



Work Smart. Grow Smart.™

Results:

- **Active Patent Holder: 2 certified and 6 pending**
- **5 new jobs created**
- **\$3.1M private investment secured**
- **HIPAA compliant**
- **Wireless monitoring cloud based for StepRite product**
- **New applications identified**



Creating the Right Stride

The vision for MedHab dates back to 2007 when Johnny Ross,

Co-Founder and CEO, went through knee reconstruction surgery. When Ross began the rehabilitation process he was to follow a very strict regimen of partial weight bearing and range of motion exercises. Rehab was difficult, as Ross had to estimate how much weight was placed on his injured leg. Additionally, range of motion was determined by a goniometer, which is a protractor type of hand-held instrument, subject to personal biases of the person making the measurements.

Patients can't determine the amount of weight placed on the affected limb, or how much improvement they are making regarding range of motion. Surgeons and physical therapists need to know details on how the patient is progressing and whether or not they are doing home exercises as prescribed. Not having access to this information makes it difficult to determine when to move the patient to the next stage of rehabilitation, as well as deciding when the rehabilitation should be completed.

The Situation

After completing renderings and partial design of the device, which resembles a shoe insert with electronics, Ross retained a patent attorney. The device was presented to the U.S. Patent Office and the company officially launched in December 2008. Patents on the technology were received in May, 2011.

MedHab's patent attorney steered the company to the Tech Fort Worth technology incubator to continue their efforts. Tech Fort Worth Director Darlene Ryan then referred them to TMAC for further technical development assistance. Ms. Ryan serves on the TMAC Advisory Board and knew the Texas MEP Center was a logical next step toward commercialization.

TMAC staff specialist Raul Fernandez, PhD, also a UT-Arlington College of Engineering professor, conducted a technical

The Solution

feasibility study with MedHab early on. MedHab needed to build alpha units in order to prove its concept and secure funding. TMAC's Fernandez was charged with writing a gait algorithm that sensor manufacturers said couldn't be done. However he succeeded and the alpha unit's success helped the company secure \$3.1M in private equity investment and \$3.2M with the City of San Angelo. The success of the alpha units also contributes to the Federal Food and Drug agency approval process.

The project truly defines a collaborative effort. The company's Operations VP in San Angelo is working with the TMAC office in West Texas to write grant requests to the Texas Workforce Commission. Besides TMAC's technical projects, Angelo State College and Howard Community College will also be tapped to provide additional workforce development. The Athens

Customer:
MedHab, LLC
www.medhab.com

County:
Tarrant

Industry:
Orthopedic device
manufacturing

NAICS:
339113

TMAC Services
New Product
Development &
Commercialization

Who to contact:
TMAC Manufacturing
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success
story

The Solution (continued)



Biotech Manufacturing Center is poised to build the first production run. It is the only full-scale manufacturing Biotech incubator in the U.S. Full scale manufacturing is planned to take place in the City of San Angelo where MedHab worked closely with the Concho Valley Center for Economic Development. Texas A&M Corpus Christi is conducting kinesiology studies, Lamar University is developing Android and IOS applications and Deaton Engineering in Austin is providing additional software/firmware expertise. Darlene Ryan's mentorship from Tech Fort Worth totally reinforced Ross' belief in the entrepreneurial spirit!

Ongoing projects with TMAC include:

- The design of functional testing equipment to ensure product integrity
- The development of protocols and machines to condition and characterize sensors
- Development of manufacturing and testing protocols
- First Article production run to become FDA certified

What the Future Holds:

With the deployment of this technology, rehabilitation professionals will now know what the patient is really doing and have the data to prove it. The data will help refine the course of action required for a successful outcome. The MedHab product is the only device in the world that can do pressure and range of motion measurements simultaneously. It helps professionals understand the bio-equivalency of limbs. The device may also be used in future to better refine custom fitted prosthetics before the cast is molded.

There is also plenty of opportunity for MedHab in the retail market. With implementation of a running algorithm the product can be redesigned for running club members, elite athletes and their trainers to monitor bi-lateral measurement to prove mechanical differences in limbs. MedHab anticipates the success of the retail side of the business will help fuel the healthcare development side. The technology may eventually develop for use in other areas such as: arm and lumbar rehabilitation, diabetic neuropathy, stroke and Parkinson disease. The University of Southern California and the Veteran's Administration are interested in conducting additional studies.

MedHab is transitioning to an "S" corporation and is in the process of carefully selecting its Board of Directors. At this point, the possibilities appear to be unlimited for this new product.

"This relationship has been incredible; TMAC provides a wealth of resources along the entire path of product commercialization. Their deep experience in industrial engineering and business growth provides us mature processes for delivering quality products without waste. This partnership is leading us to FDA certification. We are about to embark on a successful launch of a great product and profitable business that will speed patient recovery more cost effectively with better results than anything currently found in the marketplace."

Johnny Ross
Co-Founder & CEO

Take the first step to a more successful future!
Contact TMAC today for your free mini-assessment.
Call 1-800-625-4876 or visit www.tmac.org for more information.