



Raising the standard of medical imaging

Contact Information

Jason Chen
(847) 322-9534
jason.chen@duke.edu

Industry

Healthcare: Medical Imaging
Computed Tomography (CT)

Development stage

Startup

Year founded

2010

Location

Duke University, NC

Funding Opportunity

\$500,000

Use of Funds

60% Prototype Development
30% Clinical Testing
10% Operation/Legal/Other

Projected Second Round Funding

\$2,000,000

OUR MISSION

The upright ScanUp CT scanner is set to reshape the market for advanced diagnostic imaging by responding to the unmet demand of thousands of healthcare clinics that cannot afford traditional scanners. Our patented product revolutionizes the paradigm of horizontal CT imaging to create a new breed of upright machines that offers cutting-edge imaging at nearly 70% below current market price. Beyond capturing market share in the rapidly growing \$2.5 billion market for CT scanners,¹ we will expand into the previously limited market of affordable CT scanners as first-movers.

PROBLEM

Cardiovascular disease (CVD) remains the leading cause of death in the developed world, in part due to insufficient diagnostic infrastructure. The American Heart Association estimates that in 2006, CVD afflicted more than 81 million Americans, claiming over 800,000 lives². Effective treatments for CVD have been developed, but insufficient access to state-of-the-art diagnostic treatment has limited their reach. The current leading diagnostic technologies, including catheter angiography, are inpatient procedures characterized by high cost and invasiveness. This medical equipment's million dollar price tag has slowed its capacity to be adopted by smaller hospitals, rural communities, and private practices. Reduction of cost barriers associated with CT technology will allow small-scale medical centers across the country to access the ScanUp CT scanner.

SOLUTION

The advent of new detector technologies has given rise to specialized imaging machines that retain high resolution while significantly reducing cost and physical footprint, yet the industry is trapped within a physical design concept that is forty years old. By rethinking the fundamental structure of CT, ScanUp is capable of fully exploiting the advantages of current innovations in medical imaging with a safer, less-invasive and cheaper product. ScanUp's efficient machine, which can be purchased for half the price of conventional 64-slice CT scanners, will expand the market to include more screening procedures, private practices, and rural communities. Traditional catheter angiography procedures require a hefty \$3000-\$4000³. A current CT angiography (CTA) scan has a price tag of \$800-\$1000. Estimates for a ScanUp CTA scan place the price at \$200-\$300. At significantly lower prices, CTA is poised to become a procedure as routine as mammography.

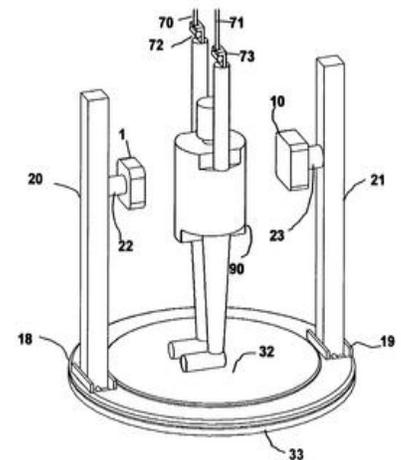


Fig. 1 Upright CT scanner
US Patent # 7003070

¹ "Medical Imaging Products." *Freedonia Group Inc.* (2009)

² "Medical Imaging Products." *Freedonia Group Inc.* (2009)

³ Berenson, Alex. "Weighing the Costs of a CT Scan's Look Inside the Heart ." *New York Times* 28 06 2008,

MARKET POTENTIAL & COMPETITION

Within the \$17.8 billion market for medical imaging equipment, the market for CT scanners has experienced the highest growth rate in the last ten years and is projected to continue at 11.7% annual growth. By 2013, when ScanUp expects to launch its product, the market will have grown from its current \$2.9 billion value to \$4.2 billion.⁴ Cardiology is a particularly ripe specialty for introduction of our technology. A survey from IMV Medical Information reports that the use of CT equipment in U.S. cardiology practices has more than doubled between 2006 and 2008, when 45% of cardiology practices own or lease CT equipment. A staggering 69.1% of U.S. cardiologists order CTA on at least a monthly basis. The intense interest in these machines is justified, as imaging accounts for a vast proportion of the revenue; fees for these diagnostic services are estimated to provide more than half of an average cardiologist's income. Even though the scans are currently limited by price and availability, an estimated 150,000 people in the United States received CTA studies in 2007 at a combined cost of over \$100 million.⁵

Presently, the arena of medical imaging is dominated by General Electric Medical Systems, Siemens Medical Solutions, and Philips Healthcare. However, none of these companies have devised an upright CT scanner, and few have products targeted toward ScanUp's market. Once ScanUp establishes itself as in efficient diagnostic angiography, our strong intellectual property, high switching costs in the CT market, and continuing innovation to expand into other diagnostic areas will ensure our sustainability.

STRATEGY

ScanUp's business strategy will proceed in two phases. First the company will develop a prototype and prepare for FDA approval via the 510(k) path by completing clinical testing requirements. ScanUp expects to complete this phase by 2013, and requires \$300,000 for building the prototype, \$150,000 for clinical trials, and \$50,000 for operational and legal expenses. Total expected expenditure is \$500,000.

The next phase involves marketing and sales of the machine. Of the 20,000 cardiologists⁶ in the United States, we expect a conservative 0.1% per year to purchase our machine in the introductory phase. The total cost of building a ScanUp CT scanner is \$190,000. A value-based pricing scheme places the price to the consumer at \$500,000, enabling a very high profit margin. Thus, expected gross profit in first year of sales is \$6.2 million, and it is expected to increase as the technology becomes more mainstream.

THE TEAM

ScanUp's management, based at Duke University in Durham, North Carolina, is a multidisciplinary team with leading expertise in biomedical engineering, sales, marketing and finance.

Robert Lehman, *Chief Executive Officer*, has extensive managerial experience as the former CEO of AdVenture, and the manager of 9 business ventures as Vice President of Entrepreneurship in Duke Venture Forward. He has valuable financial experience as business advisor to the government of Ceara, Brazil, and as a Summer Analyst at Deutsche Bank.

Jason Chen, *Chief Technology Officer*, is recipient of the Mathematical Association of America Award and the JA Jones Scholarship, and has worked in the Advanced Research Department of Siemens Medical Solutions as well as laboratories in the Department of Biomedical Engineering and the Brain Imaging and Analysis Center. Furthermore, he is a patent holder of the upright CT scanner.

Anumeha Goel, *Chief Financial Officer*, has experience in medical imaging through work at Duke University's Ultrasound laboratory. With a background in both Biomedical Engineering and Economics, she has a finance certification from the Society of Actuaries and training in FDA Regulations.

Esther Lee, *Chief Operations Officer*, conducts research in a tissue engineering lab as a Pratt Fellow. Her past organizational experiences include starting a children's program at the Emergency Housing Consortium and collaborating with diverse teams on service trips to Honduras, Taiwan, and Louisiana.

⁴ "Medical Imaging Products." *Freedonia Group Inc.* (2009)

⁵ "Medical Imaging Products." *Freedonia Group Inc.* (2009)

⁶ Wachter, Robert. "Hospitalists in the United States — Mission Accomplished or Work in Progress?." *New England Journal of Medicine*. 350.19 (2004): 1935-1936.