Fiscal 2018 Stockholder Letter

CARDIOVASCULAR SYSTEMS, INC.

To our stockholders,

We successfully delivered annual revenue growth and our first annual net profit in fiscal 2018, demonstrating that our orbital atherectomy technology can support a growing, profitable business model. Our core orbital atherectomy business strengthened throughout the year and we made material progress on our plans to increase our product offering and expand into new geographies. We enter fiscal 2019 with momentum and spirited determination to reach more patients suffering from peripheral artery disease (PAD) and coronary artery disease (CAD).

Scott R. Ward
Chairman, President and
Chief Executive Officer

Today, Cardiovascular Systems, Inc. (CSI) is in a rare and enviable position. Orbital atherectomy is widely recognized as the therapy of choice for treating calcified arterial plaque. The patient populations we serve are large and growing. We remain committed to investing in the technologies and the medical evidence that enable physicians to deliver the best therapy to each of their patients. And finally, we have developed a large, clinically focused sales channel that is now present in over 1,000 orbital atherectomy cases each week.

With this strong foundation in place, we are now poised to transform CSI from a one-technology, one-geography company into an innovative and global medical device company – capable of introducing a broad range of therapies to physicians treating complex PAD and CAD.

In July, we shared this vision of the future at our first-ever Analyst Day meeting in New York and outlined our plans to drive attractive, sustainable growth over the next five years. If successful, we will more than double the size of the company during that time frame.

Financial Strength and the Talent to Execute

We are launching this growth initiative from a position of financial strength. Our core atherectomy business now generates over $200 million in U.S. annual revenue. We have demonstrated that we can grow profitably and deliver positive cash flow. As a result, fiscal 2018 adjusted EBITDA* improved by $56 million compared to just two years ago. Our balance sheet continues to strengthen, with over $116 million in cash and no long-term debt at the end of fiscal 2018.

Our strategy to transform CSI will be executed by proven senior leadership. Over the past two years, we have successfully focused on building out the CSI management team, and today, our senior leaders average over 18 years of med-tech industry experience.

Rhonda Robb was appointed chief operating officer in January. Rhonda joined CSI following a successful 30-year career with Medtronic, where she was most recently the vice president and general manager of the Heart Valve Therapies business. She brings significant experience in leading and scaling complex, high-growth medical technology businesses.

Jeff Points was named chief financial officer in February. Jeff succeeds Larry Betterley, who announced his plans to retire in 2018. We are grateful to Larry for his many years of service to our company. His leadership helped grow CSI from an early-stage startup to a financially sound market leader, poised for long-term growth and profitability. Jeff brings more than 20 years of accounting and finance leadership to our organization. He has been with CSI for over 10 years, most recently serving as vice president, corporate controller and treasurer.

In November, we welcomed Dr. Ryan Egeland to CSI as our vice president of medical affairs. Dr. Egeland has extensive medical, technical and business leadership experience. He is leading our global medical education function and will also drive strategies throughout our company to improve the quality of care for our patients and ensure we bring sound medical judgement to everything we do here at CSI.

Protect and Grow our Core Orbital Atherectomy Business

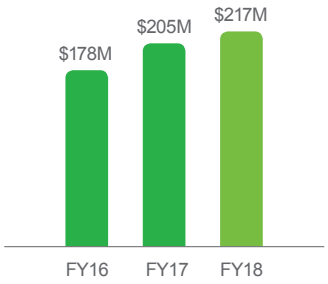
We will continue to protect and grow our core business by focusing on product enhancements, superior clinical support, medical education and the generation of medical evidence that demonstrates the safety, efficacy and efficiency of our products.

Strong Financial Platform for Growth

Profitable Business Model: FY18 Net Income $1.7M

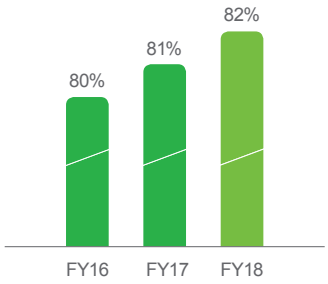
Revenue

10%
CAGR



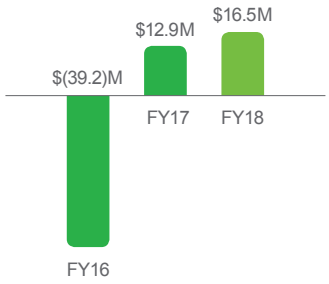
Gross Margin

+80%



Adjusted EBITDA*

+$56M



Over the course of the next five years, our goal is to sustain our peripheral growth at, or just above, the market and to grow our coronary franchise at a faster rate – in total we believe we can sustain a 10 percent growth rate in our core business in the U.S.

Serving our existing customers includes continuous innovation. We continue to seek opportunities to improve the ease of use of our technology and provide physicians with tools that improve their ability to access difficult lesions. We recently launched a new handle for the Diamondback 360® Coronary Orbital Atherectomy System** (OAS) with a feature called GlideAssist®. This is an important development that enables smoother tracking, removal and repositioning – especially in complex percutaneous coronary intervention (PCI) patients.

In our peripheral business, we introduced the Diamondback 360® Extended Length OAS, which allows physicians to treat above-the-knee lesions using a radial access point. Accessing the vasculature through the blood vessels in the wrist requires a very small device. The device's low profile and unique orbital mechanism of action is a significant product differentiator and competitive advantage. We are also very optimistic about the value proposition here to enable greater efficiencies in patient workflows given the ability to ambulate patients faster and potentially reduce length of stay.

While we continue to grow our core business, we will continue to compile and share clinical evidence that supports the use of orbital atherectomy. With a targeted enrollment of 2,000 patients, our ECLIPSE study is curently one of the largest active randomized controlled trials in the coronary market. We are making good progress in the conduct of this trial, with over 85 sites and 300 patients enrolled at fiscal year end.

In peripheral, 2-year data from our LIBERTY 360 study was presented by Dr. Jihad A. Mustapha, MD, FACC, FSCAI, Advanced Cardiac & Vascular Amputation Prevention Centers Grand Rapids, Michigan, in August at the Amputation Prevention Symposium.

Not surprisingly, patients studied continued to show high freedom from Major Adverse Events across Rutherford Classes 2 through 6.

A subanalysis of LIBERTY 360 patients treated with our orbital atherectomy indicated high freedom from major amputation across all Rutherford classes – including a freedom from major amputation of 88.5% for the most complex Rutherford 6 patients.

Dr. Mustapha concluded that the LIBERTY 360 study demonstrates that peripheral vascular interventions can be successful in this patient population, as evidenced at two years by high freedom from major amputation, improvement in quality of life and Rutherford Class.

Innovation Drives Incremental Growth

Adding new products to support orbital atherectomy procedures will generate incremental revenue as we seek to provide enhanced clinical support in cath labs. We intend to build on our market-leading position in atherectomy by offering physicians high-quality products that complement the use of our core technology in coronary and peripheral interventions. Our planned launch of 20 new products over the next five years could help to generate $70 - $100 million of revenue in fiscal 2023.

In the second half of fiscal 2018, we took our first steps to extend our product portfolio by offering balloons and guidewires to our physician partners. As many as four or five of these support devices can be used during our procedures, making this product offering a meaningful way to demonstrate our service commitment while adding to our per-procedure revenue.

We are particularly excited to be the exclusive U.S. distributor of OrbusNeich® coronary and peripheral angioplasty balloons. Over the years, physicians in Asia and Europe have come to rely on the differentiated design, quality and performance of these balloons. These distinctions have earned OrbusNeich leading market share positions in these rapidly growing geographic markets, where there is intense competition and demand for best-in-class balloons.

The Orbus Neich Sapphire® II Pro balloon is the first and only 1.0 mm coronary balloon in the U.S. market. These very small balloons are uniquely suited to cross tight occlusions and improve access to complex coronary lesions. This unique device is now approved in the U.S. and already earning positive feedback from our customers. We look forward to building on this enthusiasm with a full market launch of these balloons in early fiscal 2019.

In addition, we partnered with Integer Holdings Corporation to produce CSI-branded ZILIENT™ peripheral guidewires. These guidewires have been designed to work on challenging peripheral lesions. We initiated a limited market release of our ZILIENT peripheral guidewires in March 2018 and plan to launch additional guidewires for radial peripheral applications in fiscal 2019.

We are also investing in promising new technologies and therapies that will allow us to treat more patients. Notably, we plan to invest $250 million in research and development over the next five years.

In July, we began a partnership with Aerolase Corp., a leader in dermatology lasers, to co-develop a new atherectomy laser. We believe there is an opportunity to leverage Aerolase proprietary laser technology to create a new physican tool for the treatment of soft plaque and stent restenosis.

We also announced our intention to develop a hemodynamic support device. The complex coronary patients we treat often require temporary PCI support during their procedure. Existing products are designed to be used for long-term hemodynamic support. We believe there is an opportunity to build on our engineering expertise to develop a cost-effective, short-term device designed to treat complex coronary patients. We have initiated animal testing of this device and are targeting first in human testing in calendar 2020.

Global Expansion Accelerates Growth of Core OAS Business

Another significant accomplishment in fiscal 2018 included the first international launch of orbital atherectomy outside the U.S. In February, we received reimbursement approval for coronary orbital atherectomy in Japan. With over 280,000 PCIs annually and a high rate of severe calcium, Japan is an ideal market for our first international product launch.

We are taking a deliberate and controlled approach in Japan and applying the same training rigor that we have used to date in the U.S. The training of physicians and the enrollment of new centers in Japan requires physician peer-to-peer training, and will result in a gradual rate of adoption over time.

In July, we announced an exclusive international distribution agreement with OrbusNeich to serve as the exclusive distributor to sell our coronary and peripheral orbital atherectomy systems outside the U.S. and Japan is central to our global expansion initiative. OrbusNeich manufactures and sells an extensive portfolio of coronary and peripheral products, including stents, balloons and microcatheters. The company operates 12 regional sales offices throughout the world and sells its products in over 60 countries.

This is an attractive agreement for CSI because of the opportunity to leverage existing OrbusNeich infrastructure. It will allow us to focus our investment on new account training, market development and growing market share.

In the next three years we plan to launch our Orbital Atherectomy business in Southeast Asia, Europe and the Middle East. Our goal is to achieve $25 - $50 million from international sales in fiscal 2023.

Creating Shareholder Value

Our vision for the future of CSI is guided by our mission to Save Limbs and Save Lives, Every Day. This mission shapes our values, guides our judgements and motivates our employees.

As an organization, we recognize that we will play a leading role in addressing medical needs of the large patient populations we serve. Coronary and peripheral artery disease are a leading cause of morbidity and mortality in the developed world. In the U.S. alone, there are over 370,000 deaths annually from coronary artery disease. Over two million patients suffer from critical limb ischemia, a severe form of PAD that can lead to amputation or death.

The profound burden of complex coronary and peripheral disease demands an aggressive response. CSI is uniquely positioned to play an important role in improving the quality of care for these patients. Over the next five years, we intend to build on our market-leading position in the treatment of complex PAD and CAD to become the pioneering force in the treatment of complex cardiovascular disease.

Today, the transformation of CSI is underway – from a single-technology, single-geography business to an innovative leader with global reach. This plan is driven by organic growth. We will add new revenue streams and accelerate our growth with internally developed products and by entering new geographies. Our strategy is designed to drive a compounded average growth rate of 15 - 18 percent over the next five years. At the same time, we are committed to strong financial discipline, improving profitability and maintaining a solid balance sheet.

Our plans are ambitious, but achievable. CSI possesses both the opportunity and the obligation to improve the lives of patients suffering from PAD and CAD. I look forward to updating you on our successes in the years to come.

Sincerely,

Scott R. Ward
Chairman, President and Chief Executive Officer

October 2, 2018

* For a reconciliation of the non-GAAP financial measure referred to as adjusted EBITDA, please refer to the table on page 38 of the Form 10-K.

** All product disclosures are available here: https://csi360.com/product-solutions/

Corporate Information

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Annual Meeting
The annual meeting of the stockholders of Cardiovascular Systems, Inc. will be held on November 14, 2018, at 10:00 a.m. CT, as a virtual meeting at www.virtualshareholdermeeting.com/CSII.

Board of Directors

Scott R. Ward
Chairman of the Board, President and CEO
Cardiovascular Systems, Inc.

Martha G. Aronson
Director
Former Executive Vice President and President-Global Healthcare
Ecolab, Inc.

Scott Bartos
Director
Former Chairman, President and Chief Executive Officer
Rural/Metro Corporation

Brent G. Blackey
Director
Former President and Chief Operating Officer
Holiday Companies

Edward Brown
Lead Independent Director
Managing Director
Five Arrows Capital Partners

William E. Cohn, M.D.
Director
Vice President of Medical Devices and Director of the Center for Device Innovation
Johnson & Johnson
Professor of Surgery
Baylor College of Medicine

Augustine Lawlor
Director
Managing Partner
HealthCare Ventures LLC

Executive Officers

Scott R. Ward
Chairman of the Board, President and CEO

Ryan D. Egeland, MD PhD
Vice President, Medical Affairs

Laura J. Gillund
Chief Talent Officer

John M. Hastings
Vice President, Manufacturing and Operations

Jeffrey S. Points
Chief Financial Officer

Rhonda J. Robb
Chief Operating Officer

Alexander Rosenstein
General Counsel and Corporate Secretary

Sandra M. Sedo
Corporate Compliance Officer

David S. Whitescarver
Vice President of Corporate Development and Intellectual Property

CSI®
CARDIOVASCULAR SYSTEMS, INC.

Forward-Looking Statement
Certain statements in this annual report are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 and are provided under the protection of the safe harbor for forward-looking statements provided by that Act. For example, statements in this annual report regarding (i) the transformation of CSI from a single-technology, single-geography company into an innovative and global medical device company; (ii) CSI's strategy; (iii) market estimates; (iv) the development and introduction of new products, including the specific products, the number of new products, and the anticipated timing thereof; (v) planned investments in research and development and product development; (vi) international expansion of CSI, including the anticipated timing thereof; (vii) our clinical trials, including their results and the announcement of results; (viii) estimates of future revenue, growth, profitability and stockholder return, including the timing and amounts thereof; and (ix) future financial discipline, are forward-looking statements. These statements involve risks and uncertainties that could cause results to differ materially from those projected, including, but not limited to, regulatory developments, clearances and approvals; approval of our products for distribution in foreign countries; approval of products for reimbursement and the level of reimbursement in the U.S., Japan and other foreign countries; dependence on market growth; agreements with third parties to sell their products; the ability of OrbusNeich to successfully launch CSI products outside of the United States and Japan; our ability to maintain our relationships with our distribution partners; our ability to maintain third-party supplier relationships and renew existing purchase agreements; the experience of physicians regarding the effectiveness and reliability of CSI's products; the reluctance of physicians, hospitals and other organizations to accept new products; the potential for unanticipated delays in enrolling medical centers and patients for clinical trials; actual clinical trial and study results; the impact of competitive products and pricing; our ability to comply with the financial covenants in our loan and security agreement and to make payments under and comply with the lease agreement for our corporate headquarters; unanticipated developments affecting our estimates regarding expenses, future revenues and capital requirements; the difficulty of successfully managing operating costs; our ability to manage our sales force strategy; our actual research and development efforts and needs; our ability to obtain and maintain intellectual property protection for product candidates; our actual financial resources and our ability to obtain additional financing; fluctuations in results and expenses based on new product introductions, sales mix, unanticipated warranty claims, and the timing of project expenditures; our ability to manage costs; investigations or litigation threatened or initiated against us; court rulings and future actions by the FDA and other regulatory bodies; international trade developments; general economic conditions; and other factors detailed from time to time in CSI's SEC reports, including its most recent annual report on Form 10-K and subsequent quarterly reports on Form 10-Q. CSI encourages you to consider all of these risks, uncertainties and other factors carefully in evaluating the forward-looking statements contained in this report. As a result of these matters, changes in facts, assumptions not being realized or other circumstances, CSI's actual results may differ materially from the expected results discussed in the forward-looking statements contained in this report. The forward-looking statements made in this report are made only as of the date of this report, and CSI undertakes no obligation to update them to reflect subsequent events or circumstances.

About CSI
Cardiovascular Systems, Inc., based in St. Paul, Minn., is a medical device company focused on developing and commercializing innovative solutions for treating vascular and coronary disease. The company's Orbital Atherectomy Systems treat calcified and fibrotic plaque in arterial vessels throughout the leg and heart in a few minutes of treatment time, and address many of the limitations associated with existing surgical, catheter and pharmacological treatment alternatives. The U.S. FDA granted the first 510(k) clearance for the use of the Orbital Atherectomy System in peripheral arteries in August 2007. In October 2013, the company received FDA approval for the Coronary Orbital Atherectomy System. As of June 30, 2018, over 392,000 of CSI's devices have been sold to leading institutions across the United States. For more information, visit the company's website at www.csi360.com.