range" study in September 2010 and expects to commence the trial shortly. The results from the study are expected to be used to support a 510(k) application for determination of abnormal heart rate variability in patients at rest and during exercise. Normal ranges will better allow physicians utilizing the Analyzer in determining when a patient is at risk if suffering an adverse cardiac event. We expect this to be a catalyst initially in the utilization of the Analyzer for the diagnosis of diabetic neuropathy. As these new marketing applications are approved by the FDA, we expect sales, which commenced in early-2010, and physician interest in the Analyzer to significantly ramp.

In January 2010 Vicor signed a distribution agreement with VF Medical to serve as exclusive distributor for the Analyzer in South Carolina, North Carolina and selected cities in Georgia. A 25-person sales team began marketing the Analyzer to cardiologists, electrophysiologists and other physicians with which VF Medical has long-standing relationships. However, sales languished and in September 2010 Vicor brought on an experienced national sales director, Chris Vissman. Mr. Vissman quickly contracted with several independent sales reps throughout the country and expects to have a total sales force of about 50 by year-end 2010 and 70 reps by year-end 2011. bring on another ten by year-end 2010. Vicor is recruiting only well-established and experienced medical device salespeople in major cities which we expect to benefit the domestic sales effort. Vicor expects to supplement their own sales efforts with a domestic distribution agreement – which we expect to be in place during 2011.

Vicor has also been in discussions with international distributors in China, the Middle East and Europe. In December 2010 Vicor announced that it entered into an agreement with Guangzhou Jiyuan Biotech for distribution of the PD2i Analyzer in China. Guangzhou Jiyuan Biotech, founded in 2002, is a privately-held biotech company focused on the marketing, promotion, and distribution of medical devices, in vitro diagnostic reagents, and research products in China. Guangzhou Jiyuan Biotech will be responsible for (include the cost of) gaining regulatory approval to market Vicor's products in China. We expect several other international distribution deals to be in place during 2011.

Vicor generates revenue through sales of the Analyzer as well as on each test run by physicians utilizing the device. This "printer, printer cartridge" business model should result in product sales providing the majority of revenue initially but per-test revenue quickly becoming the bulk of total sales as the installed unit base grows. Margins, which we expect to eventually approach 30% (or higher) on products and 75% per-test, could also significantly increase as the installed base grows.

PD2i® TECHNOLOGY

The PD2i® Algorithm technology allows a physician to evaluate heart rate variability information provided by an electrocardiogram. The technology, which is believed to be superior to existing HRV analysis, has potential

applications in predicting fatal cardiac arrhythmias, imminent death and autonomic nervous system dysfunction, the latter which can lead to cardiac autonomic neuropathy (discussed below).

Conventional and widely-used heart rate variability analysis relies on a model using a linear stochastic algorithm and only focuses on the heart. Conversely the PD2i® technology uses a non-linear, non-stochastic model and focuses on how the brain influences heart rate. Conventional HRV analysis using a linear stochastic algorithm assumes that heart rate variability is random and is distributed around the mean. However, it has been shown that heartbeat intervals have internal correlations and are not random, which violates the linear model and severely impairs its predictive ability. It does not account for how the brain influences irregular heart rates. By contrast, Vicor's non-linear model presumes that the heart rate variation is not random and is caused physiologically (by the brain). Recent trials suggest that this may result in a more accurate analysis of HRV which can lead to earlier detection of autonomic nervous system dysfunction, more accurate identification of at-risk sudden cardiac death individuals, quantifying the risk of death in the critically ill and other applications related to the brain-heart relationship.

Several sensory motor loops which are controlled by the brain such as temperature, pH level (blood acidity), baroreceptor reflex (maintains blood pressure) and others have been shown to control heart rate. Vicor's Chief Scientist, Dr. James Skinner, found that the degree to which these sensory motor loops cooperate (i.e. – act in concert) influences the degrees-of-freedom of the heart rate's variability. Normally, these sensory loops should act independently. When the body is threatened by disease or trauma it signals these loops to coordinate in order to keep it alive. This coordinated state is not sustainable however, and can have very serious and deadly consequences including ventricular tachycardia (fast heart rhythm that can lead to ventricular fibrillation or death), ventricular fibrillation (heart quivers and fails to pump blood) and sudden cardiac death. By measuring the degrees-of-freedom of the heart rate variability, the PD2i® algorithm may be able to more accurately determine which individuals are at near-term risk of suffering serious or fatal consequences from this coordinated sensory loop condition and allow the patient to seek appropriate treatment beforehand.

The PD2i® technology requires a maximum data collection of only 1,000 heartbeats (roughly twenty minutes where the patient is hooked up to the ECG machine through electrodes) and does not require that the patient's heart rate is elevated, for example by running on a treadmill. These are other significant advantages over other competing technologies which can necessitate substantially longer collection times and require that the patient's heart be stressed – a potentially dangerous activity for patients with weak hearts. Test results on the Analyzer, which can be read on a computer screen or printed, appear as positive or negative and are easily discerned by a physician.

AUTONOMIC NERVOUS SYSTEM DYSFUNCTION

Autonomic nervous system dysfunction currently represents the biggest potential market for the Analyzer. While Vicor is not seeking FDA clearance to market the Analyzer specifically for ANS dysfunction testing, we believe, based on the size of the market, recent trial data, and suggested screening by the American Diabetes Association, that ANS/DAN testing represents a very attractive opportunity for Vicor.

The autonomic nervous system (ANS) acts as a control system for the body, functioning outside of our direct control. The ANS is part of the peripheral nervous system, controlling organs and muscles involuntarily. It controls visceral functions such as heart rate, blood pressure, respiration, salivation and urination.

Autonomic nervous system dysfunction, or dysautonomia, encompasses a wide variety of disorders of the ANS including tachycardia syndrome (significant increase in heart rate when standing from a sitting position), vasovagal syncope (fainting), mitral valve prolapse dysautonomia (chest pain from thickened heart valve) and pure autonomic failure (dizziness/fainting) among others. Depending on the severity of ANS dysfunction, the disorder can be severely debilitating with some individuals suffering from one or more of the following; excessive fatigue, excessive thirst, dizziness, anxiety, rapid or slow heart rate and fainting.

The causes of ANS dysfunction remain inconclusive but research has indentified several things that may be contributors to the disorder including; diabetes, hereditary factors, pregnancy, viral illness, Parkinson's disease and damage to the ANS system from physical trauma.

Diabetic Autonomic Neuropathy (DAN)

Autonomic nervous system dysfunction is particularly prevalent among diabetics and if left untreated can result in the individual suffering from symptoms of diabetic autonomic neuropathy or DAN. Diabetic autonomic neuropathy results from diabetics' sugar levels remaining too high for an extended period, resulting in nerve damage which can

severely negatively impact the quality of life of diabetics. DAN is a significant contributor to mortality rates among diabetics and is a major reason for increased costs of treatment among the diabetic population. The prevalence of DAN is still unknown and depending on the criteria used to evaluate the incidence rate, could be as little as 2% to as high as 90% of all diabetics. While DAN typically affects all parts of the ANS, its symptoms may be focused on a single organ or organ system. Clinical symptoms of DAN are most prevalent in the digestive system and include bloating, diarrhea, constipation, nausea and vomiting. Symptoms may also be evident in the cardiovascular system and can include increased heart rate, low blood pressure, fainting and nausea. However, clinical symptoms of diabetic autonomic neuropathy typically do not occur until long after the onset of diabetes, making early identification of the disorder extremely important. If left untreated, nerve damage from DAN can result in heart disease, loss of bowel control, kidney failure, impotence and blindness.

In a small (n=17) study titled, *Short-Term Heart Rate Complexity Determined by the PD2i Algorithm is Reduced in Patients with Type 1 Diabetes Melitus (DM),* the PD2i analyzer showed statistical significance in detecting ANS dysfunction in young DM patients. The study was chosen for presentation during the Poster Session of the 2010 Heart-Brain Summit in September. And in January 2011 Vicor announced that *Nonlinear PD2i heart rate complexity algorithm detects autonomic neuropathy in patients with type 1 diabetes mellitus*, a manuscript written by Vicor's scientific and medical teams which details PD21's ability to detect diabetic autonomous neuropathy, was accepted for publication in Clinical Neurophysiology, the official journal of the International Federation of Clinical Neurophysiology.

Cardiovascular Autonomic Neuropathy (CAN)

Cardiovascular autonomic neuropathy (CAN) is a common and very serious form of diabetic autonomic neuropathy which occurs in approximately 17% of type 1 and 22% of type 2 diabetics. CAN causes abnormalities in heart rate control and has been linked to postural hypotension (drop in blood pressure when standing up), myocardial ischemia (restriction in blood supply), sudden cardiac death and heart attacks. CAN can severely limit exercise capacity and increase the risk of an adverse cardiovascular event during exercise. Individuals with CAN are more likely to develop hypotension (low blood pressure) and hypertension (high blood pressure) after exercise. Studies have shown that diabetics with cardiovascular autonomic neuropathy are at an extraordinarily higher risk of dying than those without the disorder.

Suggested Screening for Diabetic Neuropathies

Patient history and physical examinations have proved ineffective in the early detection of DAN. Heart variability testing is now considered the best indicator of the disorder. In 2005 the American Diabetes Association published a statement titled *Diabetic Neuropathies* in which they recommended that all patients with diabetes should be screened for autonomic neuropathy through the use of heart rate variability testing. The statement suggests that all type 2 diabetics be screened at the time of diagnosis of the disease and type 1 diabetics screened five years after diagnosis. Specifically, the statement reads, "tests for heart rate variability, including expiration-to-inspiration ratio and response to the Valsalva maneuver and standing, may be indicated." The ADA suggests repeating these tests on an annual basis upon a negative screening for autonomic neuropathy.

We note, however that the ADA's recommended HRV testing using the Valsalva maneuver and expiration-to-inspiration ratio may have limitations relative to Vicor's PD2i® technology. Most importantly is that Vicor's Analyzer requires a smaller sample size and does not require the patient to raise their heart rate, the latter which can be particularly risky with cardiovascular autonomic neuropathy patients. The Analyzer, unaffected by noise or non-stationarity may also provide a more accurate diagnosis than the suggested testing measures. Given the prevalence of the disease and growing obesity epidemic in the U.S., we believe diabetic neuropathy screening represents an enormous opportunity for Vicor. The PD2i® technology potentially offers an earlier and more accurate diagnosis of DAN which the ADA has indicated can result in more effective treatment of the disorder and an improved patient prognosis.

According to the ADA statement; "The early recognition and appropriate management of neuropathy in the patient with diabetes is important for a number of reasons. 1) Non-diabetic neuropathies may be present in patients with diabetes. 2) A number of treatment options exist for symptomatic diabetic neuropathy. 3) Up to 50% of distal symmetric polyneuropathy (DPN) may be asymptomatic (patient shows no signs of the disorder), and patients are at risk of insensate (no feeling) injury to their feet. As > 80% of amputations follow a foot ulcer or injury, early recognition of at-risk individuals, provision of education, and appropriate foot care may results in reduced incidence of ulceration and consequently amputation. 4) Autonomic neuropathy may involve every system in the body. 5) Autonomic neuropathy causes substantial morbidity and increased mortality, particularly if cardiovascular autonomic neuropathy (CAN) is present."

Vicor received word in late September 2010 that the Institutional Review Board (IRB) approved the protocol for the company's Normal Range Study to be conducted at the University of Mississippi Medical Center. The study will be powered to determine "normal" heart rate variability ranges for people at rest and during exercise. The study results will be used to support an amended 510(k) filing for the PD2i Analyzer. Normal ranges will better allow physicians utilizing the Analyzer in determining when a patient is at risk if suffering an adverse cardiac event. While eventual FDA clearance for normal ranges will not specifically target DAN, we expect it to be a catalyst initially in usage of the instrument for this application.

Diabetic Market

According to the American Diabetes Association 2007 statistics, 23.6 million Americans have diabetes including 17.9 million diagnosed and 5.7 million undiagnosed with the disease. About 5% - 10% of all diabetics have type 1 diabetes. Approximately 1.6 million new cases are diagnosed each year. Diabetes is the seventh leading cause of death in the U.S. Heart disease and stroke are listed as the two most common related symptoms of diabetes-related deaths. The ADA estimates that approximately 75% of adults with diabetes have high blood pressure and 60% - 70% of all diabetics suffer from mild to severe forms of nervous system damage.

The 23.6 million Americans suffering from diabetes and the 1.6 million new cases diagnosed every year offers a huge market for HRV testing. Assuming 100% compliance of diabetics to the ADA suggested screening, this represents a potential HRV screening opportunity of over 18 million tests per year. Worldwide the market is exponentially larger. According to the World Health Organization, approximately 171 million people have diabetes. And while Vicor is not currently seeking FDA approval specifically for ANS/DAN testing, testing for the disorders are reimbursable under existing CPT codes. We believe the Analyzer offers family physicians, endocrinologists and internal medicine doctors a potentially more accurate diagnosis of DAN and assuming compliance of the ADA suggested testing by only a very small fraction of diabetics, offers Vicor a very substantial source of revenue.

SUDDEN CARDIAC DEATH (SCD)

The identification of individuals at risk of suffering from near-term sudden cardiac death offers another significant opportunity for Vicor. Sudden cardiac death is the most common cause of natural death in the U.S. with approximately 400,000 people dying from SCD every year. Roughly 90% of victims that experience SCD symptoms die. SCD differs from a heart attack, the latter which occurs due to the lack of blood flow to the heart as a result of blockage in coronary arteries which feed the heart. Sudden cardiac death, by contrast, is an electrical problem between the brain and the heart. Sudden cardiac death is characterized by the sudden and unexpected loss of heart function which is caused by arrhythmias (abnormal heart rhythms) or tachycardias (rapid heart beat). The most common deadly arrhythmia is called ventricular fibrillation which is an erratic, quivering (rather than proper contraction) of the heart muscle. When this occurs the heart is unable to pump blood to vital organs, resulting in death within minutes if left untreated. Where heart attack victims often experience chest pain just prior to succumbing to a heart attack, in most cases there are no warnings signs that an individual will suffer from SCD.

As brain death and permanent death start to occur in four to six minutes after SCD strikes, immediate cardiopulmonary resuscitation (CPR) and the use of a defibrillator are essential for survival of SCD victims. The defibrillator, either external or implanted in the body, will deliver a shock to the victim in order to restore normal operation of the heart. Studies have shown that SCD victims have a roughly 90% chance of survival if defibrillation is provided within the first minute of experiencing the event. Survival drops to between 30% and 50% if defibrillation is provided within the first five minutes of experiencing SCD. It is estimated that 95% of otherwise lethal ventricular arrhythmias were effectively terminated by the use of implantable cardioverter defibrillators (ICD).

Implantable cardioverter defibrillators are small (~3") electronic devices that monitor heart rate and rhythm. ICDs are a relatively new technology with the first implanted in 1980. The "brain" portion of the device is implanted under the skin in the upper chest. The device is connected to the heart chamber through leads which are guided through veins inside the chest. When the ICD indentifies abnormal heart rhythms it delivers a shock to the heart which restores normal heart function.

While ICDs have shown to be very effective in terminating arrhythmias and tachycardias, only a small portion of SCD victims were fitted with an ICD at the time of SCD onset. Moreover, a substantial number of at-risk SCD victims still do not qualify for ICD implantation although Medicare revised their guidelines for qualification of ICD implantation in 2005. While the revised Medicare guidelines lowered the hurdle for patients to qualify for ICD implantation, they still only focus on the condition of the heart and exclude consideration of the brain as a trigger for

SCD. In essence, the new guidelines broadened the demographic (i.e. – included milder forms of heart disease) for ICD implantation eligibility but failed to effectively identify those individuals at-risk of SCD. The result is a substantial number individuals at-risk of SCD will still remain ineligible to receive reimbursement for ICD implantation through Medicare.

The new guidelines will also compound the problem of over-implantation of ICDs as more people that are not at-risk of SCD are fitted with the devices. It has been shown that the vast majority of people who have been fitted with an ICD will not suffer from the onset of SCD and therefore, may have been inappropriately diagnosed as at-risk of experiencing sudden cardiac death. A meta-analysis of two clinical studies (*Cost-Effectiveness of Implantable Cardioverter-Defibrillators* October 2005 and *Amiodarone or an Implantable Cardioverter-Defibrillator for Congestive Heart Failure* January 2005) that were published in *The New England Journal of Medicine* showed that 76% of patients which were identified as at-risk of suffering from near-term SCD, in fact did not experience symptoms of an SCD episode (i.e. – the ICD was not needed). Over-implantation results in unneeded cost and the risk and discomfort of surgery – this is in addition to the potential to suffer mental anguish over the thought of being at-risk of SCD.

The use of heart rate analysis as an accurate predictor of SCD is still very much in its infancy. Vicor's PD2i® algorithm may be the most accurate and effective technology in predicting the risk of near-term sudden cardiac death and directly addresses the issues of over- and under-implantation of ICD. The company has demonstrated the efficacy of the PD2i® technology in several self-sponsored trials as well as a collaborative study with the University of Rochester and the Catalan Institute of Cardiovascular Sciences in Barcelona. This latter study was the basis for the July 1, 2010 510(k) filing seeking a claim for the identification of congestive heart failure patients at elevated risk of cardiac mortality.

Trial Data - Sudden Cardiac Death

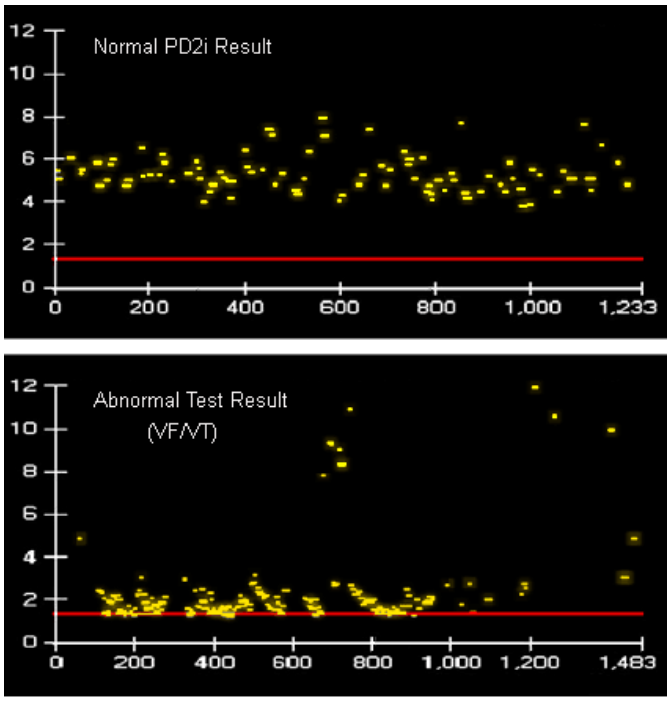
Heart rate variability analysis has not been widely adopted as a measure of risk of SCD because it has not demonstrated sufficient statistical predictability. This appears to be due the inadequate sensitivity and specificity of models using a linear algorithm. Vicor's PD2i® non-linear model, by contrast, has shown to be very accurate in identifying patients at risk of suffering near-term SCD in recent studies (these tests were not reviewed by the FDA). Vicor's Cardiac Analyzer™ (CA) is being developed to identify patients that are at high-risk of sudden cardiac death within the next six to twelve months.

Vicor's technology determines which individuals are and are not at risk of experiencing near-term SCD by an analysis of the time-dependent point correlation dimension (PD2i®) algorithm. In simple terms, ECG data are fed into Vicor's software which then identifies which individuals are at-risk of an adverse arrhythmic event based on the tracking of the statistical measure "degrees-of-freedom" in the ECG data. Vicor has determined, with statistically significant accuracy, that ECGs with point correlation dimension scores less than or equal to 1.4 were associated with high risk of ventricular fibrillation (VF) or sustained ventricular tachycardia (VT).

"…Using PD2i® Algorithm for Risk Stratification of Arrhythmic Death" Analysis

Vicor demonstrated the ability of the CA to accurately predict the risk of VF/VT in a small trial called *Nonlinear Analysis of the Heartbeats in Public Patient ECGs Using Automated PD2i® Algorithm for Risk Stratification of Arrhythmic Death.* The study, which was published in the April 2006 issue of *Therapeutics and Clinical Risk* Management, included 44 sets of ECGs, each of which had a known outcome (22 VF/VT and 22 no VF/VT). The 22 which acted as the control group were randomly selected and did have arrhythmias but did not have VT/VF. The analysis was completed using blinded and automated procedures. Results showed the CA, by identifying which ECGs had PD2i® scores $\leq$ 1.4, accurately determined with 85% accuracy those individuals that did go on to experience ventricular fibrillation/ventricular tachycardia. It also identified with 100% accuracy those individuals who would not go on to experience VF/VT.

The data plots below are from the *Nonlinear Analysis of the Heartbeats*…trial. The PD2i® plot (top) is from a normal healthy subject. The bottom graph shows data from a patient who went on to experience VF/VT. PD2i® score of 1.4 is identified by the red line in both graphs. The healthy-patient graph has no data points near the red line, while the ECG data from the VF/VT patient shows repeated scores at and below 1.4 PD2i®. The graphs also demonstrate the ease of interpretation of the data.



Vicor Technologies, Inc

***"Risk Stratification for Arrhythmic Death"* Analysis**

In another trial, the CA Analyzer™ correctly identified with 85% accuracy those patients that would experience sudden cardiac death within the next 12 months. Results also showed the CA identified with 96% accuracy those patients that would not experience SCD within the next twelve months.

"Risk Stratification for Arrhythmic Death in an Emergency Department Cohort"

918 Total enrolled, 819 completed study

	AD	**no AD**
PD2i Pos	26 TP	103 FP
PD2i Neg	1 FN	595 TN

Sensitivity = 26/(26 + 1) = 96%
Specificity = 595/(595 + 103) = 85%
Negative predictive value = 595/(595 +1) = 99%
Positive predictive value = 26/(26 + 103) = 20%
Relative risk = 26/1 ×(595 + 1)/(26 + 103) = 24.2

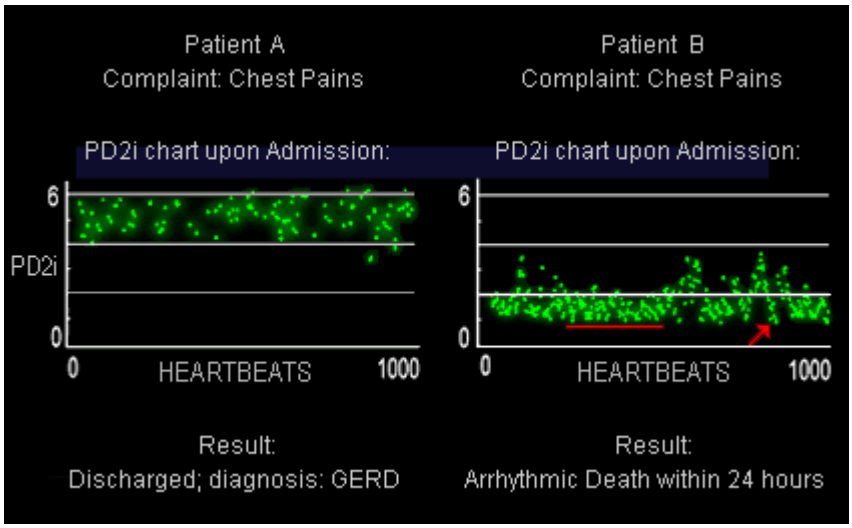
p < 0.01, Fisher's Exact Test for contingency tables

AD, arrhythmic death; TP, true positive; FP, false positive;

Dovepress/Therapeutics and Clinical Risk Management.

The trial, titled *Risk Stratification for Arrhythmic Death in an Emergency Department Cohort: A New Method of Nonlinear PD2i® Analysis of the ECG*, was published in the August 2008 issue of *Therapeutics and Clinical Risk Management*. The study enrolled 918 patients (819 patients completed the study) from six emergency departments after being admitted with chest pain and determined to be at risk of acute myocardial infarction (heart attack). The goal was to accurately predict arrhythmic death (i.e. – sudden cardiac death) using prospective data. Brief (~1,000 heartbeats, ~15 minutes) electrocardiograms were recorded and PD2i® results obtained. All-cause mortality at one-year was 6.2%, with 3.5% of those being arrhythmic deaths. Of the arrhythmic death fatalities, 34% were without previous history of myocardial infarction (MI) or diagnosis of acute myocardial infarction. This is particularly noteworthy as Medicare uses history of MI as one of the primary conditions for patients to qualify for ICD implantation.

The data plots below are from the *Risk Stratification for Arrhythmic Death*…study. Both patients were admitted to the hospital after complaining of chest pains. Patient "A" was discharged from the hospital within 24 hours of admission. He did not die of SCD within a one-year follow-up period. Patient "B" died from SCD in the hospital less than 24 hours after admission. The Analyzer correctly identified patient "B" as at-risk of an adverse cardiac event from the data points at or below the 1.4 PD2i® threshold (red line and red arrow).



Vicor Technologies, Inc.

***"Comparison of Linear-Stochastic and Nonlinear-Deterministic Algorithms"* Analysis**

A third analysis of trial data sponsored by Vicor called *Comparison of Linear-Stochastic and Nonlinear-Deterministic Algorithms in the Analysis of 15-Minute Clinical ECGs to Predict Risk of Arrhythmic Death* compared the CA to linear as well as other non-linear models in the prediction of arrhythmic death (AD). The study, which was published in the August 2009 issue of *Therapeutics & Clinical Risk Management*, included data from 397 patients admitted to emergency departments due to chest pain and determined to be at low-to-high risk of myocardial infarction (MI). Fifteen minute ECGs were recorded which were then analyzed by three non-linear algorithms (PD2i®, detrended fluctuation analysis or DFA, and approximate entropy or ApEn) and four conventional linear-stochastic measures (standard deviation or SDNN, mean of normal or MNN, 1/f-Slope, and low frequency power/high frequency power or LF/HF). Each of these algorithms had a previously published indication for use in stratifying risk by clinical heartbeat analysis that was well established, over at least a decade. The study sponsors noted that they believe these seven were thought to be representative of the common and appropriate linear and non-linear algorithms.

Patient follow-up occurred at thirty days, six months and one-year. Primary clinical outcome measures were all-cause death, documented fatal arrhythmias, and presumed arrhythmic deaths. A three-member, blinded committee was used to assess undocumented cause of death. One-year data was available for 312 of the 397 enrolled patients. Results showed that the sensitivity of prediction of AD was relatively high for several of the algorithms, but sensitivity (correctly predicting who will suffer AD) and specificity (correctly predicting who will not suffer AD) together were only statistically significant for only PD2i® and MNN. PD2i® sensitivity and specificity at 30, 180 and 360 days was 100%/58%, 91%/58% and 95%/58% (Table 1 below is at 360 days), respectively. In addition the PD2i® algorithm showed a considerably higher "relative risk" score compared to all of the other measures. "Relative risk" is a statistical measure that considers the true-positive/false-negative (predicting AD-suffering AD/predicting no AD-suffering AD) ratio and emphasizes the severe undesirability of a false-negative. PD2i® not only showed statistical predictability of AD in patients with acute myocardial infarction (AMI) and history of MI but was the only algorithm which demonstrated statistical significance in prediction of AD in subgroups comprised of non-AMI and non-post-MI patients.

Table 1 Comparison of linear and nonlinear algorithms in 312 low-to-high-risk patients presenting in the emergency department with chest pain and assessed risk of AMI > 7%. All subjects had ECGs recorded, follow-up completed, and no paced rhythms. The defined arrhythmic death outcomes are expressed as true or false predictions (T or F) by positive or negative algorithmic tests (P or N). The same edited N-N data set was used for the comparative algorithmic analyses

Nonlinear deterministic algorithms[a–d]							
PD2i ≤ 1.4	**PD2i > 1.4**	**DFA-OUT**	**DFA-IN**	**1/fS ≤ −1.07**	**1/fS > −1.07**	**ApEn ≤ 1.0**	**ApEn > 1.0**
TP = 20	TN = 130	TP = 6	TN = 52	TP = 6	TN = 149	TP = 4	TN = 161
FP = 96	FN = 1*	FP = 218	TN = 4	FP = 75	TN = 14	FP = 57	FN = 16
SEN = 95**	SUR = 65	SEN = 30	SUR = 17	SEN = 30	SUR = 65	SEN = 20	SUR = 65
SPE = 58**	OUT = 0	SPE = 19	OUT = 6	SPE = 67	OUT = 3	SPE = 74	OUT = 9
REL >> 23**	N = 312	REL = 0.13	N = 312	REL = 0.86	N = 312	REL = 0.80	N = 312
Linear stochastic algorithms[e–i]							
SDNN ≤ 65	**SDNN > 65**	**MNN ≤ 750**	**MNN > 750**	**LF/HF ≤ 1.6**	**LF/HF > 1.6**	**LF(ln) ≤ 5.5**	**LF(ln) > 5.5**
TP = 19	TN = 55	TP = 19	TN = 154	TP = 7	TN = 188	TP = 19	TN = 90
FP = 197	FN = 6	FP = 98	FN = 6	FP = 62	FN = 18	FP = 160	FN = 6
SEN = 76	AF = 29	SEN = 76	AF = 29	SEN = 28	AF = 29	SEN = 76	AF = 29
SPE = 23	OUT = 6	SPE = 61	OUT = 6	SPE = 76	OUT = 8	SPE = 36	OUT = 8
REL = 0.93	N = 312	REL = 4.33*	N = 312	REL = 1.16	N = 312	REL = 1.69	N = 312

Notes: **p ≤ 0.001; binomial probability test; with multiple-test alpha-protection (alpha level required is 8-fold smaller); expansion of $(P + Q)^n \times$ eightfold protection implies p = 0.00016; also p ≤ 0.001 by Fisher's exact test for row vs column associations in a 2 × 2 contingency table; all others in Table 1 are not significant by binomial probability test or Fisher's exact test. [a]PD2i, point correlation dimension (positive if minimum PD2i ≤ 1.4 dimensions, with a systematic low-dimensional excursion of more than 1 PD2i value); cases of randomized-phase SUR were identical to the cases of %N < 30%. [b]DFA-OUT, detrended fluctuation analysis (α_1 [short-term] is positive, if outside normal range of 0.85 to 1.15); randomized-sequence surrogate rejections (SUR). [c]1/f S, 1/f Slope (positive, if ≤ −1.075 for slope of log[microvolts²/Hz] vs log [Hz] integrated over 0.04 Hz to 0.4 Hz). SUR = randomized phase. [d]ApEn, approximate entropy (positive with cut-point ≤1.0 units, slope distance). SUR = randomized phase. *This single AD patient died at 79 days and may not be a true FN; the ECG was recorded prior to two normal clinical ECGs, followed by a third positive one (ie, the patient could be classified as an "evolving acute MI" who may have been TN at the time the ECG was recorded). [e]SDNN, standard deviation of normal beats (positive, if ≤65 msec; for positive, if ≤ 50 msec, TP = 17). [f]MNN, mean of normal R-R intervals (positive, if ≤750 msec). [g]LF/HF, low frequency power (0.04 to 0.15 Hz)/high frequency power (0.15 to 0.4 Hz) (positive, ≤1.6). [h]LF(ln), low frequency power (0.04 to 0.15 Hz), normalized by natural logarithm (positive, ≤5.5).

Abbreviations: AF, atrial fibrillation-rejection (required for linear stochastic algorithms); AMI, acute myocardial infarction; ECG, electrocardiography; OUT, outlier-rejection; REL, relative risk; SEN, sensitivity (%); SPE, specificity (%); SUR, surrogate-rejection; N, total number of subjects.

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While there are certain limitations to PD2i® use as a predictor of SCD, we believe the trial data indicates the algorithm may offer the most accurate diagnosis of at-risk SCD patients. One drawback is that patients with atrial fibrillation and arrhythmia rates > 10% of beats can not be diagnosed using non-linear algorithms such as PD2i®.

We also mention certain caveats to the trial data detailed above, none of which, however negate the results of the trials nor necessarily diminish the conclusions asserted by the authors. First, these trials were not reviewed by the FDA, the protocols were not approved by the FDA and the conclusions were not presented to or critiqued by an independent panel. The *Nonlinear Analysis of the Heartbeats…*trial included a very small (44 patients) sample size which, when extrapolated to larger patient population, subjects the conclusions of the trial to larger degree of error. And, as noted, a number of patients were excluded from the trials which limits, albeit only modestly, the utility of the P2Di algorithm.

"Prognostic Significance of Point Correlation Dimension Algorithm in CHF"

Vicor's Cardiac Analyzer™ was used to analyze data collected from a trial dubbed MUSIC (Merte Subita en Insufficiencia Cardiaca) for the prediction of SCD in congestive heart failure patients. In March 2009 Vicor announced a collaboration with the University of Rochester and the Catalan Institute of Cardiovascular Sciences in Barcelona which are sponsoring the data analysis. The collaboration, entitled "Prognostic Significance of Point Correlation Dimension Algorithm (PD2i®) in Chronic Heart Failure", used the CA to predict SCD in 651 patients with congestive heart failure. The study was chosen for presentation during the Poster Session of the 2010 Heart-Brain Summit in September. An abstract from the study was also chosen for presentation at the American College of Cardiology (ACC) 60th Annual Scientific Session on April 4, 2011.

The MUSIC trial enrolled more than 1,000 patients between 2003 and 2004 with patient follow-ups occurring over the following 44 months. MUSIC was billed as the largest heart failure population ever studied and the first trial to document abnormal heart rhythm as a predictor of SCD. Iwona Cygankiewicz, MD, lead author of the study noted that, "Our study documented that heart rate turbulence (HRT) might be considered a useful tool to identify heart failure patients at high risk of death, including high risk of dying suddenly." Relative to the applicability of the analysis, Cygankiewicz believes "HRT may help physicians more effectively manage heart failure patients by indicating the need for more frequent follow up visits at specialized heart failure units and more intensely-applied therapy, including ICD implantation in high-risk patients."

During the 44-month follow-up period 52 patients died from sudden cardiac death. On May 19, 2010 Vicor announced that they received results from the study from the U of R. Results showed that the Cardiac Analyzer was effective in predicting total mortality, cardiac death and heart failure death. The results were highly statistically significant (p value = .004). Vicor submitted a 510(k) notice on July 1, 2010 seeking a claim for the identification of congestive heart failure (CHF) patients at elevated risk of cardiac mortality. We were hoping Vicor could be marketing for this claim before year-end 2010 but Vicor has yet to receive FDA clearance. We continue to expect clearance in the near-term.

- Based on the compilation of positive trial data and other anecdotal information, we expect FDA to grant marketing clearance for the SCD indication. This will offer Vicor a very potent marketing message with which to target cardiologists and other physicians. With approximately seven million people with history of myocardial infarction and five million CHF sufferers in the U.S. with 400,000 new cases every year, the marketing audience is enormous and growing fast. With waning faith in previous unproven technologies in determining risk of SCD and the continuing problem of over-and under-implantation of ICDs, we expect the Analyzer to receive significant interest from cardiologists. With reimbursement codes already in-place and Vicor also potentially gaining FDA marketing clearance for a trauma indication (discussed below), we believe system sales could significantly benefit. (For clarity purposes - physicians can already use the Analyzer for any indication they feel it is useful for – FDA clearance of specific indications allows Vicor to explicitly market for those indications, however).

TRAUMA

Vicor is developing the Analyzer for a third application, trauma. The product, dubbed *P2Di-VS*™ ("Vital Sign" or "VS"), is being developed in collaboration with the U.S. Army Institute of Surgical Research (USAISR) and is expected to be used to assess the severity of critically injured combat casualties to determine the need for immediate life-saving intervention in those trauma victims who are at high-risk of imminent death. Civilian triage and trauma emergency response (i.e. – ambulatory) are other applications of the VS.

In January 2008 Vicor entered a collaborative research and development agreement with the USAISR for *"Prediction of Injury Severity and Outcome in the Critically Ill Using the Point Correlation Dimension Algorithm (PD2i®)".* The Army is using the Analyzer in an attempt to assess the severity of injury and probability of survival of critically injured combat casualties and critically ill civilian patients. Having the ability to accurately and quickly diagnose the severity of injuries allows for emergency responders to sort victims based on their need for medical treatment. Several cohorts are being studied including trauma victims, patients in intensive care units and combat casualties. The Army has presented findings of their analysis at several conferences in the U.S. and in Europe.

The VS has gone through a variety of testing by the U.S. Army. In the latest trial, with the use of the P2Di-VS™, the USAISR examined 325 trauma victims to determine which patients would die of their injuries. By looking at the interplay between the victims' heart and brain, the VS enabled physicians to correctly identify all twenty patients that would die of their injuries. Importantly, conventional triaging techniques had indentified only six of the twenty patients as requiring lifesaving intervention. In November 2009 Dr. Andriy Batchinsky, a researcher with the USAISR, made a presentation at the American Heart Association's Resuscitation Science Symposium in which he identified the PD2i-VS™ as the most promising diagnostic tool for in-field trauma triage. Vicor expects to use data from their latest trial to support a 510(k) FDA filing for a claim of diagnosing those patients at imminent risk of death from trauma. We expect Vicor to submit 510(k) for trauma following FDA clearance for the cardiac mortality indication. We believe Vicor could be marketing for both cardiac mortality and trauma in 2011.

Vicor, at the request of the USAISR, has completed programming of the VS which may also enable it to act as a continuous vital sign monitor. With this capability, the VS would provide an initial result with three minutes of collected data and an updated status every minute afterwards. The monitoring application would indicate the ongoing status of the patient's condition and alert critical care personnel if lifesaving intervention was required.

The VS would have applicability not only in war trauma but also as a diagnostic tool for civilian emergency responders and critical care personnel. With over 38 million emergency response calls in the U.S. every year, this would significantly expand the potential market for the product. The VS would enable paramedics to quickly and accurately assign a level of severity to victims' injuries which would be particularly important in situations with multiple trauma victims (i.e. – car accidents, collapsed building, etc.). After arriving at the hospital, the VS monitoring application would provide critical care personnel with ongoing status updates of the patient's condition.

Vicor has several studies planned and ongoing testing the VS as a diagnostic tool for in-field trauma and as a monitoring instrument including studies at Massachusetts General Hospital, the University of Mississippi Medical Center and further studies by the USAISR. Data from these studies is expected to be used for additional 510(k) filings seeking expanded marketing clearance including use as a continuous vital sign monitor.

While the USAISR clearly has an interest in the PD2i® technology, we do not have any indication that the U.S. government will eventually place orders for purchase of the Analyzer. We believe the most immediate and attractive market for the VS is for civilian use. Upon FDA clearance for the trauma indication, we expect Vicor to target hospitals and emergency service providers.

OTHER ONGOING STUDIES

In addition to the various studies mentioned above, the PD2i Analyzer is being used in several other clinical trials including;

Study of Heart Rate Variability Using the PD2i Algorithm in a Cardiac Rehabilitation Population (SHeRPA): is a pilot study being conducted by Dr. Anthony Gemignani under a Brown University Fellowship in cardiovascular medicine. The goal is to determine whether the Analyzer can be effective in determining whether cardiac rehabilitation has been achieved or additional rehabilitation is needed in patients that have recently suffered from myocardial infarction, percutaneous coronary intervention or coronary artery bypass graft.

Normal Range Study:
this study is in collaboration with the University of Mississippi. Vicor received word in late September that the Institutional Review Board (IRB) approved the protocol for the company's Normal Range Study to be conducted at the University of Mississippi Medical Center. The study will be powered to determine "normal" heart rate variability ranges for people at rest and during exercise. The study results will be used to support an amended 510(k) filing for the PD2i Analyzer. Normal ranges will better allow physicians utilizing the Analyzer in determining when a patient is at risk if suffering an adverse cardiac event.

Concussions in NCAA Athletes:
another study being done in collaboration with the University of Mississippi, this is powered to assess the extent of concussions and the risk of subsequent adverse pathological events in college athletes using the PD2i Analyzer. Vicor received IRB approval to commence enrollment for the trial in October 2010.

Universidad San Francisco d Quito – Ecudaor:
Vicor entered a collaborative agreement with USFQ in February 2010 to use the Analyzer in the Ecuadoran population to identify those individuals at high risk of SCD and/or ANS dysfunction. A population of 4,700 has been identified for possible screening with the Analyzer.

Studies of PD2i and Interventional Cardiology Effects (SPICe):
SPICe is being conducted by Dr. Granville Vance, the first physician to purchase the PD2i Analyzer. The study will be powered to determine the ability of the Analyzer to identify the need for intervention due to the presence of coronary artery disease and the beneficial change due to subsequent intervention (stent, cardiac catheterization, bypass). The idea for the SPICe study was borne when Dr. Vance tested a patient using the Analyzer an found the individual had coronary artery disease while no other test had indicated this. The patient underwent further testing and subsequently was treated with a cardio catheter. Following the procedure another PD2i test was done which showed normal scores. We believe the outcome of this study could have a significantly positive impact and be a further catalyst to gaining interest from physicians in the Analyzer

ECONOMICS

Vicor generates revenue from both the sale of the Analyzer system as well as on a per-test basis. The Analyzer system consists of a private-label digital electrocardiograph machine that incorporates automated blood pressure recording and a laptop computer which utilizes proprietary software. When a physician runs an ECG, the Analyzer will access the internet and sends the recorded ECG files to Vicor's remote server where the files are analyzed by the PD2i® algorithm. The physician then has access to the analyzed results through an electronic health record along with a report and information that he can use to bill both public and private insurers. The physician can use currently available CPT codes (reimbursement codes used by Medicare/Medicaid as well as a majority of private

insurers) to bill and collect for services provided by the Analyzer. The current billable CPT codes are for the measurement of heart rate variability in response to controlled exercise and paced respiration (we note that this is not a heart stress test) as well as recording and analyzing an EKG.

We initially expected Vicor to sell the Analyzer system between $5,000 - $5,500 per unit. However, based on the relatively low level of system placements to-date, we believe Vicor will begin discounting the sales price in an effort to increase placements. We think this could mean selling the systems at or below cost (which we peg at around $3,300). During the third quarter 2010 Vicor also began offering the units for lease and during the third quarter had signed three lease agreements. The leases are a financing vehicle which essentially allows customers to make installment payments on the Analyzer in lieu of one lump sum. Vicor recognizes the lease revenue over the term of the lease – typically 12 months.

Vicor also bills physicians on a monthly basis for each test performed. We expect product sales margins may run negative until placements pick up and Vicor can gain some pricing power and potentially some manufacturing leverage. Testing margins should run in the 70% - 75% range. CPT code reimbursement to physicians will likely be in the range of $80 - $160 per test, $25 - $50 of which will be passed onto Vicor. Based on these estimates, physicians would break even on the cost of the Analyzer after, at most (this calculation assumes only $30/test income to the physician – this could be as high as $135/test), 180 tests performed. Assuming just one test is performed per Analyzer per day, this puts break-even at eight months or less (depending on the purchase price of the machine). We think a more realistic scenario, especially as the Analyzer is approved for additional indications, is one to three tests per day. Depending on the level of reimbursement, this equates to an ongoing income stream to physicians of between $8,000 and $100,000 per year per device, following pay-off of the cost of the Analyzer system. And using these same assumptions, Vicor would generate per-test annual revenue of between $7,000 and $40,000 per unit.

The per-test model will not apply to tests performed in the field (i.e. – combat or emergency response) where Vicor is instead considering term licensing agreements.

COMPETITION

The use of heart rate variability in the diagnosis of ANS, SCD and trauma is limited, mostly as result of the relatively unpredictable reliability of prior technologies. This has made competition in the space also relatively sparse.

A direct competitor to the Analyzer for the ANS indication is Ansar Group which markets a noninvasive ANS monitoring device called ANX 3.0 which the company sells for $40,000. More traditional, yet indirect competitors for ANS diagnosis include clinical screening tests, which include patient history and a physical exam. However, as we noted above, traditional clinic exams can be highly ineffective in early detection of ANS/DAN.

Risk of sudden cardiac death screening through HRV analysis is also in its infancy. Vicor's main direct competitor for this indication is Cambridge Heart, Inc. While Cambridge has sold several products in the U.S. and Europe since 2000, Vicor's technology offers physicians and patients certain advantages such as not requiring a cardiac stress test (elevated heart rate) and is not affected by common cardiac drugs. In addition, the upfront cost of the Analyzer is significantly less than Cambridge's competing products. We believe the trauma indication also has very few direct competitors.

Given the poor history of competing technologies and lack of a dominant player in the HRV space for the indications that Vicor is seeking, we believe the company is positioned very well to vigorously compete for market share. While the utility of PD2i® algorithm, like other non-linear algorithms, can be limited in certain cases, we believe this is more than offset by certain advantages not found in competing products. We believe the significantly improved accuracy, relatively short data collection time (~ 20 minutes), lack of required stress-test and significantly lower upfront costs offer advantages attractive to physicians which should bode well for sales and uptake of Vicor's Analyzer.

FINANCIAL CONDITION/CAPITAL STRUCTURE

At September 30, 2010 the company had $331k in cash and $2.89 million in debt. In October 2010 Vicor raised an additional $2.7 million (~ $2.5 million net after underwriting fees) through the sale of new convertible debt and warrants. Pro forma for this financing cash balance stood at $2.83 million. Debt at September 30, 2010 consisted

of $300,000 in bank loans, $360,000 in unsecured (convertible) loans and $2.23 million in convertible debt. See included table at end of report for capital structure.

Preferred stock
The company had two series ("A" and "B") of convertible cumulative preferred stock outstanding. The 8% dividends on both classes of preferred shares are cumulative and payable in kind (PIK). The 157,592 "A" shares, along with $335k in accumulated dividends were converted to 417k common shares in September 2010. The 5.19 million "B" shares are convertible into common shares at a 1:1 ratio. Accumulated dividends convert to common stock at $0.80 per common share. Accumulated dividends were $834k on the "B" shares through 9/30/2010. On July 29, 2010 Vicor's Board of Directors authorized an increase in the number of authorized Series B preferred shares from 5.5 million to 8.0 million.

Short-term debt
$660k of total debt is short-term, $360k (2004 Notes and 12% promissory notes) of which the maturities are being extended on a month-to-month basis. The remaining $300k of short-term debt is a bank loan. Maturities on the bank debt have been extended at various times in the past. The bank debt is senior, secured by $300k in certificates of deposit of Vicor's CEO (David Fater) and is held by BB&T Bank, with which Vicor has had a long-standing relationship. The bank debt and 2004 Notes pay cash interest while the 12% promissory notes are PIK. The 2004 Notes and 12% promissory notes are pari-passu with the 8% senior convertibles (all of which had been converted through Q2 2010) and are held by major shareholders, directors and executives of Vicor.

Long-term debt
$2.23 million of total debt (as of 9/30/2010) is long-term which consists of 8% subordinated convertible notes.

8% senior convertibles
All of the 8% senior convertible notes were converted to common stock as of 6/30/2010.

8% subordinated convertibles
The 8% sub converts were subordinated to the senior 8% converts and mature on October 7, 2012. The holders of the notes are free to convert at anytime now that the 8% senior converts have been redeemed. They are mandatorily convertible at the lesser of $0.80 per share of common stock or 80% per share of common stock upon Vicor issuing registered debt or equity in an amount of at least $3 million.

10% convertibles (issued 10/2010)
The 10% convertibles are pari with the 8% sub converts and mature on September 30, 2012. The holders are free to convert at any time into common at the lesser of 75% of the average closing price of the common for the 10-day trading period prior to the issue date or six-months following the closing date at 75% of the average of the three lowest closing prices of the 10 trading days prior to the conversion date. Vicor must offer to redeem at a pre-determined premium all (a portion of) of the notes upon issuance of $5 million (less than $5 million) in new debt or equity. The bonds pay monthly cash or PIK interest at Vicor's option – PIK interest is calculated as the implied conversion price.

Cash-burn
The company burned through $3.67 million in cash during 2009, including $1.02 million in the fourth quarter. Cash used in operations was $1.11 million, $2.85 million and $3.77 million through the first three, six and nine months of 2010, respectively. Cash burn excluding changes in working capital averaged approximately $460k per month during the most recent quarter. The increase in cash burn from 2009 is a result of initial sales and marketing programs for the Analyzer and expenses related to new clinical trial programs and regulatory activities. Cash operating expenses, which had averaged approximately $253k per month during 2009, are running at about $400k - $420k per month in 2010. We estimate cash flow from operations, which was ($3.67) million in 2009, to fall to ($5.1) million in 2010. Going into 2011, we expect the growth in operating expenses to moderate and operating cash flow to benefit from higher sales volumes – we currently forecast cash used in operations to be approximately $4.8 million in 2011. Beyond 2011 our model assumes sales continues to outpace the growth in operating expenses, mostly fueled by testing revenue.

Cash position
While the company is highly levered with a meager cash balance and meaningful levels of short-term debt exposure, we have little concern relative to near-term liquidity. The bank loans are secured with cash equivalents and management has indicated their relationship with BB&T remains strong. The other near-term debt is held by shareholders, directors and executives of the company which we believe makes calling the notes highly unlikely. With interest payments almost exclusively PIK, the company is not at-risk of tripping covenants of the convertible

debt. The $2.8 million cash balance (pro forma for the October debt issuance) and cash from operations should be sufficient to fund operations for approximately another 6 months. The company continues to successfully raise cash through ongoing debt issuance, which we believe can continue for some time. Vicor also recently (July 2010) increased the number of authorized Series B preferred shares from 5.5 million to 8 million, which potentially offers another financing alternative.

Vicor is also looking to raise additional equity in order to clean up the balance sheet, although we now think this not likely to happen until sometime in 2011 (our prior expectations were that this might happen before year-end 2010). An equity offering of at least $3 million would substantially clean up the balance sheet - automatically converting all the preferred stock as well as the subordinated 8% convertibles. It would also mandate that the 2004 Notes and 12% promissory notes be redeemed, leaving only the secured bank debt and a portion of the new 10% convertibles on the balance sheet. A sale of at least $5 million in new common stock would take out all of the debt of the balance sheet. While an equity offering and resulting debt conversion will be highly dilutive, it should allow the company forego additional financing until it becomes cash flow positive. Our model assumes Vicor raises approximately $12 million through a public equity offering towards the middle of 2011.

OUTLOOK

The company made its initial sale in January 2010, during which time they also signed a distribution agreement covering three U.S. states. While sales have been well below our estimates, our positive long-term outlook for Vicor remains unchanged. Of greater importance is that it appears physician interest in the PD2i Analyzer™ is real and that Vicor's business model is operating as hoped. Vicor's ability to generate testing revenue, albeit lower than we had initially modeled, is perhaps the most encouraging sign as this component of revenue (as opposed to instrument sales) is what we expect to be the catalyst to exponential long-term growth for the company. While near-term revenue is mostly a function of the number of units ("printers") placed, longer term success of Vicor is much more reliant on a number of other factors, most notably per-test ("printer cartridges") revenue. Unfortunately venturing an accurate guess of the number of units that Vicor will sell may be a much easier proposition than is forecasting testing revenue, especially as we look into 2011 and beyond. Among the challenges in forecasting per-test revenue is that it will be determined by a number of different components (including number of units placed, price per test charged by Vicor, utilization rate of the Analyzer, and rate of insurance reimbursement to physicians), the ultimate values of which can fall within wide ranges. Slight errors in accurately predicting the values of one or more of these components can result in significant flaws in our financial model.

Our predictions for revenue and gross profit are based on what we believe to be reasonable (i.e. – not overly optimistic nor overly conservative) assumptions relative to unit sales, utilization rate, and per-test reimbursement to physicians and Vicor, among other factors (see "Sales/GM Detail" appendix at end of report). Vicor's "printer, printer cartridge" business model can be highly profitable as high margin per-test revenue can grow exponentially with only moderate growth in unit placements. This means that depending on the level of revenue generated per-test, Vicor may only need to sell a somewhat modest number (~ 500) of units to turn a net profit and generate positive cash flow. Of course we also assume that physicians embrace Vicor's technology, find enough utility for the Analyzer to make a reasonable financial return and experience no serious issues relative to insurance reimbursement – the first two do not appear to be an issue – however, concerns from physicians over how changes to Medicare reimbursement may affect testing reimbursement with the analyzer appears to be a hindrance in accelerating unit placements – this will be something to watch going forward.

We expect sales growth to remain lackluster through the remainder of 2010 but to pick up from the extremely disappointing showing during Q2. We estimate Vicor sold approximately 25 units during the first half 2010 (all during Q1 with no product sales in Q2). Vicor began leasing the units beginning in Q3, which resulted in three additional units placed. Vicor will recognize the revenue from the leases (we estimate at $5k per unit) over the 12-month lease term. Going into the fourth quarter unit placements should benefit from Vicor bringing on a national sales manager (Sept 2010) and contracting with several (~50 through December 2010) new independent sales reps in various large cities throughout the U.S., as well as potentially from positive publicity (such as the Poster Session presentation at the Heart-Brain Summit). With the SCD indication now filed for FDA clearance, we now expect Vicor to turn its attention on getting the trauma indication filed. Additional approvals will substantially enhance Vicor's marketing message which should result in greater interest from physicians. We estimate Analyzer unit placements (through outright sales as well as leases) will be approximately 50 in all of 2010. We expect about 75% of revenue in 2010 to come from product sales but as the installed base grows so should the contribution from per-test revenue. We look for sales of $189k in fiscal 2010, including $138k in product sales and $51k in testing revenue. We expect gross margins to show consistent sequential growth as high margin per-test revenue

increases as a percent of total revenue. We expect operating expenses, which were $5.33 million in 2009 to spike to $6.45 million in 2010.

The balance sheet remains highly levered and with headcount additions, ongoing clinical trials and regulatory activities occurring throughout 2010, operating expenses will materially increase. Cash flow from product sales and incremental per-test revenue will provide virtually no offset to operating expense growth and will be far from sufficient to sustain operations. We believe the company can continue to raise cash through the sale of convertible bonds and preferred stock on an as-needed basis. An equity offering of $10 million - $15 million could come sometime in 2011 which would clean up the balance sheet and likely provide enough cash for the company to operate until it can become cash flow positive – which we now estimate to be sometime in 2013

Going into 2011 we think several catalysts can accelerate unit placements including:

- **Bigger, Productive Sales Force:** Vicor stumbled out of the gate early in 2010, hoping distribution could be handled by a small physician practice in the Southeast. This proved ineffective with few systems placed. As a result Vicor changed tactics and hired (Sept 2010) a national sales manager with a long and successful history in medical device sales. He quickly beefed up the sales force and spread the geographical footprint throughout the country. This already appears to be paying dividends, with the news that 8 units were placed in December alone. Vicor expects to continue to increase the size of its domestic sales force throughout 2011 - from 26 as of September 2010, to 50 (expected) at December 2010 to 70 by the end of 2011. This should, in-turn, help to accelerate the rate of unit placements.

- **Acceptance:** Overwhelming evidence supports that PD2i works as Vicor claims and that it has significant and important clinical utility. A better mousetrap does not always translate into rapid acceptance, however. This is especially true in the medical field where optimizing patient care is often weighed against other considerations such return-on-investment or just plain skepticism. It's easier to commit to a new technology if your neighbor tried it first and had a great experience. We think physicians that are using the Analyzer are finding real utility for it and are finding that the economics work. We believe this should help PD2i gain traction as physicians tout its benefits to colleagues.

- **Leasing option:** Agreement with equipment leasing company signed in early 2011 allows companies to obtain the Analyzer without the upfront cost.

- **International Distribution:** Deal signed for distributor in Asia. Vicor currently negotiating contracts for distribution in Middle East and Europe. We expect several new international distribution deals to be in place during 2011. Depending on the rate of acceptance, the international market could offer significant upside to our current forecasts.

- **Experienced Domestic Distributor:** Vicor may supplement its own sales efforts with the use of a domestic distributor. "Once Bitten Twice Shy" – management learned from their mistake in early 2010 so if and when a domestic distribution agreement is penned, expect it to be with an experienced firm that will deliver results.

- **Cardiac Death Indication:** 510(k) submitted in July 2010. While we hoped Vicor would have received FDA clearance for this indication already, the delay does not dampen our expectation that it will come in 2011. This would allow Vicor to broaden its marketing message and could significantly increase interest in the Analyzer (especially with cardiologists). And we remind investors that any physician can already use the Analyzer for any indication they feel it is useful for – FDA clearance of specific indications allows Vicor to explicitly market for those indications.

- **Normal Range Study:** Should be concluded in 2011 followed by a 510(k) filing for the determination of abnormal heart rate variability in patients at rest and during exercise. FDA clearance should be a catalyst in driving utilization of the Analyzer for the diagnosis of diabetic neuropathy – a huge potential market.

- **Trauma Indication:** Following FDA clearance for the cardiac mortality indication, Vicor expects to pursue a claim for diagnosis of patients at imminent risk of death from trauma.

- **Ongoing Studies:** Vicor is also studying PD2i in applications other than trauma and cardiac death including for the detection of blood loss from internal bleeding and the prediction of adverse cardiac events in college athletes.

- **Exposure to the "Right" People:** PD2i has only very recently begun to get noticed by the larger medical community. Exposure through presentations at prestigious events and publication in prominent journals is one

of the most influential forms of marketing and Vicor is now doing both tirelessly. We expect this to be a continuing theme throughout 2011 and result in greater exposure to people that understand the significance of the technology. This will hopefully be another catalyst to sales growth.

- **Higher Utilization:** Additional indications coming online along with greater exposure of the technology through presentations at prestigious conferences and in medial journals should help drive greater utilization of the Analyzer. Combined with a growing installed based, Vicor's "printer / printer cartridge" business model can significantly steepen the rate of revenue and earnings growth.

RECOMMENDATION

Vicor, although finally generating revenue, faces significant challenges in remaining a going-concern and eventually becoming cash flow positive. The company burned through $22.5 million of cash during the almost ten years of operating solely as a developmental company. The balance sheet is in tough shape, with only a moderate amount of cash, significant amounts of esoteric and short-term financing and carrying a negative net-worth of $8.8 million. The long-term viability of the company's business model, while apparently currently sound, is largely predicated on theory, the effective application of which has yet to be determined (although we are encouraged by the generation of testing revenue and recent uptick in unit placements). Despite concerns, we believe Vicor represents an attractive investment opportunity. The PD2i® technology, developed by a highly experienced management team and decorated scientific advisory board, appears to be superior in accuracy and reliability relative to conventional heart rate variability analysis. We believe this, coupled with a tremendous desire in the clinical community for a functional technology for the prediction of future pathological events such as sudden cardiac death will translate into significant interest in Vicor's HRV technology from cardiologists, endocrinologists, electrophysiologists and other physicians.

We model EPS of ($0.19) for the full-year 2010, ($0.14) in 2011 and look for 2013 EPS of $0.07. We are maintaining our Outperform rating on Vicor and our $1.07 price target, based on 25x 2013 EPS, discounted back at an annual rate of 15%.

Risks to our recommendation include; Vicor is unable to obtain additional or sufficient financing, loans are called, PD2i® technology fails to gain significant acceptance by physicians, problems with insurance reimbursement to physicians, per-test revenue and/or unit placements are significantly below our updated forecasts, economic forces constrain physician spending on the Analyzer, Vicor fails to gain SCD and/or trauma indications, and unexpected or higher- than-anticipated expenses adversely impact cash flow/profitability.

KEY MANAGEMENT PROFILES*

David Fater
President, Chief Executive, Chief Financial Officer, and Director in June 2002. Mr. Fater was the founder and from January 1993 through the present, has been the Chief executive officer of ALDA & Associates International, Inc., a business and financial consulting firm specializing in healthcare and life sciences. Prior to his founding ALDA, Mr. Fater served as a senior executive with three public health care companies, including two in which he led the initial public offering process (BMJ Medical Management, Inc. and Community Care of America) and one which he led to a NYSE listing and a $1 billion market capitalization (Coastal Physician Group, Inc.). Mr. Fater was employed by Coastal Physician Group from January 1993 to June 1995; Community Care of America from July 1995 to December 1996; and BMJ Medical from January 1997 to July 1999. From June 2000 through July 2001 Mr. Fater was the chief financial officer of Vector Medical Technologies, Inc. Prior to his corporate experience, Mr. Fater was a key international business advisor to senior management and boards of directors as a senior international partner during a 24-year career with Ernst & Young from January 1969 to December 1992. He also has extensive experience with numerous mergers and acquisition transactions. He holds a B.S. in Accounting from the University of North Carolina. He is a Certified Public Accountant in Georgia, Illinois, North Carolina and New York.

James E. Skinner, Ph.D.
Vice President Research and Science and a Director since August 2000. Dr. Skinner was our President from August 2000 through July 2002. Dr. Skinner has experience both as a scientist and manager of large research and development projects. From December 1969 to February 1993 Dr. Skinner was a Professor at Baylor College of Medicine in Houston, where he was the recipient of many research grants from the National Institutes of Health. During his tenure at Baylor College of Medicine, he was the principal investigator of a Program Project Grant that operated five laboratories and three core facilities. From March 1993 to July 1997 Dr. Skinner was the Associate Director of the Totts Gap Medical Research Laboratories, Inc. In August 1997 he founded the Delaware Water Gap Science Institute, a nonprofit medical research organization devoted to the development of medical devices and pharmaceuticals, and has served as its director since its inception. Dr. Skinner is a graduate of Pomona College and received his Ph.D. from the University of California at Los Angeles.

Dr. Jerry M. Anchin, Ph.D.
Vice President and Product Development and Physician Training since October 2000 and a Director since September 2003. Dr. Anchin has extensive experience in the biotechnology business sector. He has been actively involved in the fields of immunology, molecular biology, drug discovery and protein chemistry since 1978. Dr. Anchin worked in biotechnology at International Immunoassay Labs from September 1981 to July 1988 as head of assay development and manufacturing, where he was instrumental in designing a novel assay for the detection of the protein creatine kinase that is released as a result of acute myocardial infarction. He received two patents for his work in this area. Dr. Anchin then worked for Immuno Pharmaceuticals from August 1993 to February 1996 and Prism Pharmaceuticals from February 1996 to June 1998. Dr. Anchin was employed by Ciblex Pharmaceuticals from June 1998 through August 2000, where he became group leader of the drug discovery program involving novel small molecules that will be entering clinical trials for the prevention of asthma. He has been granted five patents in the field of immunoassay and drug discovery and has four patents pending. Dr. Anchin holds a B.A. in Cell Biology from University of California at Santa Barbara and received his Ph.D. in Immunology from Texas A&M University.

Dr. Daniel N. Weiss, M.D., F.A.C.C
Joined Vicor Chief Medical Officer in April 2004. Dr. Weiss has extensive experience as a practicing cardiologist and electrophysiologist. He has been a partner in Florida Arrhythmia Consultants and a director of the Jim Moran Heart and Vascular Center since 1994. He is also a consultant to Fortune 500 Medical Device companies including Medtronics, St. Jude Medical and Guidant. He has been a clinical investigator in the MADIT II (*MultiCenter Automatic Defibrillator Implantation Trial*) and SCDHeFT (*Sudden Cardiac Death Heart Failure Trial*) clinical trials. He is a *cum laude* graduate of Princeton University with a BSE in Electrical Engineering and Computer Science. He received his Medical Degree with Distinction in Research from the Mount Sinai School of Medicine where he also received the Nathan A. Setz Award for Research in Cardiovascular and Renal Disease.

Lloyd C. Chesney
Joined Vicor as Chief Technology Officer (CTO) on January 1, 2010. Immediately prior to joining Vicor, he was Chief Technology Officer of MDVIP, a concierge physician organization providing personalized preventive medicine. During his tenure, he integrated MDTablet's electronic medical record into MDVIP's portal to provide bi-directional information exchange creating a dynamic patient health record, and integrated MDVIP's patient instant medical history into MDVIP's portal and MDTablet's electronic medical record for patient health risk assessments, which formed the foundation for individualized patient wellness plans. Previously, Mr. Chesney has served as CTO for Health Star Communications, a meeting logistics company as well as CTO for EHealth Latin America, a facilitator of hospital-centric, Web-based medical communication and education in Central and South America Cybear Inc., a then development-stage internet healthcare portal, CIO for Phymatrix Corp., a medical practice management company and CIO for the Palm Beach County Health Care District.

KEY SCIENTIFIC ADVISORY BOARD PROFILES*

Mark E. Josephson, M.D.
Chief of Cardiology at Beth Israel Deaconess Medical Center, a major patient care, research and teaching affiliate of Harvard Medical School, the author of *Clinical Cardiac Electrophysiology*, the fundamental textbook in the field.

Hein J. J. Wellens, M.D.
Professor and Chairman of the Department of Cardiology at Academisch Ziekenhuis Maastricht in Amsterdam, the Netherlands. He is a director of the Interuniversity Cardiology Institute of the Netherlands and is a member of the Netherlands Academy of Arts and Sciences. He also has an appointment of visiting lecturer at Harvard Medical School.

Richard M. Luceri, M.D., F.A.C.C.
Recently retired director, Interventional Arrhythmia Center Holy Cross Hospital, Fort Lauderdale, FL as well as a clinical investigator in the MADIT II (*MultiCenter Automatic Defibrillator Implantation Trial*) and author SCDHeFT (*Sudden Cardiac Death Heart Failure Trial*).

Jules Mitchel, Ph.D.
Founder of Target Health, Inc., a full-service contract research organization supporting all aspects of pharmaceutical drug and device development.

Robert G. Hauser, M.D., F.A.C.C., FHRS
Chairman of the Cardiovascular Services Division at Abbott Northwestern Hospital and former CEO of Cardiac Pacemakers, Inc., acquired by Guidant Corporation.

Jonathan Kaplan, M.D., M.P.H.
Medical director for Fidelis Care New York and formerly the corporate medical director for Excellus Blue Cross Blue Shield.

David Chazanovitz
President and CEO of Alveolus, Inc., the former chief executive officer of Cambridge Heart, Inc. (our only FDA-approved competitor).

Edward F. Lundy, M.D., Ph.D.
Chief of Cardiothoracic Surgery at the Active International Cardiovascular Institute at Good Samaritan Hospital in Suffern, New York. In addition to his M.D. from the University of Michigan, Dr. Lundy also received a Ph.D. from that institution in Physiology with a primary focus on altered-state physiologies such as hibernation.

* Vicor Technologies, Inc 10-K for period ending 12/31/2009

CAPITAL STRUCTURE

Vicor Technologies, Inc. 9/30/2010

Debt

	FYE 2009	9/30/2010
ST		
2004 Notes	$250,000	$250,000
12% Convert Promissory Notes	$110,000	$110,000
15% Promissory Notes	$0	$0
Bank loans	$100,000	$300,000
Other	$0	$0
LT		
8% Convertible Notes	$773,000	$0
8% Convert Sub Notes	$278,000	$2,226
Bank Loans	$200,000	$0

Preferred Stock

	FYE 2008	FYE 2009	9/30/2010
Series A			
Shares Outstanding	157,572	157,592	0
Series B			
Shares Outstanding	4,781,295	5,210,101	5,185,101

FINANCIAL STATEMENTS

INCOME STATEMENT

Vicor Technologies, Inc

	2009 A	Q1A	Q2A	Q3A	Q4E	2010 E	2011 E	2012 E	2013 E
Product Revenue	$0.0	$88.0	$6.0	$0.0	$43.5	$137.5	$767.5	$1,865.5	$3,476.3
YOY Growth	-	-	-	-	-	-	*458.2%*	*143.1%*	*86.3%*
Testing Revenue	$0.0	$12.0	$2.0	$14.0	$23.4	$51.4	$1,026.5	$6,006.8	$16,755.7
YOY Growth	-	-	-	-	-	-	*1897.2%*	*485.1%*	*178.9%*
Total Revenues	$0.0	$100.0	$8.0	$14.0	$66.9	$188.9	$1,794.0	$7,872.3	$20,231.9
YOY Growth	-	-	-	-	-	-	*849.7%*	*338.8%*	*157.0%*
Cost of Goods Sold	$0.0	$85.0	$2.0	$1.0	$54.6	$142.6	$1,010.5	$2,767.8	$5,703.3
Gross Profit	$0.0	$15.0	$6.0	$13.0	$12.3	$46.3	$783.5	$5,104.5	$14,528.6
Gross Margin	-	*15.0%*	*75.0%*	*92.9%*	*18.4%*	*24.5%*	*43.7%*	*64.8%*	*71.8%*
R&D	$964.0	$157.0	$193.0	$161.0	$265.0	$776.0	$1,020.0	$1,145.0	$1,230.0
% R&D	-	*157.0%*	*2412.5%*	*1150.0%*	*396.1%*	*410.8%*	*56.9%*	*14.5%*	*6.1%*
G&A	$4,413.0	$1,457.0	$1,400.0	$1,353.0	$1,460.0	$5,670.0	$6,180.0	$7,160.0	$8,735.0
% G&A	-	*1457.0%*	*17500.0%*	*9664.3%*	*2182.4%*	*3001.6%*	*344.5%*	*91.0%*	*43.2%*
Interest Expense	$1,944.0	$357.0	$646.0	$458.0	$526.0	$1,987.0	$500.0	$35.0	$45.0
Operating Income	($7,321.0)	($1,956.0)	($2,233.0)	($1,959.0)	($2,238.7)	($8,386.7)	($6,916.5)	($3,235.5)	$4,518.6
Operating Margin	-	-	-	-	-	-	-	-	*22.3%*
Gain/(loss) on derivatives	$2,157.0	($117.00)	$454.00	$1,142.00	$0.00	$1,479.00	$0.00	$0.00	$0.00
Net Income before preferred div.	($5,164.0)	($2,073.0)	($1,779.0)	($817.0)	($2,238.7)	($6,907.7)	($6,916.5)	($3,235.5)	$4,518.6
Preferred Stock (series A&B) dividends	($479.0)	($126.0)	($114.0)	($105.0)	($82.0)	($427.0)	($230.0)	$0.0	$0.0
Amort of deriv discount on series B pref	($979.0)	($249.0)	($250.0)	($256.0)	($250.0)	($1,005.0)	($500.0)	$0.0	$0.0
Value of warrants	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total dividends to preferred stock holders	($1,458.0)	($375.0)	($364.0)	($361.0)	($332.0)	($1,432.0)	($730.0)	$0.0	$0.0
Pre-Tax Income	($6,622.0)	($2,448.0)	(2,143.0)	(1,178.0)	(2,570.7)	($8,339.7)	($7,646.5)	($3,235.5)	$4,518.6
Taxes	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Tax Rate	-	-	-	-	-	-	-	-	-
Net Income to common stock	($6,622.0)	($2,448.0)	(2,143.0)	(1,178.0)	(2,570.7)	($8,339.7)	($7,646.5)	($3,235.5)	$4,518.6
YOY Growth	*22.2%*	*-66.0%*	*-43.6%*	*-75.4%*	*-328.7%*	*-25.9%*	*-8.3%*	*-57.7%*	*-239.7%*
Net Margin	-	-	-	-	-	-	-	-	*22.3%*
EPS	($0.18)	($0.06)	($0.05)	($0.03)	($0.06)	($0.19)	($0.14)	($0.05)	$0.07
YOY Growth	-	-	-	-	-	-	-	-	*-239.7%*
Diluted Shares O/S	37,513	42,426	44,604	45,696	45,000	44,431	55,500	66,000	66,000

Brian Marckx, CFA

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SALES/GROSS MARGIN ESTIMATES

Vicor Technologies, Inc

	Units sold	Total units	Average			Product	Prod rev		# tests/unit		Test	Test rev		Product	Test	Gross	Gross
	qtr	sold	sale price		Rev/test	revenue	% of total		per month	tests/qtr	revenue	% of total	Total Revenue	GM	GM	Profit	Margin
2010													-	-	-	-	-
Q1	37	37	$2,378		$30	$88,000	88%		4	11	$12,000	12%	$100,000	-27.8%	329.1%	$15,000	15.0%
Q2	0	37	N/A		$30	$0	0%		2	7	$8,000	100%	$8,000	0.0%	75.0%	$6,000	75.0%
Q3	0	37	N/A		$30	$0	0%		6	18	$14,000	100%	$14,000	0.0%	92.9%	$13,000	92.9%
Q4	15	52	$2,900		$30	$43,500	65%		5	15	$23,400	35%	$66,900	-12.0%	75.0%	$12,335	18.4%
FY	**52**	**52**	**$2,639**	**avg**	**$30**	**$131,500**	**70%**	**avg**	**4**	**13**	**$57,400**	**30%**	**$188,900**	**-10.0%**	**143.0%**	**$46,335**	**24.5%**
2011													-	-	-	-	-
Q1	30	82	$3,000		$30	$90,000	58%		9	27	$66,420	42%	$156,420	-9.0%	75.0%	$41,757	26.7%
Q2	45	127	$3,000		$30	$135,000	52%		11	33	$125,730	48%	$260,730	-9.0%	75.0%	$82,211	31.5%
Q3	70	197	$3,500		$30	$245,000	45%		17	51	$301,410	55%	$546,410	6.2%	75.0%	$241,300	44.2%
Q4	85	282	$3,500		$30	$297,500	36%		21	63	$532,980	64%	$830,480	6.2%	75.0%	$418,244	50.4%
FY	**230**	**282**	**$3,250**	**avg**	**$30**	**$767,500**	**43%**	**avg**	**15**	**44**	**$1,026,540**	**57%**	**$1,794,040**	**-1.4%**	**75.0%**	**$783,513**	**43.7%**
2012													-	-	-	-	-
Q1	100	382	$3,500		$30	$350,000	28%		26	78	$893,880	72%	$1,243,880	18.0%	75.0%	$733,563	59.0%
Q2	115	497	$3,500		$30	$402,500	24%		28	84	$1,252,440	76%	$1,654,940	18.0%	75.0%	$1,011,956	61.1%
Q3	120	617	$4,200		$30	$504,000	23%		30	90	$1,665,900	77%	$2,169,900	41.7%	75.0%	$1,459,354	67.3%
Q4	145	762	$4,200		$30	$609,000	22%		32	96	$2,194,560	78%	$2,803,560	41.7%	75.0%	$1,899,584	67.8%
FY	**480**	**762**	**$3,850**	**avg**	**$30**	**$1,865,500**	**24%**	**avg**	**29**	**87**	**$6,006,780**	**76%**	**$7,872,280**	**29.8%**	**75.0%**	**$5,104,459**	**64.8%**
2013													-	-	-	-	-
Q1	165	927	$4,500		$30	$742,500	20%		35	105	$2,920,050	80%	$3,662,550	51.8%	75.0%	$2,574,435	70.3%
Q2	180	1107	$4,500		$30	$810,000	18%		37	111	$3,686,310	82%	$4,496,310	51.8%	75.0%	$3,184,075	70.8%
Q3	195	1302	$4,750		$30	$926,250	17%		39	117	$4,570,020	83%	$5,496,270	60.2%	75.0%	$3,985,139	72.5%
Q4	210	1512	$4,750		$30	$997,500	15%		41	123	$5,579,280	85%	$6,576,780	60.2%	75.0%	$4,784,979	72.8%
FY	**750**	**1512**	**$4,625**	**avg**	**$30**	**$3,476,250**	**17%**	**avg**	**38**	**114**	**$16,755,660**	**83%**	**$20,231,910**	**56.0%**	**75.0%**	**$14,528,627**	**71.8%**

BALANCE SHEET

Vicor Technologies, Inc

	September 30, 2010	December 31, 2009	September 30, 2009
Assets			
Current assets:			
Cash	$331	$544	$1,065
A/R	$58	$0	
Inventory	$126	$0	
Prepaid expenses	$85	$74	$43
Total current assets	$600	$618	$1,108
PP&E, net	$106	$21	
Deposits	$18	$12	$12
Deferred charges	$650	$168	$567
Intellectual property, net of accum. Amortization	$201	$229	$238
Total Assets	**$1,575**	**$1,048**	**$1,949**
Liabilities and Shareholders' Equity			
Current liabilities:			
Accounts payable and accrued expenses	$1,068	$600	$755
Deferred revenue	$15	-	-
Current debt	$660	$460	$760
Due to related parties	$89	$100	$100
Total current liabilities	$1,832	$1,160	$1,615
Long-term liabilities:			
Long-term debt	$2,226	$1,251	$611
Accrued dividends	$834	$833	$744
Derivative financial instruments payable in common stock	$5,469	$4,414	$7,187
Total Liabilities	**$8,529**	**$7,658**	**$10,157**
Net capital deficiency:			
Preferred stock:			
Series A Conv., 157,592 shares o/s @ FYE '08 and '09	-	-	-
Series B Junior Conv., 4,781,295 o/s @ FYE '08 and 5,210,101 o/s @ FYE '09	-	-	-
Common stock	$5	$4	$4
Additional paid-in-capital	$50,440	$46,848	$45,808
Stock subscriptions in process	-	-	$600
Deficit accumulated during development stage	($59,231)	($53,462)	($54,620)
Net capital deficiency:	($8,786)	($6,610)	($8,208)

Source: Vicor Technologies, Inc. / Zacks Investment Research *Brian Marckx, CFA*

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CASH FLOW STATEMENT

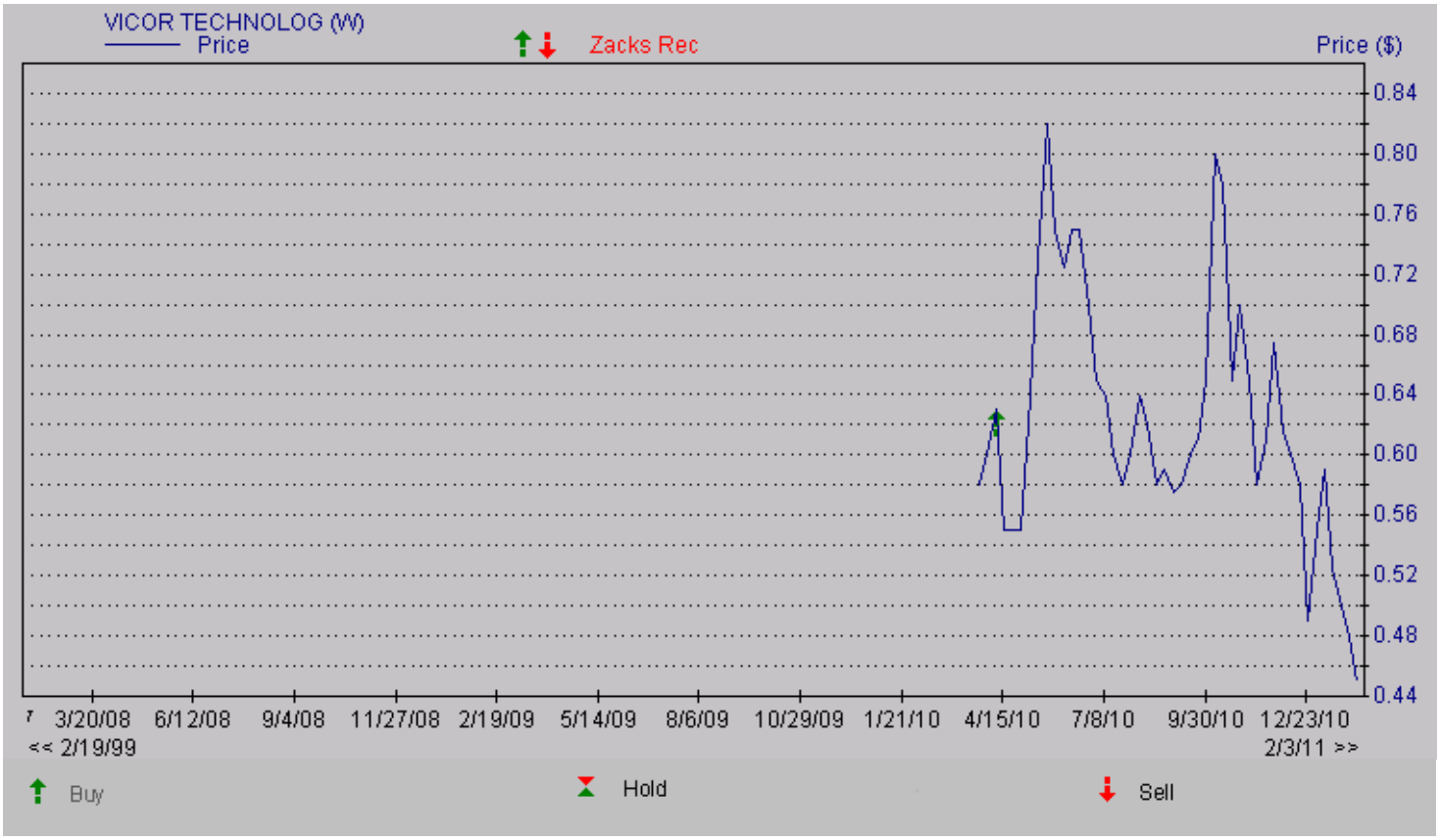
Vicor Technologies, Inc

	Nine Months Sept 30, 2010	Six Months June 30, 2010	Three Months March 31, 2010
Cash Flows From Operating Activities:			
Net loss	($4,669)	($3,852)	($2,073)
Depreciation and Amortization	$53	$35	$15
Noncash interest from conversion of debt to equity	-	-	-
Noncash interest from deferred financing costs and debt-based derivative liabilites	$1,130	$824	$371
Gain on derivative financial instruments	($1,479)	($337)	$117
Gain from sale of assets		-	-
Securities issued for services	$230	$35	$29
Beneficial conversion feature of notes	-	$33	$10
Contributed research and development expenses	-	-	-
Merger related costs	-	-	-
Shares in lieu of interest payments	$5	$2	$1
Warrants issued for consulting	$35		
Equity-based compensation	$460	$409	$286
Changes in assets and liabilities:			
A/R	($43)	($61)	($92)
Inventory	($126)	($141)	($40)
Prepaid expenses and other assets	($667)	($731)	($11)
Accounts payable and accrued expenses	$1,233	$937	$274
Net cash provided by operating activities	($3,770)	($2,847)	($1,113)
Cash Flows From Investing Activities:			
Purchase of intellectual property	-		-
Net proceeds from sale of equipment	-		-
Purchase of PP&E	($110)	($107)	($93)
Net cash used in investing activities	($110)	($107)	($93)
Cash Flows From Financing Activities:			
Due to related parties	-	-	-
Proceeds from bank loans	-	-	-
Proceeds from sale of preferred stock	-	-	-
Proceeds from sale of common stock	-	-	-
Repayment of notes	-	-	-
Proceeds from bridge loan	-	-	-

Procceds from sale of notes	$3,667	$3,667	$970
Proceeds for stock to be issued	-	-	-
Contributed capital	-	-	-
Net cash provided by financing activities	$3,667	$3,667	$970
Net increase in cash	($213)	$713	($236)
Cash at beginning of year	$544	$544	$544
Cash at end of year	**$331**	**$1,257**	**$308**

Source: Vicor Technologies, Inc. / Zacks Investment Research *Brian Marckx, CFA*

HISTORICAL ZACKS RECOMMENDATIONS



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