

SUPERIOR MEDICAL INSTRUMENTS BUSINESS PLAN WITH AN ANALYSIS  
OF INNOVATIVE SPORTS TRAINING, INC.

By

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## Abstract

The business plan is in regards to the launch of Superior Medical Instruments, LLC. This company manufactures an electronic device that is used for rehabilitation in the physical therapy market. The business plan includes an evaluation of the opportunity, a breakdown of the target market, marketing research, operational strategies, and a financial evaluation of the venture.

In addition to the business plan is an entrepreneurial profile of a benchmark company, Innovative Sports Training, Inc. This company manufactures and sells products used for research and rehabilitation. The profile analyzes the company's operations, entrepreneurial characteristics, and functions. The company compared and contrasted with Superior Medical Instruments, LLC.

# Leadership Statement

All four members of the group were involved in the created of the business plan. The following is a breakdown of the work each person contributed to the project:

## **Arvin Ahmadi**

I acted as the Marketing Manager of the venture. As the Marketing Manager, I conducted research on the appropriate markets for our venture. This included both primary and secondary research. Primary research included one-on-one interviews, focus groups, and white papers. My role was to lead this research and analyze the information that was collected.

In addition to this role, I also attended the graduate section of the entrepreneurship capstone class. This class involved more academic learning, which I was able to contribute to my group. Lastly, I conducted an entrepreneurial profile of a benchmark company. Only Kelly Olson and I created such a profile because of our honors status.

## **Jason Berg**

- Acted as the General Manager of the venture
- Organized meetings
- Recorded minutes for all of the group meetings

## **Kelly Olson**

- Acted as the Financial Manager of the venture
- Attended the graduate section of the entrepreneurship capstone class
- Researched finances associated with the venture
- Constructed a financial model

## **Paul Swift**

- Acted as the Operations Manager of the venture
- Researched operational procedures that our venture would contain
- Conducted an analysis of the intellectual property associated with the venture



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## Executive Summary

Superior Medical Instruments (SMI) is a medical device manufacturer that has designed a medical device to assess and diagnose restricted mobility. This product, the Motion Assessment Package (MAP), utilizes electromagnetic motion tracking technology to measure a patient's range of motion. The MAP increases clinical efficiency through faster, more accurate measurements and automated progress report generation. These features provide value to clinicians by reducing weekly paperwork by hours and increasing clinical reimbursements by up to \$6,000 per year.

Currently, range of motion measurements are made using goniometers. These instruments are time consuming and inaccurate. Furthermore, there is a lack of standardization in their use and as a result there is measurement variation between clinicians. The MAP provides a comprehensive solution to these problems while providing additional features that improve patient rehabilitation. Such features include biofeedback exercise guidance, 3-D motion reenactment and analysis, and longitudinal recovery tracking.

The primary target market for the MAP is the physical therapy industry. Within this industry, we plan to target private physical therapy practices. These clinics provide the highest quality of care and demand the latest technologies for their patients. Additional markets for this venture include orthopedics, athletic training, rheumatology, and academic research. These markets can be easily penetrated through minor adaptations to the MAP's software.

SMI will raise awareness for the MAP through clinical research with our strategic partner, the Arizona Arthritis Center. We also intend to advertise our product in popular medical magazines and physical therapy product catalogs. SMI will conduct direct sales through established distribution channels with our strategic distribution partners.

Superior Medical Instruments has four full-time employees: Arvin Ahmadi, Jason Berg, Kelly Olson, and Paul Swift. The venture team is also supported by an experienced advisory panel that includes: Dr. Grant Senner, Director of Business Development at Athlon Physical Therapy; Paul Howe, Computing Manager at the Arizona Arthritis Center; and Robert Morrison, Executive Director of the Desert Angles.

SMI is currently beta testing the prototype and is awaiting \$600,000 in funding to complete software development and finance their assembly and distribution operations. Superior Medical Instruments has determined a pre-money valuation of \$1,800,000. SMI's 'pro forma' financial statements forecast sales of \$15.5 million in year five.

Through the use of our proprietary hardware and software technology Superior Medical Instruments is poised to quickly penetrate the rehabilitation markets and "make assessment easy".

## Problem and Opportunity

Range of motion (ROM) measurements are angle measurements that describe a joint's mobility. These measurements are crucial for diagnosing ailments and monitoring patient's progress throughout the recovery process. Areas of treatment that use these measurements include physical therapy, rheumatology, chiropractics, orthopedics and sports medicine. Medical professionals in all of these fields have expressed the need for a better way to take ROM measurements.

ROM measurements are currently being made using an outdated tool called a goniometer. The goniometer has many problems including inaccuracy and lack of standardization, causing recurring inter and intra operator error. Superior Medical Instruments provides a solution to these problems by offering a product that is accurate to within a tenth of a degree and eliminates these errors.

An opportunity exists in this growing industry, with an increasing number of hospitals and clinics nationwide. According to the Bureau of Labor Statistics, The number of physical therapists is expected to grow 27% from 2006-2016.

There is also expansion in the industry due to the growing population of Baby Boomers, who gradually seek more medical treatment as they age. According to Patterson Medical's FY07 10K, American's over 65 are expected to grow to 54 Million in 2020 and 79 Million in 2050. This substantial growth has created an opportunity to sell our product to medical fields that measure ROM.

## Product Description

The Motion Assessment Package (MAP) has been in development in the Arizona Arthritic Center at the University of Arizona's Medical Center for the past 2 years. The product is an electronic device that is capable of tracking three dimensional positioning and orientation. This allows the MAP to measure ROM within a tenth of degree of accuracy in all three dimensions for any joint in the body. Furthermore, the nature of the product helps to eliminate the inter and intra operator error that occurs during ROM measurements. Additional software is currently under development that would allow the MAP to perform features such as:

- Disability and recovery index
- Longitudinal recovery tracking
- Biofeedback exercise guidance
- Automated progress report generation

- Electronic medical record integration
- Full 3-D analysis and reenactment

Once the development of these features is completed, the MAP software package will be customized to address the specific needs of each specialized rehabilitation field. For example, a disability and recovery index would be beneficial to the diagnosis of chronic degenerative diseases found in rheumatology such as ankylosing spondylitis, the fusing of the spinal joints. Funding is required to complete the development of the software features which will allow the MAP to quickly enter a variety of markets.

The product is a package comprised of 3 parts: a sensor, a transmitter, and a computer. The sensor is attached to the patient's body anywhere near a joint using either a Velcro strap or a disposable adhesive pad. As the patient moves their joint, the sensor receives and sends its position to the computer. The computer then calculates the sensor's movements. Inside the computer the information is manipulated into clinically relevant data through advanced algorithms. The information is then displayed to the clinician through an easy-to-use interface. The entire package, including the hardware and software, is currently protected with a provisional patent. Below are pictures, of the transmitter, the computer, and the sensor, respectively:

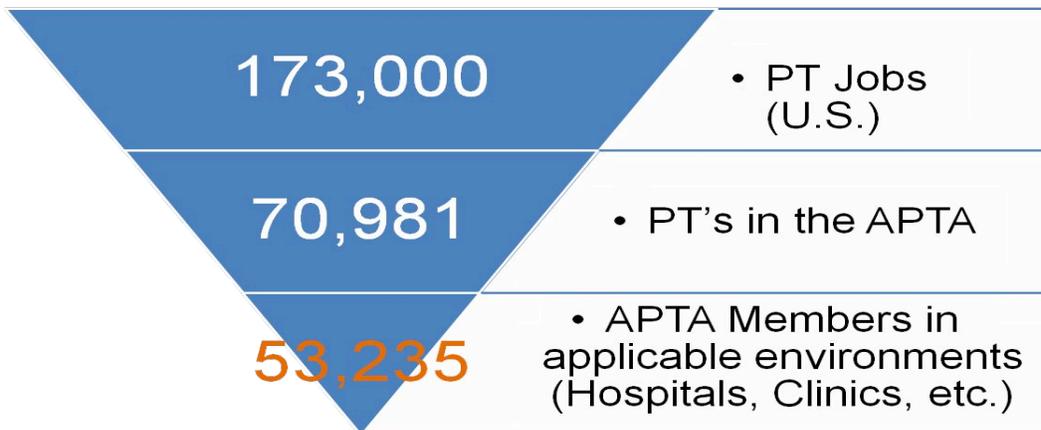


The entire package will be priced at approximately \$6,500. This pricing will place us between our low end competitor, TyQ Corp, and our high end competitor, Innovative Sports Training. Our product will provide all of the necessary functionality of the higher end product with a price that is just over the lower end product.

An FDA consultant has determined that the MAP is a Class II device exempt from 510(k) premarket notification after his preliminary analysis. For more information on the device's FDA classification, refer to the appendices.

## Target Market and Customers

According to the Bureau of Labor Statistics, there are 173,000 physical therapists in the United States. Of these we want to target those professionals that participate in a reputable industry organization such as the American Physical Therapy Association (APTA). Members of the APTA are the most interested in technological advances and are constantly seeking to improve the efficiency of their practices. The APTA has approximately 70,000 certified members. Based on demographic data from the APTA 2006 annual report, approximately 77% of their members work in environments applicable to our product (hospitals and outpatient clinics). As a result, SMI's primary target market is approximately 53,000 physical therapists.



The physical therapy market is appropriate as a primary market because physical therapists frequently take ROM measurements to diagnose and treat their patients. Physical therapists and their technicians spend a large amount of time making these measurements because they are crucial in monitoring the progress of a patient. Clinicians are burdened with manual data entry and hours of paperwork. Some of the physical therapists that we interviewed have reported that ROM measurements and the associated paperwork require approximately ten hours per week. The majority of this time is spent on the paperwork, and as a result, we estimate that this time can be reduced by up to 50%.

According to the Bureau of Labor Statistics, the number of physical therapists is expected to grow 27% from 2006-2016. This is fueled by a growing population of Baby Boomers, who are living longer and more active lifestyles, and as a result are requiring more rehabilitative treatment. According to Patterson Medical's FY07 10-K, American's over 65 are expected to grow to 54 Million in 2020 and 79 Million in 2050. This substantial growth has created an opportunity to sell MAP into a rapidly expanding industry.

Secondary and tertiary markets include rheumatology, orthopedics, sports medicine, neurology and academic research. These markets also require easy and accurate ROM measurements in addition to the other assessment features offered by our software. The MAP software package will be customized to address the specific needs of each specialized rehabilitation field and can increase our market universe to more than the 53,000 physical therapists in our target market.

## **Business Model**

Superior Medical Instruments will earn a profit by assembling the MAP and selling it through established distribution channels. The software development will be outsourced to an experienced software development firm. The motion sensing hardware will be purchased in bulk from Polhemus, Ascension Technologies, or a variety of other suppliers and shipped to SMI's assembly center. At the assembly center the motion sensing technology will be combined with a computer and software will be loaded onto it by an experienced technicians. The MAP will then be safely packaged and shipped to its end user.

The cost of producing a single MAP will be approximately \$2,500. The product will be sold at a price of \$6,500, resulting in a margin of \$4,000. The company will generate supplementary and recurring revenues through items such as technical support and product accessories. Product accessories include disposable adhesive pads and an advanced motion glove used for the assessment of a hand's ROM. Additional sources of revenue will include extended warranties and software updates.

Sales will be executed through companies that supply hospitals and clinics with medical equipment. One such company is Patterson Medical. Their branch, Sammons Preston, is the largest supplier to physical therapy clinics in the United States. The MAP will also be accessible through medical catalogs and our own online distribution site. In addition, the MAP will be shown in trade shows to increase market and customer awareness. SMI's goal is to penetrate twenty-five percent of the primary target market by the fifth year of operations.

The first sales of the product will be made to the University of Arizona's UMC Arthritis Center and Athlon Physical Therapy, both of which are located in Tucson, Arizona.

## Competitive Advantage

SMI has identified three potential competitors for the MAP: the goniometer, TyQ Corporation, and Innovative Sports Training Inc. The MAP's advantages over these competitors include time savings, increased insurance reimbursement and improved measurement accuracy.

### Goniometer

The goniometer is an outdated tool that has many problems, the most important of which is that measurements must be manually recorded in patients' file which is an inefficient use of physicians' time and clinics' resources. It has also been proven to be up to ten degrees inaccurate when measuring ROM.

### TyQ Corporation & Innovative Sports Training

SMI also faces two direct competitors: Ty-Q Corporation and Innovative Sports Training Inc. Ty-Q's device, the Q-ROM, is limited to spinal ROM measurements and is only capable of tracking two-dimensional movement. Innovative Sports Training's software is difficult to use and is too complex for clinical use. Neither of these competitors have an automated data entry system.

### Superior Medical Instruments

Superior Medical Instruments provides a solution to these problems with the Motion Assessment Package (MAP). The MAP automatically saves measurements into patients' charts and generates progress reports. Based on interviews conducted with practicing physical therapists, clinicians spend approximately ten hours per week on taking ROM measurements and doing the associated paperwork. Our research trials have shown that the MAP can reduce the time spent on these responsibilities by 50%, saving clinicians approximately five hours per week. The MAP's ability to automatically input data and print out progress reports can be used to substantiate patient progress for insurance reimbursements as well.

\*Refer to the ROM White Paper Feedback in the appendix for more information regarding these interviews.

The MAP goes beyond these advantages with its ability to render three-dimensional images on the product's screen with data from previous examinations. These images can be overlapped, showing progress over a period of time.

In addition, the MAP's range of motion measurements are the most accurate through the use of electromagnetic technology, rather than inclinometers used by Ty-Q. It is also capable of assessing any joint in the body in all three dimensions. Last, the MAP's user friendly software makes it the easiest to use, by only outputting measurements that clinicians desire.

Also, SMI has partnered with the University Medical Center's Arthritis Center at the University of Arizona. Since the MAP is being co-developed by a credible institution, our product will be more accepted than our competitors. Physicians at this institution have already begun testing the product and will bring credibility to the venture.

## Environment and Context

The primary market for the MAP is physical therapy. Physical therapists and their technicians spend a significant amount of time making ROM measurements. These measurements are crucial to properly monitor progress through treatments.

According to the Bureau of Labor Statistics, employment of physical therapists is expected to grow from 173,000 in 2006 to 220,000 by 2016. This significant growth in physical therapy is due to the large aging population. In 1990, 31.1 million Americans were 65 years of age or older. By 2020, this population is projected to increase to 54 million according to Patterson Medical's FY07 10-K. This is supported by the ATPA's projection that by 2050 the elderly population will number about 79 million.

Two competitors in the industry that we have used as benchmarks are TyQ Corporation and Innovative Sports Training Inc. The presence of competitors in the industry validates the need for improved ROM assessment. TyQ concentrates on the chiropractic market only due to its limited ability to measure cervical, thoracic, and lumbar ROM only. The product they sell uses a different technology from ours: inclinometers. This technology is limited in its use, therefore preventing any other ROM measurements to be made with the sensors. TyQ offers two versions of their product, priced at \$2,000 and \$2,800 per unit.

Innovative Sports Training Inc. concentrates on the athletic performance enhancement market. They sell products capable of using multiple motion tracker technologies including inclinometers, optical trackers, and magnetic trackers. They offer a Physical Therapy Suite that can be installed into the hardware they provide. Hardware costs vary depending on the number of sensors desired, however the Physical Therapy Suite software costs \$7,500 alone.

\*Refer to the Competitor Analysis in the appendix for a further breakdown and description SMI's major competitors.

## Marketing and Sales Strategy

Raising awareness of our product will be achieved using four strategies: magazine and journal advertisements, trade shows, research studies and SuperiorMedical.com.

### Magazine and Journal Advertisements

SMI will advertise in medical journals including the *Physical Therapy Journal* by the APTA and the *Journal of Orthopedic & Sports Physical Therapy* (JOSPT). The *Physical Therapy Journal* is the most popular journal in the field and is issued monthly, reaching over 69,000 individuals and institutions. The JOSPT is also a monthly issued journal that reaches over 23,500 individuals and institutions including clinicians, practitioners, and researchers in the physical therapy field.

### Trade Shows

Another way we will raise awareness of the MAP is to attend trade shows including the *Annual Conference and Exposition of the American Physical Therapy Association* and the *Combined Sections Meeting by the American Physical Therapy Association*. Our intention is to provide product demonstrations at the trade shows and familiarize professionals with our product.

### Research Studies

We also plan to provide the MAP at a discount to research institutions for their studies in hopes that its reputation of time saving and ease of use will spread. It is our goal that the MAP will someday become the gold standard for assessing range of motion.

### SuperiorMedical.com

SuperiorMedical.com is another way that we will raise awareness for the MAP. The website will have everything a potential customer would want to know about the product including videos that demonstrate how the MAP is used. There will also be a way to purchase the product directly from SMI through the website.

Our business's sales strategy is to hire a distribution company, which has already established relationships with customers in our target markets.

Patterson Medical is such a company. Their branch, Sammons Preston, focuses on rehabilitation, assistive and splinting products. Their catalog and sales force is one of the largest in the industry and they have established relationships with occupational

therapists and physical therapists. Since we do not yet have these relationships, it is most appropriate for our small company to outsource these services to an established distribution firm such as Patterson Medical.

## **Technology Strategies**

The actual hardware of the device is currently enclosed in a small accessible housing box while the transmitter and sensors must remain outside for functional purposes. Atop the housing unit is a tablet personal computer for easy user interaction and stand-alone capability. Production units will exhibit physical features that both preserve functionality of the technology and the practicality needed in everyday medical rehabilitation offices. Production units will be customizable and can include wireless sensors and a telescopic transmitting antenna depending on the clinician's needs.

Additional software development will be the major requirement to take this product to market. Software features will evolve as we gain feedback from focus groups with product interaction. Our ongoing relationship with the Arizona Arthritis Center will also be of significant value as their clinical research continues to guide the MAP's product and software development. These clinical research activities as well as focus groups will be an integral part of proving the product and the technologies' usefulness in the medical field.

Protection of the firm's intellectual property will come through software copy-writing, trade-marking of products and features, and patenting of all unique software assessment algorithms.

## **Management Team**

SMI's management team is comprised of four senior University of Arizona students. The General Manager, Jason Berg, has 5 years of experience in corporate business and possesses strong leadership and communication skills. Arvin Ahmadi, the Marketing Manager, is an honors student who has work experience in athletic training. The Product and Operations Manager, Paul Swift, has an engineering education and over 3 years experience in orthopedic medicine. Kelly Olson, the Finance Manager, is also an honors student who has work experience in financial analysis and the computer hardware industry. The team member's complimentary skills and core competencies will help SMI successfully launch and maintain the venture.

Superior Medical Instruments is also supported by experienced professionals. Our advisory panel includes: Robert Morrison, Executive Director of the Desert Angels;

Grant Senner MD, Director of Patient Services and Business Development at Athlon Physical Therapy; and Paul Howe, Computing Manager at the Arizona Arthritis Center. Additional advisory panelists include a variety of professionals that have expertise in patent law, intellectual property protection, medical device consulting, FDA approval, rheumatology, and orthopedic surgery.

## Development Plan

Superior Medical Instruments is now a registered trade name in the state of Arizona. SMI will be a Limited Liability Company. The current employees are limited to the management team, with foreseeable expansion of 1-2 employees every six months through year five. SMI will be able to maintain a relatively low employment level due to outsourcing to manufacturers and established distributors.

Software development will constitute approximately twenty-five percent of the start-up costs. The software development will be outsourced to an experienced design firm and will be maintained internally by a software engineer, hired within the first few months. Customer service, including technical issues, will initially be handled by the software engineer. Future software developments will be assigned to in-house designers or outsourced back to the original design company.

At launch, Superior Medical Instruments will be prepared to focus on the physical therapy market nationwide. SMI intends to penetrate our secondary markets by year two with international market expansion goals by year three.

The choice to supply to the physical therapy market is supported by our primary and secondary market research (see appendices). Continued relationship development with strategic partners in the medical research environment is a strong competitive advantage and ongoing goal of our firm. From this, Superior Medical Instruments will gain acceptance through publications and develop our reputation as the new standard in restricted mobility assessment.

## Risks and Contingencies

Due to the multiple medical fields which require motion tracking and range of motion assessment, there is the opportunity for our technology to be tailored to a variety of different markets with minor modifications to the software. While there is a great opportunity for our venture, it is imperative to understand the potential risks so that they may be adequately addressed and mitigated.

The primary risk that our company faces is competition and difficulty in securing a patent for our intellectual property. The underlying technology of this product is over 20 years old and securing a patent is not feasible. With intellectual property risks we could face competition from larger established firms who possess economies of scale, experienced software engineers, and established distribution channels. Of these established firms, we will likely face competition from two main companies, TyQ Corporation and Innovative Sports Training. The core focus of these companies is similar to Superior Medical Instruments, but they possess few software suites applicable to our markets. SMI's distinction over these established competitors is the profile of our target customer. The needs of physical therapists and rheumatologists have not yet been affordably met. Our entrance into these markets could provide us with a first mover advantage. The MAP could become the standard for range of motion measurements and as such, our brand or product name could become synonymous with restricted mobility assessment.

There also exists the inherent threat, as with most technological products, that advances in technology could result in cheaper and more accurate hardware. This would allow an entrant to potentially gain a large portion of our market share if they developed a more cost efficient solution. However, if this sensing technology is not proprietary then SMI could easily adapt their software to work with this technology.

## **Operational Strategies**

Superior Medical Instruments will outsource the manufacturing and sales of our products. Polhemus, Ascension Technologies, or a variety of other suppliers will manufacture the electromagnetic motion tracking system and will ship the components to our assembly center. Sales will occur through established distribution channels in the physical therapy market, online at SuperiorMedical.com, and also at industry tradeshows. Superior Medical Instruments is currently discussing a sales partnership with Patterson Medical, one of the largest equipment suppliers to the physical therapy industry. Additional products created by SMI, such as sensor adhesives and other consumables, will be available online and also through our distributors. All technical support related to the MAP hardware and software will be provided by SMI's technical team. The MAP will include a one year warranty from date of purchase and during this time all technical support and repairs/replacements will be free to the customer. After this period expires technical support and repairs will operate on a pay per use basis. SMI will raise awareness for its products through clinical research and other industry publications.

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## Assumptions for Pro Forma Financial Statements

The assumptions used in the 'pro forma' financial statements to forecast sales were influenced from data gathered on market size and competition in addition to forecasts related to market penetration derived from comparable companies in our target markets. Sales projections assume that we will enter into a variety of markets in year two and will proceed with international sales at the end of year three. Due to the use of range of motion in a variety of fields, our product can be easily adapted to serve the needs of various medical professions. Assumptions related to cost of goods sold for our primary product were based on the costs to create the prototype. Federal, State, and Payroll taxes were based on information found online including the IRS website and also the Arizona Department of Revenue.

## Investment Funds Sought and Use of Proceeds

Superior Medical Instruments will be organized as a Limited Liability Company. Based on a 'pro forma' valuation, Superior Medical Instruments has a pre-money valuation of \$1,800,000. SMI will be seeking \$600,000 in early stage funding to supplement the \$150,000 that will be invested by the founders, for a total of \$750,000. SMI intends to receive the \$600,000 in funding spread across three tranches:

- Month 1: \$350,000
- Month 4: \$150,000
- Month 7: \$100,000

This will allow the management of Superior Medical Instruments and its investors to set milestones at which additional capital will be injected.

These funds will be used for the following purposes in Year 1:

### Employee Expenses

Salaries and wages	\$ 260,000
Employee benefits	\$ 38,000
Payroll taxes	\$ 23,400
<b>Total Employee Expenses</b>	<b>\$ 321,400</b>

### Operating Expenses

Software Development	\$ 200,000
Rent	\$ 36,000
Misc. Business Exp.	\$ 19,500
Insurance (Prop+Liab)	\$ 10,000

Marketing Supplies	\$ 22,000
Total Operating Expenses	<b>\$ 287,500</b>

Hard Assets	
Assembly Tools	\$ 20,000
Office Equipment	\$ 20,000
Computers	\$ 14,000
Furniture	\$ 8,000
Total Hard Assets	<b>\$ 62,000</b>

Working Capital	<b>\$ 79,100</b>
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Total Cash Outflows	<b>\$ 750,000</b>
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Cost of goods sold for year one is projected to be \$260,000 and part of the inventory purchases will be financed by the sale of our product. Based on 'pro forma' financial statements, SMI will experience its lowest cash position in month three with a cash balance of approximately \$130,000 (approximately a three months' supply at the average cash burn rate).

**Superior Medical Instruments**  
**Projected Income Statements (\$s)**

	Year 1	Year 2	Year 3	Year 4	Year 5
<b>NET SALES</b>	561,603	2,541,459	6,051,098	10,445,247	15,627,310
<b>TOTAL COST OF SALES</b>	261,593	1,203,463	2,685,431	4,395,886	6,264,786
<b>GROSS MARGIN</b>	300,010	1,337,996	3,365,667	6,049,361	9,362,524
<b>TOTAL OPERATING EXPENSES</b>	624,473	568,763	857,939	1,101,312	1,333,654
<b>OPERATING PROFIT (LOSS) BEFORE INTEREST AND TAXES</b>	(324,463)	769,233	2,507,728	4,948,049	8,028,870
<b>DISTRIBUTION FOR TAXES</b>	-	(155,670)	(927,859)	(2,078,181)	(3,372,125)
<b>NET PROFIT (LOSS)</b>	<u>(324,463)</u>	<u>613,564</u>	<u>1,579,868</u>	<u>2,869,868</u>	<u>4,656,745</u>
<b>EBITDA</b>	(314,563)	781,367	2,527,332	4,977,013	8,074,384

## Harvest Plan

Superior Medical Instruments wishes to realize cash returns to investors as soon as possible. As such, management is open to either an IPO or an acquisition by a major medical instrument manufacturer. Recent acquirers in the medical device industry include Johnson & Johnson, Patterson Medical, U.S. Surgical and Boston Scientific. We believe that an acquisition by Patterson Medical would provide the greatest synergies due to their established distribution channels in the physical therapy market. In the event there is a lack of credit financing or an available IPO market, Superior Medical Instruments is also willing to negotiate arranged dates at which shares will be repurchased from investors or a dividend paid.

## Summary

SMI's product portfolio is comprised of instruments that are used to measure the range of motion in an individual's joints. Superior Medical Instruments, formed as an LLC, is seeking proposed funding of \$600,000. The primary use of funds is software development. In addition, funds will also be used to purchase hard assets such as computers, assembly tools, and furniture, and for expenses such as employee salaries and marketing fees. Superior Medical Instruments hopes to realize cash returns to its investors as soon as possible and as such are open to an IPO, acquisition, or predetermined dividend payout/stock repurchase.

Superior Medical Instruments is well poised to achieve success in the rapidly growing physical therapy market. This industry's growth is fueled by a rapidly expanding elderly population, an increase in active lifestyles, and an increase in the number of implantation and reconstructive surgeries. While Superior Medical Instruments faces competition in this market, we intend to enter at a moderate price point, providing superior technology and increased features compared to our low cost competitors, and significant value compared to our high cost competitors.

As a result of our ability to sell our products soon after funding, we do not anticipate any additional rounds of dilutive funding. Due to our low fixed-cost structure, Superior Medical Instruments projects that it will only need to sell 600 units by our third year in order to break even. As a result of zero leverage and low fixed costs, Superior Medical Instruments does not possess significant cash flow risk.

After extensive analysis Superior Medical Instruments has determined a pre-money valuation of \$1,800,000. This valuation was determined through the use of multiple

valuation methods and has given consideration to the current economic climate. We believe that our business is an excellent way to invest in this rapidly growing industry and we project that our investors will realize significant returns.

# Appendices and Research

## Competitor Analysis

### **TyQ Corporation**

TyQ concentrates on the chiropractic market only due to its limited ability to measure cervical, thoracic, and lumbar ROM only. Their product, the Q-ROM, uses inclinometers to make these measurements. This technology is limited in its use, therefore preventing any other ROM measurements to be made with the sensors.

TyQ offers two versions of their product, priced at \$2,000 and \$2,800 per unit. The \$2,800 unit includes a laptop that attaches to the other hardware. The Q-ROM is available for purchase on TyQ's website or through phone purchases.

### **Innovative Sports Training, Inc.**

Innovative Sports Training Inc. concentrates on the athletic performance enhancement market. They sell products capable of using multiple motion tracker technologies including inclinometers, optical trackers, and magnetic trackers. Therefore, a customer is capable of purchasing a product with a great degree of accuracy; however, the customer may opt to use a more basic technology that is not as accurate such as inclinometers. Their products can be available through the company directly only.

They offer a Physical Therapy Suite that can be installed into the hardware they provide. Hardware costs vary depending on the number of sensors desired, however the Physical Therapy Suite software costs \$7,500 alone. In order to use the Physical Therapy Suite, it is necessary to purchase the standard software and hardware which can range between approximately \$5,000 and \$35,000, depending on the number of sensors desired.

## FDA Compliance Evaluation

### Regulatory Decision Path for: UA ROM Medical Device Business Model

Performed by: Joe Curtis, RAC

Date of Findings: November 20, 2008

#### Overview:

A group of University of Arizona business students have identified a medical device that would enable a non-physician health care employee to perform range of motion (ROM) measurements on patients while recording the measurements automatically into a computer program on a conventional PC unit. Typically, a physician would conduct such a ROM assessment with a goniometer and record their findings respectively.

As part of their due diligence in constructing their business plan, an assessment was requested to determine the regulatory decision path (RDP) to market such a technology. Mr. Joe Curtis, RAC of The Curtis Group, LLC was contacted to make this initial assessment.

#### Product Identification & Classification:

A review the Code of Federal Regulations, specifically 21 CFR 888.1500 and 21 CFR 888.1520 identifies the goniometer as an AC powered, and non-powered respectively, device intended to evaluate joint function by measuring and recording ranges of motion, acceleration, or forces exerted by a joint.

This device is a Class I and exempt from premarket notification & clearance by the Food & Drug Administration and is thereby subject to General Controls by the sponsor/manufacturer.

The UA ROM device, at its current design and configuration, utilizes electrodes to convey the motion information to a PC unit. Further examination of the CFR identifies a goniometer with electrodes (also in 21 CFR 888.1500) as an AC powered, or battery powered, device intended to evaluate joint function by measuring and recording ranges of motion, acceleration, or forces exerted by a joint. The Class II (special controls) goniometer uses transcutaneous adhesive electrode lead wires and patient cables to transmit and record patient data.

This type of Class II device is 510(k) Exempt from premarket notification & clearance by the Food & Drug Administration. Because it is a Class II device, special controls will apply. For example, FDA down-classified wire leads, electrodes, etc. to a premarket clearance or 510(k) exempt status but expects the sponsor/manufacturer to comply with performance standards for such wire leads and cables along with General Controls that include a functional Quality Systems Management of the sponsor/manufacturer's Current Good Manufacturing Practices (cGMP).

Product identification and classification was performed with the currently available Code of Federal Regulations and confirmed with FDA's 510(k) Exempt listings updated as recent as 11/10/2008.

### **Competitive Review:**

The students supplied two known companies with range of motion technology;

1. TyQ Corporation
2. Polhemus, Inc.

A review of FDA's 510(k) and PMA databases revealed no 510(k) Premarket Notification Clearances or Premarket Approvals for either company.

### **Regulatory Decision Path Assessment:**

The UA ROM device as stated and reviewed appears to function as a goniometer with electrodes or cables to transmit and record patient data. The following is the RDP for this technology:

**Classification:** Class II

**Submission Type:** 510(k) Exempt

**Controls:** Special Controls (adherence to General Controls and Special Controls such as standards for electrodes, wire leads and cables).



## Pro Forma Income Statement (Year 1, Monthly)

### Superior Medical Instruments Projected Income Statements (\$s)

Month	1	2	3	4	5	6	7	8	9	10	11	12
<b>SALES</b>												
Gross Sales	-	-	-	16,478	43,680	58,275	61,227	64,333	71,481	74,960	86,458	90,384
Returns and Allowances	-	-	-	(165)	(437)	(583)	(612)	(643)	(715)	(750)	(865)	(904)
<b>NET SALES</b>	-	-	-	16,313	43,243	57,692	60,615	63,690	70,766	74,210	85,593	89,480
<b>COST OF SALES</b>												
Materials	-	-	-	6,493	17,125	23,611	24,647	25,733	29,198	30,399	36,316	37,655
Labor	-	-	-	-	-	150	152	153	300	303	600	606
Taxes and Benefits	-	-	-	-	-	36	36	37	72	73	144	145
Other	-	-	-	824	2,184	2,864	3,011	3,166	3,474	3,647	4,123	4,317
<b>TOTAL COST OF SALES</b>	-	-	-	7,317	19,309	26,661	27,846	29,088	33,044	34,422	41,183	42,724
<b>GROSS MARGIN</b>	-	-	-	8,996	23,934	31,032	32,769	34,602	37,722	39,788	44,410	46,756
<b>OPERATING EXPENSES</b>												
Salaries and wages	21,667	21,667	21,667	21,667	21,667	21,667	21,667	21,667	21,667	21,667	21,667	21,667
Payroll taxes	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950	1,950
Employee benefits	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167	3,167
Depreciation	-	900	900	900	900	900	900	900	900	900	900	900
Bad debt expense	-	-	-	165	437	583	612	643	715	750	865	904
Rent	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Marketing Supplies	-	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Misc. Business Exp.	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	3,000
Insurance (Prop+Liab)	833	833	833	833	833	833	833	833	833	833	833	833
Software Development (1 time)	200,000	-	-	-	-	-	-	-	-	-	-	-
Additional Operating Expenses	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL OPERATING EXPENSES</b>	232,117	35,017	35,017	35,181	35,453	35,599	35,629	35,660	35,731	35,766	35,881	37,421
<b>OPERATING PROFIT (LOSS)</b>												
<b>BEFORE INTEREST AND TAXES</b>	(232,117)	(35,017)	(35,017)	(26,185)	(11,519)	(4,568)	(2,860)	(1,058)	1,991	4,022	8,529	9,336
<b>INTEREST EXPENSE</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>PROFIT (LOSS) BEFORE TAXES</b>	(232,117)	(35,017)	(35,017)	(26,185)	(11,519)	(4,568)	(2,860)	(1,058)	1,991	4,022	8,529	9,336
<b>DISTRIBUTION FOR TAXES</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>NET PROFIT (LOSS)</b>	(232,117)	(35,017)	(35,017)	(26,185)	(11,519)	(4,568)	(2,860)	(1,058)	1,991	4,022	8,529	9,336

## Pro Forma Income Statement (Year 2, Monthly)

### Superior Medical Instruments Projected Income Statements (\$s)

Month	13	14	15	16	17	18	19	20	21	22	23	24
<b>SALES</b>												
Gross Sales	110,148	123,556	138,106	153,883	170,974	209,747	230,832	242,346	266,293	292,120	306,829	322,297
Returns and Allowances	(1,101)	(1,236)	(1,381)	(1,539)	(1,710)	(2,097)	(2,308)	(2,423)	(2,663)	(2,921)	(3,068)	(3,223)
<b>NET SALES</b>	<b>109,047</b>	<b>122,320</b>	<b>136,725</b>	<b>152,344</b>	<b>169,265</b>	<b>207,649</b>	<b>228,524</b>	<b>239,922</b>	<b>263,630</b>	<b>289,199</b>	<b>303,761</b>	<b>319,074</b>
<b>COST OF SALES</b>												
Materials	44,945	49,779	54,991	60,604	66,646	80,590	87,929	91,712	99,954	108,788	113,550	118,532
Labor	3,499	3,913	4,361	4,848	5,375	6,569	7,219	7,575	8,313	9,108	9,562	10,039
Taxes and Benefits	840	939	1,047	1,164	1,290	1,577	1,733	1,818	1,995	2,186	2,295	2,409
Other	5,303	5,972	6,697	7,484	8,336	10,273	11,325	11,899	13,094	14,383	15,116	15,887
<b>TOTAL COST OF SALES</b>	<b>54,587</b>	<b>60,603</b>	<b>67,096</b>	<b>74,100</b>	<b>81,647</b>	<b>99,009</b>	<b>108,205</b>	<b>113,003</b>	<b>123,355</b>	<b>134,466</b>	<b>140,523</b>	<b>146,868</b>
<b>GROSS MARGIN</b>	<b>54,459</b>	<b>61,717</b>	<b>69,629</b>	<b>78,244</b>	<b>87,617</b>	<b>108,640</b>	<b>120,318</b>	<b>126,920</b>	<b>140,275</b>	<b>154,733</b>	<b>163,238</b>	<b>172,206</b>
<b>OPERATING EXPENSES</b>												
Salaries and wages	23,833	23,833	23,833	23,833	23,833	23,833	26,700	31,700	31,700	31,700	31,700	31,700
Payroll taxes	2,145	2,145	2,145	2,145	2,145	2,145	2,403	2,853	2,853	2,853	2,853	2,853
Employee benefits	3,583	3,583	3,583	3,583	3,583	3,583	3,870	4,370	4,370	4,370	4,370	4,370
Depreciation	900	900	900	900	900	900	900	1,167	1,167	1,167	1,167	1,167
Bad debt expense	1,101	1,236	1,381	1,539	1,710	2,097	2,308	2,423	2,663	2,921	3,068	3,223
Rent	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Marketing Supplies	2,000	3,000	3,000	3,000	3,000	3,000	4,500	4,500	4,500	4,500	4,500	4,500
Misc. Business Exp.	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Insurance (Prop+Liab)	833	833	833	833	833	833	833	833	833	833	833	833
Software Development (1 time)	-	-	-	-	-	-	-	-	-	-	-	-
Additional Operating Expenses	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL OPERATING EXPENSES</b>	<b>40,396</b>	<b>41,531</b>	<b>41,676</b>	<b>41,834</b>	<b>42,005</b>	<b>42,392</b>	<b>47,515</b>	<b>53,846</b>	<b>54,086</b>	<b>54,344</b>	<b>54,491</b>	<b>54,646</b>
<b>OPERATING PROFIT (LOSS) BEFORE INTEREST AND TAXES</b>	<b>14,063</b>	<b>20,187</b>	<b>27,953</b>	<b>36,410</b>	<b>45,612</b>	<b>66,248</b>	<b>72,803</b>	<b>73,073</b>	<b>86,189</b>	<b>100,389</b>	<b>108,746</b>	<b>117,560</b>
<b>INTEREST EXPENSE</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>PROFIT (LOSS) BEFORE TAXES</b>	<b>14,063</b>	<b>20,187</b>	<b>27,953</b>	<b>36,410</b>	<b>45,612</b>	<b>66,248</b>	<b>72,803</b>	<b>73,073</b>	<b>86,189</b>	<b>100,389</b>	<b>108,746</b>	<b>117,560</b>
<b>DISTRIBUTION FOR TAXES</b>	-	-	-	-	-	(21,054)	(22,436)	(22,436)	(22,436)	(22,436)	(22,436)	(22,436)
<b>NET PROFIT (LOSS)</b>	<b>14,063</b>	<b>20,187</b>	<b>27,953</b>	<b>36,410</b>	<b>45,612</b>	<b>45,194</b>	<b>50,367</b>	<b>50,637</b>	<b>63,753</b>	<b>77,953</b>	<b>86,310</b>	<b>95,124</b>



## Pro Forma Income Statement (Years 3 and 4, Quarterly)

### Superior Medical Instruments Projected Income Statements (\$s)

	Year 3						Year 4					
	Qtr1	Qtr2	Qtr3	Qtr4	Total	% Sales	Qtr1	Qtr2	Qtr3	Qtr4	Total	% Sales
<b>SALES</b>												
Gross Sales	1,176,007	1,383,441	1,633,429	1,919,344	6,112,220	101.0%	2,113,133	2,447,367	2,793,230	3,197,025	10,550,754	101.0%
Returns and Allowances	(11,760)	(13,834)	(16,334)	(19,193)	(61,122)	-1.0%	(21,131)	(24,474)	(27,932)	(31,970)	(105,508)	-1.0%
<b>NET SALES</b>	<b>1,164,247</b>	<b>1,369,606</b>	<b>1,617,094</b>	<b>1,900,150</b>	<b>6,051,098</b>	<b>100.0%</b>	<b>2,092,002</b>	<b>2,422,893</b>	<b>2,765,298</b>	<b>3,165,054</b>	<b>10,445,247</b>	<b>100.0%</b>
<b>COST OF SALES</b>												
Materials	425,968	492,064	570,648	658,904	2,147,584	35.5%	713,822	812,953	912,524	1,027,590	3,466,888	33.2%
Labor	36,560	42,954	50,658	59,467	189,638	3.1%	65,442	75,739	86,394	98,832	326,408	3.1%
Taxes and Benefits	8,774	10,309	12,158	14,272	45,513	0.8%	15,706	18,177	20,735	23,720	78,338	0.7%
Other	58,104	68,454	80,932	95,205	302,695	5.0%	104,872	121,560	138,828	158,993	524,252	5.0%
<b>TOTAL COST OF SALES</b>	<b>529,406</b>	<b>613,781</b>	<b>714,395</b>	<b>827,849</b>	<b>2,685,431</b>	<b>44.4%</b>	<b>899,842</b>	<b>1,028,429</b>	<b>1,158,481</b>	<b>1,309,135</b>	<b>4,395,886</b>	<b>42.1%</b>
<b>GROSS MARGIN</b>	<b>634,841</b>	<b>755,825</b>	<b>902,699</b>	<b>1,072,302</b>	<b>3,365,667</b>	<b>55.6%</b>	<b>1,192,160</b>	<b>1,394,464</b>	<b>1,606,817</b>	<b>1,855,919</b>	<b>6,049,361</b>	<b>57.9%</b>
<b>OPERATING EXPENSES</b>												
Salaries and wages	95,100	112,700	136,500	140,500	484,800	8.0%	140,500	148,500	152,500	164,500	606,000	5.8%
Payroll taxes	8,559	10,143	12,285	12,645	43,632	0.7%	12,645	13,365	13,725	14,805	54,540	0.5%
Employee benefits	13,110	14,870	17,250	17,650	62,880	1.0%	18,250	19,050	19,450	20,650	77,400	0.7%
Depreciation	4,519	5,029	5,029	5,029	19,605	0.3%	6,529	7,279	7,279	7,879	28,964	0.3%
Bad debt expense	11,760	13,834	16,334	19,193	61,122	1.0%	21,131	24,474	27,932	31,970	105,508	1.0%
Rent	13,500	13,500	13,500	13,500	54,000	0.9%	13,500	13,500	18,000	18,000	63,000	0.6%
Marketing Supplies	13,500	13,500	13,500	13,500	54,000	0.9%	16,500	18,000	18,000	18,000	70,500	0.7%
Misc. Business Exp.	14,000	16,500	16,500	16,500	63,500	1.0%	16,500	16,500	24,000	24,000	81,000	0.8%
Insurance (Prop+Liab)	3,600	3,600	3,600	3,600	14,400	0.2%	3,600	3,600	3,600	3,600	14,400	0.1%
Software Development (1 time)	-	-	-	-	-	0.0%	-	-	-	-	-	0.0%
Additional Operating Expenses	-	-	-	-	-	0.0%	-	-	-	-	-	0.0%
<b>TOTAL OPERATING EXPENSES</b>	<b>177,648</b>	<b>203,676</b>	<b>234,498</b>	<b>242,117</b>	<b>857,939</b>	<b>14.2%</b>	<b>249,155</b>	<b>264,267</b>	<b>284,486</b>	<b>303,404</b>	<b>1,101,312</b>	<b>10.5%</b>
<b>OPERATING PROFIT (LOSS) BEFORE INTEREST AND TAXES</b>	<b>457,193</b>	<b>552,149</b>	<b>668,201</b>	<b>830,185</b>	<b>2,507,728</b>	<b>41.4%</b>	<b>943,005</b>	<b>1,130,197</b>	<b>1,322,331</b>	<b>1,552,515</b>	<b>4,948,049</b>	<b>47.4%</b>
<b>INTEREST EXPENSE</b>	-	-	-	-	-	0.0%	-	-	-	-	-	0.0%
<b>PROFIT (LOSS) BEFORE TAXES</b>	<b>457,193</b>	<b>552,149</b>	<b>668,201</b>	<b>830,185</b>	<b>2,507,728</b>	<b>41.4%</b>	<b>943,005</b>	<b>1,130,197</b>	<b>1,322,331</b>	<b>1,552,515</b>	<b>4,948,049</b>	<b>47.4%</b>
<b>DISTRIBUTION FOR TAXES</b>	<b>(231,965)</b>	<b>(231,965)</b>	<b>(231,965)</b>	<b>(231,965)</b>	<b>(927,859)</b>	<b>-15.3%</b>	<b>(519,545)</b>	<b>(519,545)</b>	<b>(519,545)</b>	<b>(519,545)</b>	<b>(2,078,181)</b>	<b>-19.9%</b>
<b>NET PROFIT (LOSS)</b>	<b>225,228</b>	<b>320,184</b>	<b>436,236</b>	<b>598,220</b>	<b>1,579,868</b>	<b>26.1%</b>	<b>423,460</b>	<b>610,652</b>	<b>802,786</b>	<b>1,032,970</b>	<b>2,869,868</b>	<b>27.5%</b>

## Pro Forma Income Statement (Year 5, Quarterly)

### Superior Medical Instruments Projected Income Statements (\$s)

	Year 5					
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Total	% Sales
<b>SALES</b>						
Gross Sales	3,582,085	3,816,225	4,063,264	4,323,588	15,785,161	101.0%
Returns and Allowances	(35,821)	(38,162)	(40,633)	(43,236)	(157,852)	-1.0%
<b>NET SALES</b>	<b>3,546,264</b>	<b>3,778,063</b>	<b>4,022,631</b>	<b>4,280,352</b>	<b>15,627,310</b>	<b>100.0%</b>
<b>COST OF SALES</b>						
Materials	1,133,180	1,188,802	1,246,438	1,306,074	4,874,494	31.2%
Labor	110,694	117,913	125,529	133,554	487,691	3.1%
Taxes and Benefits	26,567	28,299	30,127	32,053	117,046	0.7%
Other	178,220	189,900	202,224	215,212	785,556	5.0%
<b>TOTAL COST OF SALES</b>	<b>1,448,661</b>	<b>1,524,914</b>	<b>1,604,318</b>	<b>1,686,893</b>	<b>6,264,786</b>	<b>40.1%</b>
<b>GROSS MARGIN</b>	<b>2,097,603</b>	<b>2,253,149</b>	<b>2,418,313</b>	<b>2,593,459</b>	<b>9,362,524</b>	<b>59.9%</b>
<b>OPERATING EXPENSES</b>						
Salaries and wages	170,050	170,050	176,050	179,050	695,200	4.4%
Payroll taxes	15,305	15,305	15,845	16,115	62,568	0.4%
Employee benefits	21,205	21,205	21,805	22,105	86,320	0.6%
Depreciation	10,014	11,286	12,007	12,207	45,514	0.3%
Bad debt expense	35,821	38,162	40,633	43,236	157,852	1.0%
Rent	18,000	18,000	18,000	18,000	72,000	0.5%
Marketing Supplies	18,000	18,000	18,000	18,000	72,000	0.5%
Misc. Business Exp.	24,000	33,000	33,000	33,000	123,000	0.8%
Insurance (Prop+Liab)	4,800	4,800	4,800	4,800	19,200	0.1%
Software Development (1 time)	-	-	-	-	-	0.0%
Additional Operating Expenses	-	-	-	-	-	0.0%
<b>TOTAL OPERATING EXPENSES</b>	<b>317,195</b>	<b>329,807</b>	<b>340,139</b>	<b>346,513</b>	<b>1,333,654</b>	<b>8.5%</b>
<b>OPERATING PROFIT (LOSS) BEFORE INTEREST AND TAXES</b>	<b>1,780,409</b>	<b>1,923,342</b>	<b>2,078,173</b>	<b>2,246,946</b>	<b>8,028,870</b>	<b>51.4%</b>
<b>INTEREST EXPENSE</b>	-	-	-	-	-	0.0%
<b>PROFIT (LOSS) BEFORE TAXES</b>	<b>1,780,409</b>	<b>1,923,342</b>	<b>2,078,173</b>	<b>2,246,946</b>	<b>8,028,870</b>	<b>51.4%</b>
<b>DISTRIBUTION FOR TAXES</b>	<b>(843,031)</b>	<b>(843,031)</b>	<b>(843,031)</b>	<b>(843,031)</b>	<b>(3,372,125)</b>	<b>-21.6%</b>
<b>NET PROFIT (LOSS)</b>	<b>937,377</b>	<b>1,080,310</b>	<b>1,235,142</b>	<b>1,403,915</b>	<b>4,656,745</b>	<b>29.8%</b>

## Pro Forma Statement of Cash Flows (Year 1, Monthly)

### Superior Medical Instruments

#### Projected Cash Flows (\$s)

Month	1	2	3	4	5	6	7	8	9	10	11	12
<b>CASH FLOWS FROM OPERATIONS</b>												
Net income	(232,117)	(35,017)	(35,017)	(26,185)	(11,519)	(4,568)	(2,860)	(1,058)	1,991	4,022	8,529	9,336
Adjustments to reconcile net income to cash flows from operations												
Depreciation	-	900	900	900	900	900	900	900	900	900	900	900
Changes in certain assets and liabilities												
Accounts receivable	-	-	-	(16,313)	(31,009)	(21,182)	(6,535)	(3,806)	(7,845)	(5,213)	(12,244)	(6,733)
Inventory	-	(3,246)	(11,809)	(13,875)	(7,004)	(1,579)	(2,818)	(4,066)	(4,160)	(6,587)	(4,984)	(9,707)
Other current assets	-	-	-	-	-	-	-	-	-	-	-	-
Accounts payable	-	1,623	4,281	4,280	1,881	530	1,138	1,167	1,780	1,814	2,157	3,031
Other current payables	-	-	-	-	-	-	-	-	-	-	-	-
Revolving line of credit	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL CASH FLOWS FROM OPERATIONS</b>	(232,117)	(35,740)	(41,644)	(51,194)	(46,751)	(25,898)	(10,175)	(6,863)	(7,334)	(5,063)	(5,642)	(3,173)
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>												
Purchase of equipment	(62,000)	-	-	-	-	-	-	-	-	-	-	-
Other Assets	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL CASH FLOWS FROM INVESTING ACTIVITIES</b>	(62,000)	-	-	-	-	-	-	-	-	-	-	-
<b>CASH FLOW BEFORE FINANCING</b>	(294,117)	(35,740)	(41,644)	(51,194)	(46,751)	(25,898)	(10,175)	(6,863)	(7,334)	(5,063)	(5,642)	(3,173)
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>												
Borrowing of long-term debt	-	-	-	-	-	-	-	-	-	-	-	-
Repayment of long-term debt	-	-	-	-	-	-	-	-	-	-	-	-
<b>CASH FLOW BEFORE MEMBERS' CONTRIBUTIONS</b>	(294,117)	(35,740)	(41,644)	(51,194)	(46,751)	(25,898)	(10,175)	(6,863)	(7,334)	(5,063)	(5,642)	(3,173)
Members' Capital Contributions	500,000	-	-	150,000	-	-	100,000	-	-	-	-	-
Members' Interest Repurchased	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL CASH FLOWS FROM FINANCING ACTIVITIES</b>	500,000	-	-	150,000	-	-	100,000	-	-	-	-	-
<b>NET CASH FLOWS</b>	205,883	(35,740)	(41,644)	98,806	(46,751)	(25,898)	89,825	(6,863)	(7,334)	(5,063)	(5,642)	(3,173)
<b>CASH, BEGINNING OF PERIOD</b>	-	205,883	170,144	128,499	227,305	180,554	154,656	244,481	237,618	230,283	225,220	219,578
<b>CASH, END OF PERIOD</b>	205,883	170,144	128,499	227,305	180,554	154,656	244,481	237,618	230,283	225,220	219,578	216,405

## Pro Forma Statement of Cash Flows (Year 2, Monthly)

### Superior Medical Instruments

#### Projected Cash Flows (\$s)

Month	13	14	15	16	17	18	19	20	21	22	23	24
<b>CASH FLOWS FROM OPERATIONS</b>												
Net income	14,063	20,187	27,953	36,410	45,612	45,194	50,367	50,637	63,753	77,953	86,310	95,124
Adjustments to reconcile net income to cash flows from operations												
Depreciation	900	900	900	900	900	900	900	1,167	1,167	1,167	1,167	1,167
Changes in certain assets and liabilities												
Accounts receivable	(20,538)	(18,165)	(17,724)	(19,220)	(20,825)	(42,615)	(30,471)	(16,618)	(26,557)	(31,495)	(20,954)	(18,953)
Inventory	(7,440)	(8,018)	(8,634)	(13,013)	(17,613)	(9,230)	(7,904)	(12,659)	(11,215)	(7,252)	(12,749)	(18,507)
Other current assets	-	-	-	-	-	-	-	-	-	-	-	-
Accounts payable	2,511	2,706	2,914	4,996	5,321	2,780	3,006	4,269	3,399	2,436	5,129	5,370
Other current payables	-	-	-	-	-	-	-	-	-	-	-	-
Revolving line of credit	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL CASH FLOWS FROM OPERATIONS</b>	(10,504)	(2,390)	5,409	10,073	13,395	(2,970)	15,899	26,796	30,546	42,807	58,903	64,200
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>												
Purchase of equipment	-	-	-	-	-	-	(16,000)	-	-	-	-	-
Other Assets	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL CASH FLOWS FROM INVESTING ACTIVITIES</b>	-	-	-	-	-	-	(16,000)	-	-	-	-	-
<b>CASH FLOW BEFORE FINANCING</b>	(10,504)	(2,390)	5,409	10,073	13,395	(2,970)	(101)	26,796	30,546	42,807	58,903	64,200
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>												
Borrowing of long-term debt	-	-	-	-	-	-	-	-	-	-	-	-
Repayment of long-term debt	-	-	-	-	-	-	-	-	-	-	-	-
<b>CASH FLOW BEFORE MEMBERS' CONTRIBUTIONS</b>	(10,504)	(2,390)	5,409	10,073	13,395	(2,970)	(101)	26,796	30,546	42,807	58,903	64,200
Members' Capital Contributions	-	-	-	-	-	-	-	-	-	-	-	-
Members' Interest Repurchased	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL CASH FLOWS FROM FINANCING ACTIVITIES</b>	-	-	-	-	-	-	-	-	-	-	-	-
<b>NET CASH FLOWS</b>	(10,504)	(2,390)	5,409	10,073	13,395	(2,970)	(101)	26,796	30,546	42,807	58,903	64,200
<b>CASH, BEGINNING OF PERIOD</b>	216,405	205,901	203,511	208,919	218,992	232,387	229,417	229,316	256,112	286,658	329,465	388,368
<b>CASH, END OF PERIOD</b>	205,901	203,511	208,919	218,992	232,387	229,417	229,316	256,112	286,658	329,465	388,368	452,568

## Pro Forma Balance Sheet (Years 1-5, Annually)

### Superior Medical Instruments

Projected Balance Sheets (\$s)	Year 1	Year 2	Year 3	Year 4	Year 5
<b>ASSETS</b>					
<b>Current Assets</b>					
Cash	216,405	452,568	1,491,994	3,620,660	7,723,656
Accounts Receivable	110,878	395,014	820,135	1,368,601	1,812,900
Inventory	69,835	204,071	349,203	560,522	675,810
Other	-	-	-	-	-
<b>Total Current Assets</b>	<b>397,118</b>	<b>1,051,653</b>	<b>2,661,331</b>	<b>5,549,783</b>	<b>10,212,366</b>
<b>Property and Equipment</b>					
(less accumulated depreciation)	62,000	78,000	116,000	197,000	275,000
<b>Net Property and Equipment</b>	<b>(9,900)</b>	<b>(22,033)</b>	<b>(41,638)</b>	<b>(70,602)</b>	<b>(116,117)</b>
<b>Other Assets</b>					
	-	-	-	-	-
<b>TOTAL ASSETS</b>	<b>449,218</b>	<b>1,107,620</b>	<b>2,735,693</b>	<b>5,676,181</b>	<b>10,371,249</b>
<b>LIABILITIES AND MEMBERS' CAPITAL</b>					
<b>Liabilities</b>					
<b>Current Liabilities</b>					
Accounts Payable	23,681	68,519	116,724	187,343	225,667
Other Current Payables	-	-	-	-	-
Revolving Line of Credit	-	-	-	-	-
Current Portion of L-T Debt	-	-	-	-	-
<b>Total Current Liabilities</b>	<b>23,681</b>	<b>68,519</b>	<b>116,724</b>	<b>187,343</b>	<b>225,667</b>
<b>Long-Term Debt</b>					
	-	-	-	-	-
<b>Total Liabilities</b>	<b>23,681</b>	<b>68,519</b>	<b>116,724</b>	<b>187,343</b>	<b>225,667</b>
<b>Members' Capital</b>					
Members' Paid-In Capital	750,000	750,000	750,000	750,000	750,000
Undistributed Members' Earnings	(324,463)	289,101	1,868,969	4,738,838	9,395,582
Less: Members' Interest Repurchased	-	-	-	-	-
<b>Total Members' Capital</b>	<b>425,537</b>	<b>1,039,101</b>	<b>2,618,969</b>	<b>5,488,838</b>	<b>10,145,582</b>
<b>TOTAL LIABILITIES AND MEMBERS' CAPITAL</b>	<b>449,218</b>	<b>1,107,620</b>	<b>2,735,693</b>	<b>5,676,181</b>	<b>10,371,249</b>

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## Management Resumes

Jason R Berg

Jberg1@email.arizona.edu

**Current Address:**

1409 E. Blacklidge Dr.  
Tucson, AZ 85719  
(480)510-4479

**Permanent Address:**

1150 N. Fiji Way  
Gilbert, AZ 85234  
(480)545-7698

**Education:**

**The University of Arizona**  
*Eller College of Management*  
Majors: Business Management;  
Entrepreneurship  
GPA: 3.8  
Dean's List with Distinction

**Expected Graduation:**  
May 2009

**Experience:**

*Summer 2004-2008*

**Phoenix, AZ**

**CSK Auto Internship**

- Working directly under merchandise manager, learned fundamentals of product selection, cost comparison, planogram development and marketing strategy implementation.
- Analyzed sales data on specific items to assist merchandise manager in decision making.
- Learned negotiation skills in dealing with vendors and the implementation of new products.
- Tracked the impact of promotions on unit sales to learn what creates largest gross margin and thus is most profitable.
- Developed and implemented complete oil filter program exceeding \$3.5 million in sales while enhancing category margin.
- Responsible for planogram mix programs and new item additions for retail stores.

**Leadership Activities:**

- Delta Sigma Pi Professional Business Fraternity
- Elected by peers to Exploratory Committee Chair Fall 2007
- SCNO – Student Consulting for Nob-profit Organizations Spring 2008
- Leader of 5 person team in developing and presenting a business plan
- Tucson Men's League Soccer 2006

**Skills:**

- Microsoft Office Specialist, having demonstrated proficiencies in Excel 2003

Strong computers skills including Microsoft Office programs such as Word, Power Point, and Access

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## Kelly Michael Olson

kmols@email.arizona.edu  
2189 S. Saint Suzanne Drive, Tucson, AZ 85713  
(480) 202-4243

### Education

**University of Arizona Honors College** **Tucson, AZ**  
**Eller College of Management**  
***Bachelor of Science in Business Administration with Honors*** **Expected: 05/09**  
Majors: Finance, Business Economics, and Entrepreneurship (4.0 GPA)  
Minor: Spanish Language (3.5 GPA)  
Cumulative GPA: 3.88, Dean's List

### Relevant Coursework

Investments; Applied Investment Management; Risk Management and Derivatives; Econometrics; Macroeconomics;  
Intermediate Financial Accounting; Microeconomics; Entrepreneurial Finance; Quantitative Methods for Economic Strategy

### Experience

**Intel Corporation** **Chandler, AZ**  
Intel designs and manufactures microcomputer components for desktop, laptop, and server systems.  
They are the world's largest semiconductor company and are a member of the Fortune Global 500.

***Operations Finance Analyst*** **05/08 - 08/08**

- Performed historical analysis to determine volatility and expected returns in carbon exchange markets
- Utilized historical analysis in Monte Carlo simulations to forecast the potential costs of carbon reduction legislation
- Refined TCO model to include the costs of electrical consumption resulting in more efficient tool purchasing decisions
- Performed benchmarking of carbon emissions and "green" initiatives in order to better understand competitive position

**Thrivent Financial and Investment Management** **Tucson, AZ**  
Thrivent Financial is a Fortune 500 financial services organization that specializes in life insurance, annuities, mutual funds, disability income insurance, bank products, and other financial instruments.

***Financial Intern*** **05/06 - 09/06**

- Consulted with clients in order to develop personalized investment and insurance strategies
- Used multivariable Excel models to perform sensitivity analysis, ensuring that retirements would be properly funded
- Performed valuations to determine the minimum contributions required to successfully fund investment goals
- Actively prospected clients resulting in increased revenues and increased assets under management
- Graphically designed marketing materials to be distributed to top clients

### Honors and Awards

- McCord Scholarship Finalist, 2007
- Eller Set Aside Grant Recipient, 2006
- 1st Place, Eller Business Math Case Competition, 2006
- Wildcat Excellence Scholarship, 2005-2008 (Full Tuition + Stipend)
- National Merit Commended Scholar, 2005 (1490 SAT)

### Other Data

- Certified Microsoft Office Excel Specialist
- Regression and data analysis experience in SAS and Stata statistical packages
- Advanced skills with Microsoft Office and Adobe Creative Suite
- Intermediate Spanish skills: Able to read, write, and converse
- Licensed Life and Health Producer
- Interests: Technology (Computers, Internet, Digital Audio/Video), Philosophy, Outdoor Activities

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# Paul Swift

4101 E Holmes · Tucson, AZ 85711

Phone: (520) 481-1730 Email: PSwift@email.arizona.edu

## Work Experience

### **SRC/SEMATECH Engr. Research Center for Environmentally Benign Semiconductor Manufacturing**

Research assistant · Chem. Engr. Department · The University of Arizona · Tucson, AZ 85721 · Fall 2007 – Present

- Manufacturing Electro Chemical Residue Sensors (ECRS) for in-situ monitoring of contaminant levels. Studies will support development of higher efficiency cleaning cycles in high volume integrated circuit fabrication centers
- Assisting graduate research with semiconductor manufacturing studies; Characterization of absorption and desorption profiles for maximization of purge gas distribution systems efficiency

### **Bio Skills Center of Tucson**

Manager, Orthopedic Surgical Lab Technician · Tucson, AZ 85712 · Fall 2005 – Present

- Help in the oversight of the surgical lab technicians in their work related responsibilities to ensure a problem free environment
- Provide a safe, educational environment for the continued learning of Orthopedic surgeons while maintaining a business cautious status quo for the company

### **NASA Glenn Research Center and Plumbrook Station Research Center**

Research intern · Safety, Health, and Environmental Division · Cleveland, OH 44142 · Summer 2008

- Developed interim procedural guidelines, materials, and final report for Center operations regarding exposure assessment of nanomaterials
- Daily responsibilities included supervising high school interns (2), calibrating sampling equipment, field surveys, preparing samples, recording data, and developing a reports based on lab assessments

### **NASA Ames Research Center**

Research intern · BioVIS Technology Center · Moffett Field, CA 94035 · Summer 2007

- Developed, conducted, and reported on personal interest research project exploring the effects of hypergravity environment on the skeletal structure and bone cells of the oyster toad fish

## Honors

- 2008 Nominated and Accepted as NASA Student Ambassador
- 2008 Accepted and completing McGuire Entrepreneurship Program · Ranked top 5 nationally
- 2008 Member of University of Arizona chapter of American Institute of Chemical Engineers
- 2008 National Champion, 33<sup>rd</sup> National Collegiate Taekwondo Association tournament · 2<sup>nd</sup> place 32<sup>nd</sup> NCTA
- 2007,'08 Twice recipient of NASA MUST (Motivating Undergraduates in Science and Technology) Scholarship
- 2006 Poster presenter at regional American Chemical Society (ACS) meeting · Topic: "Solid State <sup>2</sup>H NMR Spectroscopy for the Undergraduate Physical Chemistry Laboratory"
- 2007 Co-founder and treasurer for Anatomy Enthusiast Society (AES), University sponsored club

## Education

Graduation: Spring 2010 · The University of Arizona · Tucson, AZ 85721

Majors: Chemical Engineering and Business Entrepreneurship

Units Completed: 121      Enrolled: 13 units

## Skills

- Operating Systems: MS Windows, Macintosh, Unix
- Software Programs: Excel, ProgeCAD LT 2006, MatLab, COMSOL Multiphysics
- Programming Languages: C, Visual Basic, Java
- Experiment Instrumentation: APIMS (Atmospheric Pressure Ionization Mass Spectrometer), CRDS (Cavity Ring-Down Spectrometer), FTIR (Fourier Transform Infrared Spectrometer), NMR (Nuclear Magnetic Resonance Spectroscopy), ABM Mask Aligner, RIE (Reactive Ion Etcher), SEM (Scanning electron Microscopy)

## Improving Progress Monitoring and Patient Care in Physical Therapy with Technology

### Introduction

The purpose of this paper is to discover new and more efficient ways to improve patient care and rehabilitation in the physical therapy industry. If you find it difficult to objectively monitor your patients' progress, a new class of technology may be the solution you're looking for. Please complete the following three questions to the fullest of your ability before you continue with this paper.

### Pre-Questions

Medical professionals are required to maintain a high level of objectivity in order to provide the most effective patient care.

A. What are some of the problems that you face in obtaining objective measurements for the assessment of your patients' disability and progress?

- 1) Time to carry out the measurements.
- 2) Methods to collect the objective data that is also functional + reliable, valid.
- 3) Correlating a pain value to the onset of their impairment. That is, at what point in the range of motion, or phase of walking, etc did the deviation occur and did this correlate with pain?

B. What actions do you currently take to overcome these difficulties?

- 1) Reassess 1x/wk rather than every session.
- 2) Writing out the results of gait analysis (qualitative) and other functional tests vs providing quantitative info in some cases. This has limitations as it is more subjective.

C. What current or novel techniques/technologies can you think of that would improve the assessment of your patients' disability and progress? (i.e. electronic medical records, improved measurement tool, etc.)

1) Hand held devices with tabs menus  
menus in order to "document"  
session treatments.

2) Video motion analysis that is  
obtained with that same hand held  
device. Motion analysis software  
then provides objective evaluation.

### **Background**

For decades physical therapists have used a goniometer to access the range of motion in their patients' joints. While range of motion measurements can vary significantly from measurement to measurement as a result of changing motivation and pain levels, the use of a goniometer increases the variation in the measurements as a result of its poor inter and intra rater reliability. Over the past two years, inventor Paul Howe and the Arizona Arthritis Center have been developing a new tool that will be used to access range of motion. This product idea originated from a discussion on the need for improved measurement techniques at the 2007 Southwest Rheumatology Conference.

### **Product Information**

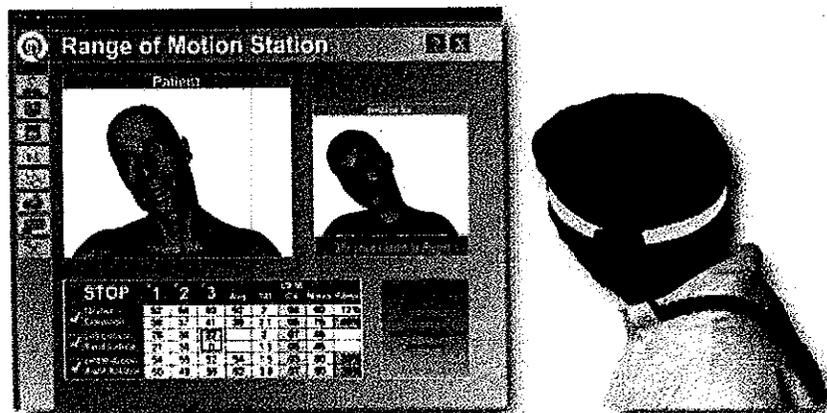
The resulting measurement tool that was created is an electronic system that is composed of two sensors (which are placed on the patients' body), one transmitter, and one central processing unit. In this technology, the transmitter emits an electromagnetic field which is received by the sensors. These sensors interpret the electromagnetic field and continually relay their position and orientation (angle) measurements back to the central processing unit. By using a two sensor arrangement, it is not necessary that the patient remain stationary as one of the sensors can be used as a reference point. Once the measurement process is complete, the central processing unit computes and displays a measurement corresponding to the patients' range of motion. The technology that is being employed is able to provide measurements that are accurate to within one tenth of a degree and one quarter of an inch. As a result of this new and innovative technology, the product being created has numerous potential applications.

### **Product Capabilities**

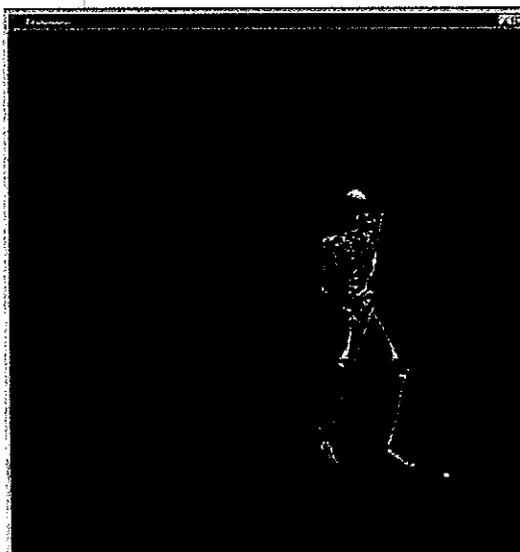
- Position Sensing (relays 3-dimensional X,Y, and Z coordinates to the central processing unit)
- Orientation Sensing (relays Yaw, Pitch, and Roll angles to the CPU)
- Velocity and Acceleration Measurements

### Potential Applications

- Fast, Easy, and Accurate Range of Motion Measurements
- 3D Range of Motion Imagery
- Range of Motion Measurement and Imagery Database
- Development of Recovery Rating or Disability Index
- Diagnosis for Chronic Degenerative Diseases



**Range of Motion Measurement**



**3D Motion Tracking Imagery**

## Post-Questions

- A. Would this product improve or eliminate any of the problems you listed in **Question A** of the **Pre-Questions** section of the paper? If so, which ones?

It has the potential to provide functional + objective information. Time demands currently appear to be a limiting factor.

- B. Could this product's technology be utilized for any additional applications in your clinical work? (including the novel techniques you listed in **Question C** of the **Pre-Questions** section of the paper?) If yes, please explain.

It would have to be smaller in size in order to carry out the dual function of electronic medical records and motion analysis.

- C. Without consideration of cost, would this product provide value to your daily clinical work? If so, what application would provide the most value?

1. As it is now, I feel that it would not secondary to the time associated with setting it up.

2. It has the most potential to provide objective information with perhaps, improved reliability.

## Additional Ideas and Comments

Do you have any additional ideas for how this technology could be applied to the medical industry? These ideas can be within or outside of your profession and may be as rudimentary or elaborate as you would like. Also, please feel free to provide any additional comments that you may have.

I have experienced working with a software system called SportsCad. It provides info on velocity, range of motion, etc. It would be interesting to "sync" those abilities with the correct device in question. That is, what is the potential to video an activity then "ask" <sup>(to)</sup> the device,

to provide an evaluation of a segment's velocity, range of motion, etc.

# Entrepreneurial Profile: Innovative Sports Training

Arvin Ahmadiéh

May 6, 2009

Superior Medical Instruments (SMI) is a manufacturer of medical devices and has created an electronic medical device that measures range of motion with great ease and accuracy. The product is targeted to over 55,000 physical therapists that work in outpatient clinics and hospitals. The venture is lead by me and three other group members. SMI's management team has referred to many benchmark companies during the development of the venture, including Innovative Sports Training Inc. This company manufactures motion analysis devices that target numerous markets including sports medicine, academic research, physical therapy, and other markets.

Innovative Sports Training (IST) was formed in 1993 and initially concentrated on the athletic training and sports performance. The company was then incorporated less than two years after its launch and began to expand its product line. The company expanded by incorporating multiple technologies into their products as well as entering markets other than sports performance, including research and clinical markets ([innsport.com](http://innsport.com), Feb. 28, 2009).

### **Reason for Selecting IST**

Innovative Sports Training offers products very similar to the device developed by Superior Medical Instruments. SMI will manufacture only one product initially, a device that uses electro-magnetic technology to make measurements. IST sells products that are capable of using electro-magnetic technology as well as inclinometers, optic tracking, force plates, and other technologies.

In addition to offering similar products, there are additional similarities between IST and SMI. When IST launched in 1993, their products were targeted to only the sports performance market. Similarly, when SMI launches, our product will be initially targeted towards the physical therapy market only and later expand by offering similar products for other markets including rheumatology, neurology, sports medicine, and academic research. In comparison, IST expanded after a couple years of existence into academic research and clinical markets. However, they continue to concentrate their research and development in sports performance.

Although the two companies are very similar and can be considered direct competitors, there are also major differences between the products that the two companies sell. Firstly, SMI's product will be developed so that its functions tie directly to physical therapy and the measurements made in a physical therapy clinic. Therefore, SMI's product cannot be used in unrelated markets such as sports performance because of the software's structure. The functions of sports performance are specific to particular sports such as golf, baseball, and tennis. In contrast, physical therapy functions apply to general functionality of joints.

IST bundles their products differently from SMI. Rather than providing separate products for different markets, they have one main product and require that a customer purchase additional software in order for it to be used for a specific function. For example, if a physical therapist were interested in purchasing IST's product, they would purchase the main unit and then buy an additional "Physical Therapy Suite" that can be installed.

With this major difference in the two companies, the products are priced in different price points. SMI will sell their product for approximately \$6,000, whereas the “Physical Therapy Suite” by IST is \$7,500 alone. In order for a physical therapist to use all of IST’s functions, they would spend over \$15,000 on a single product.

### **Research Strategy**

There is very little information regarding Innovative Sports Training since it is a small, privately owned company. The company is not required to make documents available to the public since it is privately held. Also, since it is a relatively small company, there is limited information written about it as well. However, I was capable of conducting research regarding the company.

The first step that I took was contacting the company directly. IST has a well structured website, [innsport.com](http://innsport.com), which contains significant information about their products, company history, and mission. Since the company is located in Chicago, I was not able to visit their location in order to conduct interviews in person; instead, I contacted representatives of the company via telephone and email. All of the information I received from the representatives is trustworthy since it is directly from the company.

In addition to contacting the company directly, I also conducted secondary research by searching the company in article databases. I was able to find a published interview of the President of IST, Mr. Lee Johnson (The Inside Track). The information I obtained from this interview is reliable since the interview was transcribed directly from one of the founders of the company. Lastly, I found

information regarding IST in article from well known newspapers and journals.

The information from these articles is also trustworthy since they come from established journals and newspapers.

### **IST's Opportunities**

Innovative Sports Training has acted upon numerous opportunities throughout its existence since 1993. The original opportunity they enacted upon was the expanding sports market. Sports continuously become more competitive and are played by more athletic people every decade. IST entered the athletic performance market due to its expansion and competitiveness. There was also a lack of modern technologies being used in the market. IST was one of the first companies to enter the market with their type of products.

More recently, IST has entered clinical markets including physical therapy. There is a lack of accuracy in assessments with old technologies and IST capitalized on this opportunity. IST was also one of the first companies to introduce these technologies to this market and is attempting to make it a standard equipment for the market.

### **Business Model**

Innovative Sports Training is composed of more than just manufacturing and selling their products. The company has employees that range from electrical engineers to physical therapists. The electrical and software engineers develop the products based upon the input given by the company's physical therapists and Ph.D's in biomedical instrumentation ([innsports.com](http://innsports.com)). All of these

individuals are key in developing the products so that they function according to the target markets' desires.

Once software is developed, it is made available to customers with the ability to package it with any desired hardware that IST offers. For example, the "Physical Therapy Suite" software can be purchased with hardware using electromagnetic technology, optic tracking, or any other technology the company offers. This gives the customer the option to package the product any way they desire depending on their needs. So a customer could purchase the product with as few as one sensor or as many as twenty-five sensors, depending on their desires. This is an innovative method of selling their products; rather than packaging their products in limited forms, IST gives their customers the liberty to order products that meet their specific needs. Each customer order is custom made rather than entirely pre-packaged, making IST distinguishable from most competitors in the market.

The hardware that is used in IST's products is not manufactured in house. Rather, they are purchased from suppliers including Polhemus Inc. and Ascension Corp. These suppliers manufacture the sensors and computers used by IST. It is most cost-effective for IST to purchase their products' components from suppliers rather than manufacturing them due to the wide range of technologies used in their products. Similarly, Superior Medical Instruments will purchase hardware components from suppliers rather than manufacturing them internally.

Innovative Sports Training conducts sales in-house rather than outsourcing to other companies. Their sales representatives are available via telephone, online, and in person. Their products are made available to four main markets: research, clinical, sports performance, and injury prevention. Software is made specifically for each of the four markets. For example, the clinical software includes gate analysis, balance assessment, and other application specific for clinical assessments.

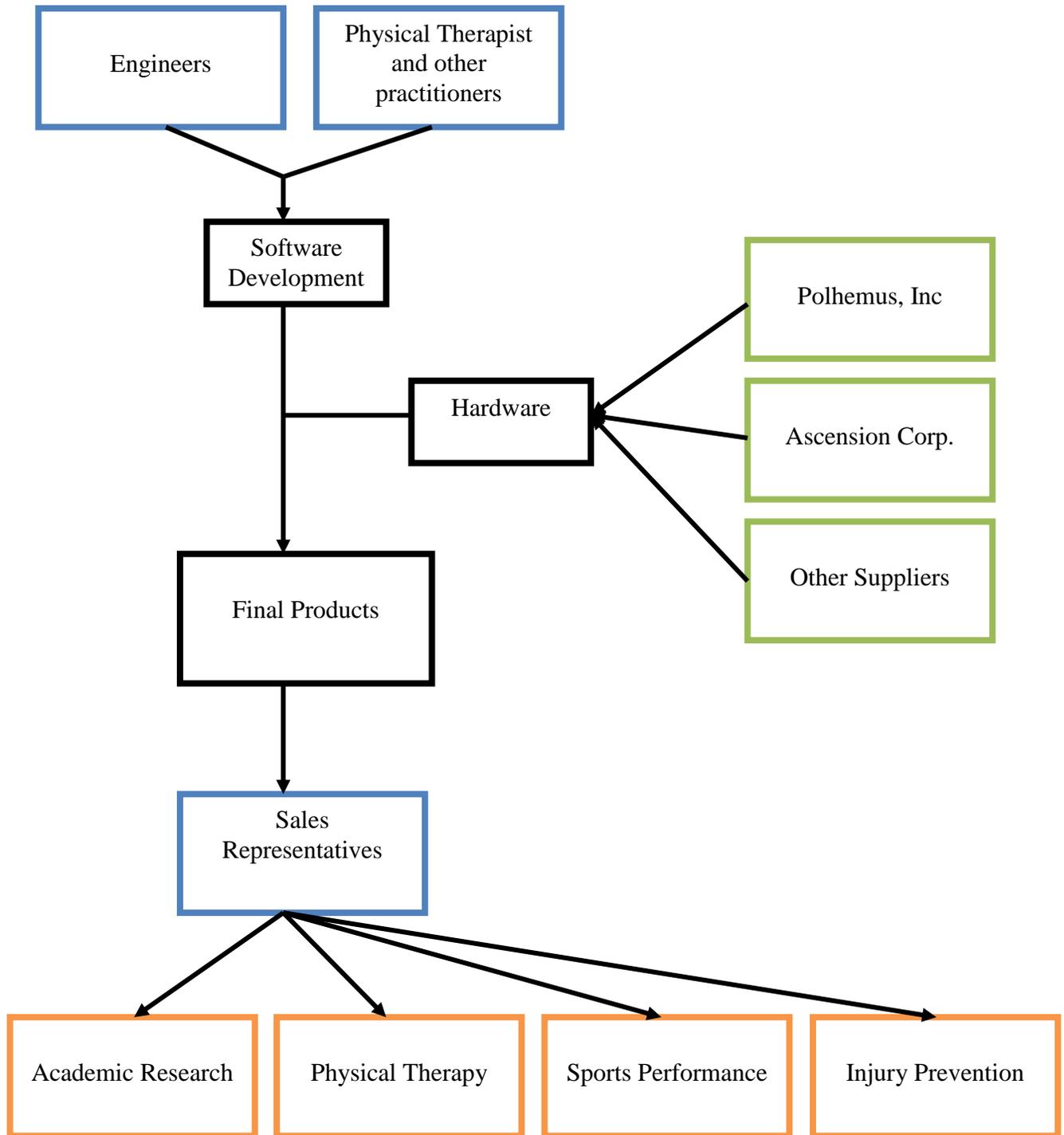
The chart on the following page represents the business model followed at Innovative Sports Training.

**Legend**

Blue: Innovative Sports Training Employees

Green: Suppliers

Orange: Customers (markets)



## **Core Competencies**

The company's primary core competencies are experience and knowledge of the target markets. IST hires electrical and software engineers only if they have advanced bio-medical degrees (Success Story Profile..., 2002). These engineers partner with clinicians and researchers to develop products that can be utilized in every possible assessment conducted by the target markets. For example, the sports performance software is capable of assessing all necessary components of an athlete's performance, as desired by athletic trainers.

Innovative Sports Training originally had the greatest competency in research and sports performance, but has recently added physical therapy and injury prevention to that list. Their partnerships with clinicians in all of these fields allow IST to produce products that satisfy their customers' needs.

## **Market Position**

Since IST sells products across multiple markets, the company has many competitors, most of which fit within a specific market. For example, TyQ Corporation is a competitor because it sells a product similar to IST's product that uses inclinometers only in the clinical market. In the sports performance market, IST has many competitors including P3ProSwing, which manufactures a product that analyzes golf swings only. Overall, IST has the most comprehensive line of products in comparison to its competitors. Most of its competitors offer products that are limited to only one market and have only one main function.

Innovative Sports Training has positioned itself as manufacturer of a high price and high quality product. In comparison to some of its competitors, IST's

business philosophy is to “be known first for the quality of product and level of service rather than the size” of the company (innsports.com). For this reason, they maintain superior quality over most of their competitors.

Changes in the market place have caused the company to make changes to their products. Since their original products were created in 1993, there have been modifications in their products, especially in software. The number of competitors has greatly increased since IST’s launch, and the company has therefore responded by adding features to their products in order to stand out in the competitive market. However, since intellectual property is limited to the copyrights on software, IST is limited in its actions to prevent other companies from entering the market.

### **IST’s Culture**

Innovative Sports Training values quality over quantity. Their goal is to be known for the quality of their products and level of service rather than the size of the company (innsport.com). This is apparent in the vast functions their products are capable of performing, much greater than the capabilities of any of their competitors. Also, although the company has operated for over fifteen years, IST makes less than one million dollars in revenue each year (Company Information for..., 2009).

The company builds relationships with their customers and attempts to keep these relationships. The company spends more resources in keeping existing clients over attracting new customers. This is seen in their limited marketing as well as the relationships they have kept over many years. For

example, many of IST's customers are academic institutions, and they have been selling their products to and servicing the University of Southern California, the University of Michigan, the Mayo Clinic, and many other institutions for over ten years.

The company's culture is in line with IST's goals. The company is privately held and employs fewer than fifteen individuals. This environment is small in comparison to other companies in the same industry and is the appropriate setting for a company that values quality over the size of its operations.

### **Leader of the Business**

The driving force in Innovative Sports Training is Lee E. Johnson, the President of the company (Innovative Sports Training, Inc. 2005). He founded the company in 1993 and has fulfilled the position as the President during the entire existence of the company. He is responsible for assembling the unit of employees that develop the products. In addition, he partnered with the appropriate companies to supply his company with the necessary hardware for his products.

Johnson has lead IST into entering the various markets that the company has penetrated. Initially, the company manufactured products for the research and sports performance markets only. However, Johnson realized the opportunities available in physical therapy and injury prevention and decided to enter those markets in the mid-2000's (The Inside Track, 2002). He has been entrepreneurial in the sense that he has been able to apply his company's

products to multiple markets. This has been vital for the survival and expansion of Innovative Sports Training.

### **IST's Entrepreneurial Achievement**

The company has been entrepreneurial by applying existing technology into markets that have never been exposed to those markets. Computer systems were very limited in the early 1990's, especially in academic research and sports performance, but Innovative Sports Training was early in introducing technologies into these markets. In 1993, there had been almost no exposure of optic tracking, electro-magnetic technology, and other technologies in these fields. IST therefore developed new applications for these technologies and capitalized on the opportunities that were available in these markets.

The company has also been entrepreneurial by later expanding into other markets that have not been introduced to these technologies. By entering the physical therapy and injury prevention markets, IST was one of the very first company's to apply these technologies to such fields (The Inside Track). Other companies have made an effort to simulate IST, including TyQ Corporation, but have not been as successful.

### **Venture Critique**

Overall, Innovative Sports Training has been successful in sustaining its position in the market over the past sixteen years. However, I believe that the company needs to expand its target markets and line of products. Firstly, IST is primarily concentrated in the academic research market. The company could increase its revenue by expanding to other markets including medical specialties.

The cost of expanding to additional markets would be less than the potential increase in revenue, therefore being a clear move to make.

IST can expand into these markets by making alterations to their software and adjusting the price position of their products. Their market is limited primarily to the academic research market due to the lack of a user-friendly interface in their products. By making adjustments to their software, the company could better penetrate the physical therapy market and addition markets such as orthopedics and rheumatology.

In addition, IST would have to reposition their products' price points. For example, the product intended for physical therapists is priced at over \$15,000. This product has not penetrated the market due to its high price point and lack of user-friendly interface. Overall, IST can become more successful with these changes and expand to a larger line of production.

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