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Project - Smart Sole

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**Portland State University
Department of Engineering and
Technology Management**

**ETM 555 - Technology Marketing
Winter 2020**

Group 3

Project - Smart Sole

Group Members

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Professor - Vera Sell

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Executive Summary

Introduction

Smart Soles aims to further expand the realm of smart wearable technology with its smart insoles focused on biometric tracking and customized insole comfort. This product provides Dr. Scholl's with a means to enter and capture much of the early market for smart insoles. Smart Soles is continuing Dr. Scholl's history of foot products while adding technology to disrupt the stagnant and primitive insoles market.

Company objective: Dr. Scholl's main objective with Smart Soles is to enter and capture some of the smart wearables market by adding smart, biometric tracking insoles to its portfolio. Smart Soles will utilize Dr. Scholl's insole technology and distribution chains to launch the product. The "smart" technology comes from the Smart Soles intellectual property (IP) which encompasses sensors calibrated to measure human biometrics, and automatic adjusting technology utilizing artificial intelligence (AI) to inflate and deflate small air pockets in the insoles to ensure customized comfort. The insoles and the data they collect can be accessed from an app that Dr. Scholl's will make available on any smartphone, giving users the power to track their biometrics and biomechanical data. In addition to providing users constant customized comfort with the auto-adjusting insoles, tracking biometrics will encourage and empower an active and health conscious lifestyle. In the long term, this product will bring Dr. Scholl's portfolio back into relevance from a stagnating market and adhere to the lasting history of providing quality foot products to customers around the world.

We are asking investors for a \$10,000,000 investment to fund the research and development costs of the technology, and for initial promotions and advertisements. We believe it is feasible for us to sell up to 1 million pairs of these insoles in a 5 year period, and based on our estimates we forecast a positive NPV of \$15 million from this investment at the end of the 5 year period.

Marketing Objective

Dr. Scholl's will expand to make room and emphasize the new product. This will be accomplished by building upon Dr. Scholl's current marketing plans and objectives to maximize visibility of the new product and highlight its capabilities. Smart Soles will achieve this by: pinpointing and focusing its efforts on the early adopter market, capitalizing on its distribution chain and growing it to key market segments, and utilizing social media and inbound/outbound marketing to generate more leads into the marketing pipeline.

Business Definition

Smart Soles provides consumers with smart insoles that conform and learn about their feet and stride, and automatically adjust to the users feet to create constant comfort. With the emergence of smart wearable technology, biometric tracking is on the rise and Dr. Scholl's is adapting to the changing times.

Business Overview

Background

Dr. Scholl's was in fact a real doctor, Dr. William Mathias Scholl was born in 1882 in Indiana. He was the grandson of a cobbler and farmer whose fascination with feet and shoes expanded into foot care. With products ranging from insoles to wart removers, Dr. Scholl's as a company has stood the test of time. Today, Dr. Scholl's is still a footwear and foot care company. The next big step to maintain and advance Dr. Scholl's market position is implementing technology to its portfolio.

The Smart Soles startup was purchased two years ago by Dr. Scholl's. From this purchase, Dr. Scholl's acquired all IP and merged all employees into Dr. Scholl's company. This strategic move by Dr. Scholl's was to find a means to break into the smart wearables market. Dr. Scholl's currently does not have any products that track biometrics or provide feedback and data on a smartphone app. To create this new market, Dr. Scholl's will build a work division to focus on the engineering and launching the product. This new division will consist of engineering to continue development of the product, computer scientists to develop the in-house Smart Soles app, and its own marketing team focused on the smart insoles. All of these teams will interface with existing departments in the company including manufacturing and distribution.

Smart Soles: Smart Soles was a small startup consisting of approximately 20 employees working on a smart insole. The startup was initially funded by Angel Investors for its first three years until it was bought and merged with Dr. Scholl's two years ago. The startup focused on perfecting each biometric that the insoles would track and refining every algorithm.

Why Smart Insoles?

Society is more active now and working longer hours on their feet. This combined with smartphones allows Dr. Scholl's an opportunity to take advantage of. Smart Soles will take away some of the ambiguity surrounding biometrics. Most biometrics are tracked from the wrist or pocket, but Smart Soles will measure biometrics from the foot.

Operating passively, users will have the luxury to view their biometrics on their smartphone whenever and wherever they want.

The insoles will adhere to the same quality and principles as other Dr. Scholl's insoles. They will be slim, durable, and easy to clean. The size of the insoles will come in shoe sizes and have an internal wiring tolerance allowing for the insoles to be trimmed down a little to fit the users shoes and feet. The insoles will contain thousands of little air pockets that will automatically inflate and deflate using AI technology based on the user's foot pressure as they walk, creating an insole that constantly conforms to their foot.

The technology used to capture the users biometrics is a wide range of sensors, tuned to track and interpret the users: foot strike, foot pressure, stride balance, number of steps, and time spent standing and sitting. Every person's walking and running stride is unique, and the Smart Soles will allow users to learn about their individual patterns and traits. The insoles are equipped with heavy duty, long-lasting batteries that can last up to three months on a single charge, giving users peace of mind when using Smart Soles. The insoles are wirelessly charged, making charging quick and easy. The decision to fully enclose the insoles hardware and allowing for wireless charging makes Smart Soles completely waterproof.

Advantages

- **Passive Monitoring:** Users have the choice to track their biometrics or only utilize the auto-adjusting insoles.
- **Durability:** The Smart Soles fully enclosed form makes the product very durable and completely waterproof. Users will not have to worry about getting their insoles wet when walking in the rain or other wet environments.
- **Reachability:** Dr. Scholl's has a very strong distribution chain that allows for high visibility and penetration. Being able to purchase Smart Soles in person will appeal to people and the elderly who do not purchase online.
- **Customizable:** With the AI technology, every insole conforms to the users feet, creating a perfectly customized insole. The Smart Soles app allows users to easily view their biometrics, and quickly and easily change their preference settings.
- **Usage:** The slim profile of the insoles make the Smart Soles easy to slip into most shoes.

Persona



Figure 1: Customer Persona

Cameron is a 34 year old healthcare worker at a local Portland hospital. He works three twelve hour shifts during the week. During these shifts he works mostly on his feet. Going from bed to bed to check on patients is what he spends most of his time on. The amount of patients he sees is based on acuity. This can range from 1- 8 patients depending on his role in the hospital. The beginning of the shift starts with “rounding” and then another round is done to administer any medication. Checking on each of his patients throughout the day and assisting in meeting their medical care needs is what he mostly does. When traveling through the hospital he takes the stairs usually because the elevators can get clogged up with patients and the stairs are faster.

SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none">• Brand Identity and value reputation• Innovative products• Inclusive• Distribution Chain• Use of Artificial Technology	<ul style="list-style-type: none">• Incompatibility• Dependency on other few items• Skepticism
Opportunities	Threats
<ul style="list-style-type: none">• Smart wearable technologies growth• Partnerships with other companies (i.e. Shoe brands, health insurance, etc.)	<ul style="list-style-type: none">• Counterfeit products• Product Cannibalization

Figure 2: SWOT Analysis

Strengths

Brand Identity and value reputation

Dr. Scholl's is a very known and respected company in its industry. It is a brand that comes to peoples' mind when thinking about insoles and foot care. This strength will be necessary to set Smart Soles apart from competitors and combat skepticism.

Innovative Product

The tracking of biometrics is not a new concept, but a product using insoles to track very specific biometrics is not widely distributed or known. Smart Soles will have an advantage of being an early market product, capable of capturing a large market share before competitors can launch their products.

Inclusive

The product is very inclusive, the insoles can fit into most shoes; therefore, anyone that can fit the product into their shoe can use the product. The biometrics will shed light onto a portion of peoples' health that has not been thoroughly tracked before.

Distribution Chain

Dr. Scholl's products are readily available in most grocery stores across the country. Utilizing the current distribution chains set in place will help Smart Soles maximize the market penetration along with adding new distribution methods.

Use of Artificial Intelligence

The use of AI makes the product give users a personalized insole that conforms automatically to their feet. With the data collected from users, Dr. Scholl's could further improve Smart Soles in the future or create new products.

Weaknesses

Incompatibility

The Smart Soles app operates and is controlled through the user's smartphone, tablet, or pc. If the user does not have compatible technology to use Smart Soles such as elderly people with simple cell phones and limited computer access, they might return or not even purchase the product.

Dependent on other items

The need for a smartphone, tablet, or computer is a very short barrier to the product, but it remains a potential weakness. Most potential buyers will have a smartphone and a computer. Additionally, since Smart Soles are very low maintenance, users will only need to check the app when they choose to view their biometrics or update their settings.

Skepticism

In a rapidly changing technology landscape, users may feel that product is too good to be true. This skepticism may lead to consumers holding off on purchasing as they wait for the product to become more mainstream.

Opportunities

Smart Wearable Technology Growth

The growth of smart wearables in society provides Smart Soles the opportunity to capture much of the early market in smart insoles technology. Currently, most biometrics are tracked on the wrist with a smart watch or a smartphone in the pocket or in-hand. Dependent on the success of Smart Soles, Dr. Scholl's could continue their product line with more smart wearables.

Partnerships with Other Companies

The biometrics logged could be utilized by health insurance companies to track the activity of their patients, and in exchange, users could get a discount on their monthly health insurance. The formation of these partnerships between Dr. Scholl's and health insurance companies could lead to further advertisement of Smart Soles throughout the health industry and to patients looking to track their biometrics.

Threats

Counterfeit Products

With the launch of Smart Soles, it will not take much time for counterfeit products to make their way into distribution. These counterfeit products could poorly emulate the Smart Soles technology and falsely have the Dr. Scholl's brand name on them, which would hurt the brand image and reputation.

Product Cannibalism

Since Smart Soles will take away the need to purchase any other insoles with its long product lifespan, Dr. Scholl's might cannibalize the insoles market. This will impact other insole companies as well as Dr. Scholl's existing insole market.

Market Segmentation

Healthcare Professionals is the target market segment. This field includes physicians, nurse, surgeon, midwife, dentist, pharmacist, psychologist, psychiatrist, physiotherapist, podiatrists, and other health professionals. Choosing the healthcare industry is a wise choice to cross the Chasm. Healthcare professionals have the pain point to use the product and have an in-depth understanding of the features. They are the ones who are going to be doing the biometric analysis to give further solutions.

Competitor Analysis

From the market analysis we identified our competitors in the smart insole industry. These are the companies and the products they offer.

1. ReTi Sense [1]
2. Digitsole [2]
3. PODOSmart [3]

ReTi Sense offers a wide range of products suitable for runners/athletes, gait researchers, physiotherapists, etc. There is a wide range of stridalalyzer products with different features and pricing structure. They are

1. Stridalalyzer PERFORMANCE Insoles - This product has 5 pressure sensors and 1 motion sensor. It contains 1 pair of insoles and one year of analytics and cloud storage to track data and monitor the performance of an athlete. It costs \$ 169.



Figure 3:Stridalalyzer PERFORMANCE Insoles

2. Stridalyzer INSIGHT Sensor Insoles - This product has 10 pressure sensors and 1 motion sensor. It contains 1 pair of insoles and 1 year of analytics and cloud storage for physio research. The product costs \$449.



Figure 4: Stridalyzer INSIGHT Sensor Insoles

3. Stridalyzer PRISM Sensor Insoles - This product has 100 pressure sensors and 2 motion sensors. It has 1 pair of insoles and 1 year of analytics and cloud storage for physio research. The product costs \$899.



Figure 5: Stridalyzer PRISM Sensor Insoles

4. Stridalyzer INSIGHT Development Kit - This contains 2 pairs of Stridalyzer INSIGHT insoles with API (Application Program Interface) kit, 1 year of Dev support + cloud and analytics storage for physio research. This kit costs \$999.

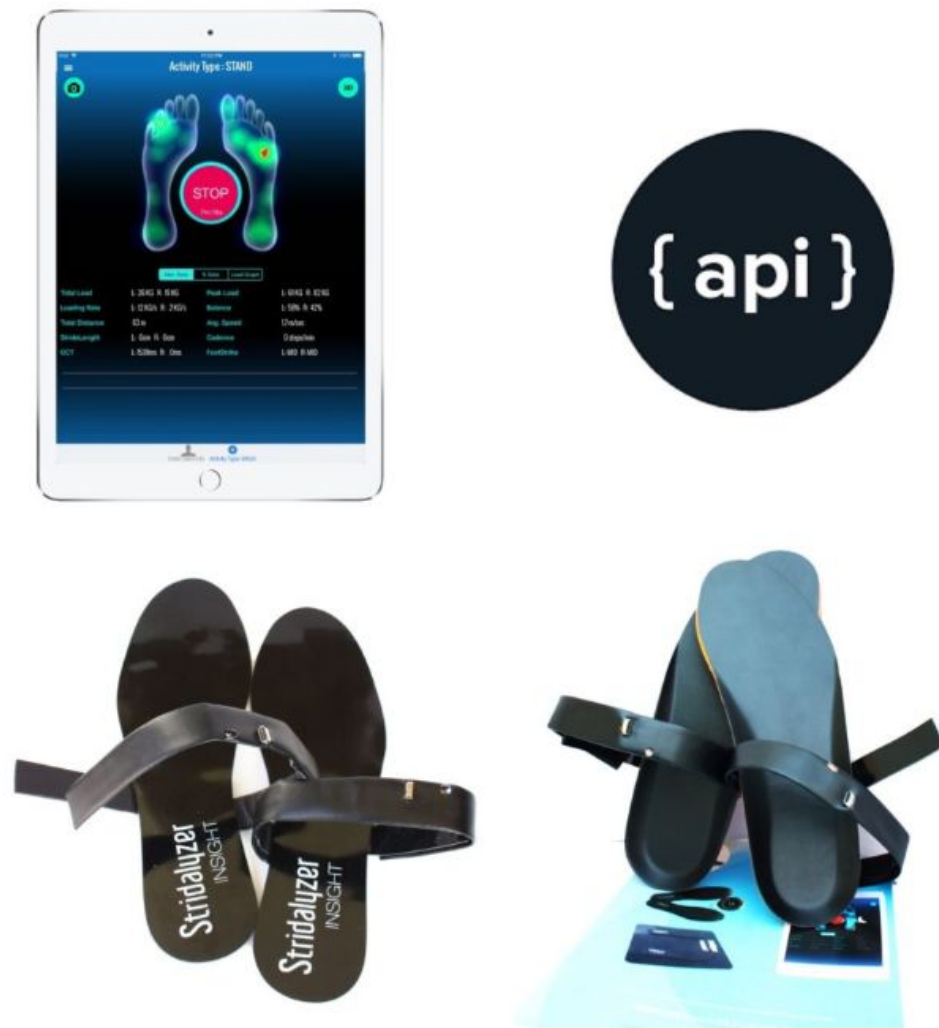


Figure 6: Stridalzyer INSIGHT Development Kit

5. Stridalzyer FORCEPLATE Sensor Board - This product comes with 250 pressure sensors, 1 motion sensor, 1 set pressure measuring boards, and 1 year of analytics and cloud storage for physio research. This product costs \$999.



Figure 7: Stridalyzer FORCEPLATE Sensor Board

6. Stridalyzer PRISM Development Kit - Stridalyzer PRISM has 100 pressure sensors distributed as a matrix array for physio research. The kit includes 2 pairs of insoles, API access and raw data access, 1 year analytics and cloud storage and Dev support. The Stridalyzer PRISM Development Kit costs \$2299.



Figure 8: Stridalyzer PRISM Development Kit

7. Stridalyzer Pod 3D Motion Sensor - This is an additional product meant for physiotherapy and research applications. It has a 9 axis motion sensor which provides real time 3D motion. This comes with 1 year of analytics and cloud storage. The Stridalyzer Pod 3D Motion Sensor costs \$ 99.

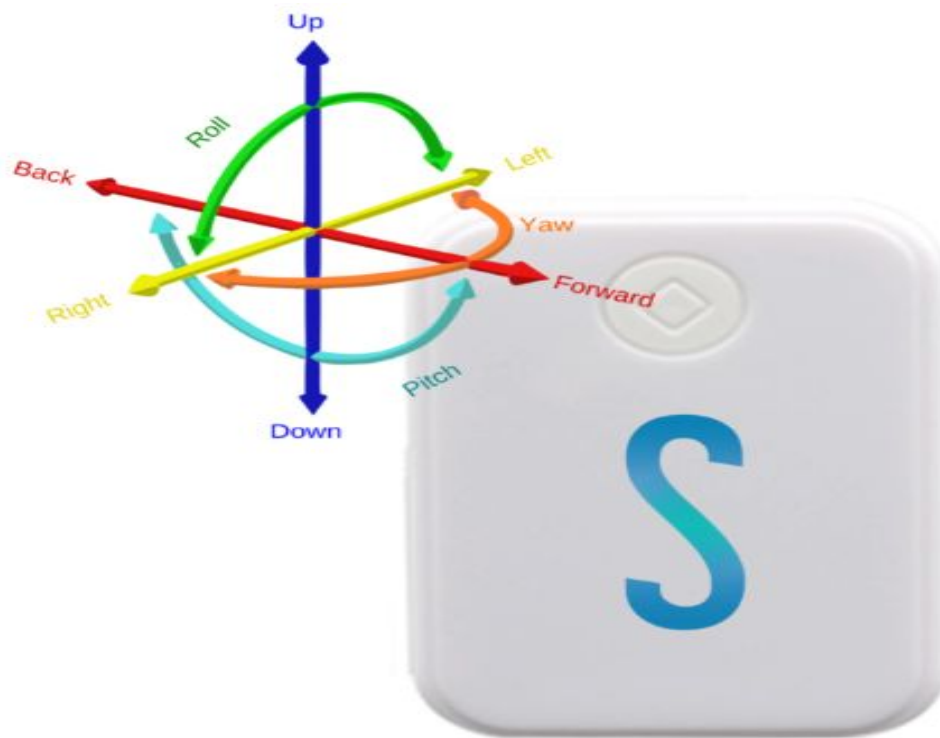


Figure 9: Stridalyzer Pod 3D Motion Sensor

PODOSmart smart insole comes with motion analysis software which uses Artificial Intelligence algorithms. The insoles help healthcare professionals detect mobility disorders using motion analysis. The gait analysis is a major update from the treadmill running analysis. This kit comes with 6 pairs of smart insoles. This product costs 2300\$.



Figure 10: PODOSmart smart insole

Digit Sole connected insoles offer the sports profiler for running and cycling which analyzes data from the entire routine to reduce fatigue (injury) and improve performance. The sport profiler costs \$144.



Figure 11: Digit Sole connected insoles

Digit Sole heated insoles have temperature control features for extremely cold weather conditions. The heated insoles will detect the activity and control the temperature accordingly. The cost of the product is \$ 223.



Figure 12:Digit Sole heated insoles

No.	Product Name	Features	Price
1	Stridalyzer PERFORMANCE Insoles	5 pressure sensors, 1 motion sensor, 1 year data analytics and cloud storage. For Athletes.	\$ 169
2	Stridalyzer INSIGHT Sensor Insoles	10 pressure sensors, 1 motion sensor, 1 pair of insoles, 1 year analytics and cloud storage. For physio research.	\$ 449
3	Stridalyzer PRISM Sensor Insoles	100 pressure sensors, 2 motion sensors, 1 pair of insoles, 1 year of analytics and cloud storage. For physio research.	\$ 899
4	Stridalyzer INSIGHT Development Kit	2 pairs of insoles, API (Application Program Interface) kit, 1 year of Dev support + cloud and analytics storage. For physio research.	\$ 999
5	Stridalyzer FORCEPLATE Sensor Board	250 pressure sensors, 1 motion sensor, 1 set pressure measuring boards, and 1 year of analytics and cloud storage. For physio research.	\$ 999
6	Stridalyzer PRISM Development Kit	100 pressure sensors, 2 pairs of insoles, API access and raw data access, 1 year analytics and cloud storage, Dev support. For physio research.	\$ 2299
7	Stridalyzer Pod 3D Motion Sensor	9 axis motion sensor, 1 year of analytics and cloud storage. For physio research	\$ 99
8	PODOSmart	6 pairs of smart insoles, Software with AI algorithm. To detect mobility disorders.	\$ 2300

9	Digit Sole connected insoles - sports profiler	1 pair of insole For Athletes.	\$144
10	Digit Sole heated insoles.	1 pair of insole For extreme weather conditions.	\$ 223

Porter's 5 Forces

Porter's force is used as a strategic tool to draw the marketing plan by analysing the competitor's potential based on their product portfolio and market value.[4]

Bargaining Power of Suppliers

Dr.Scholl's have a transparent supply chain policy designed with the guideline of ethical manufacturing standards and provide high value to the customers. In the manufacturing units to ensure workers rights globally, a comprehensive labor compliance program is implemented based on the principles outlined in the Production Code of Conduct. The company is committed to doing business with suppliers who meet the above standards to promote an ethical environment.[5]

Threats of New Entrants

Dr.Scholl's have strong IP (Intellectual Property) rights protection and 10 million dollars invested in R&D (Research and Development). There can be new startups and other companies who will partner with other companies to imitate a smart insole but it is not likely.

Rivalry Among Existing Competitors

There is a wide difference in the pricing structure and product portfolio of the existing competitors. Smart Sole has very few overlapping characteristics in the product with its competitors. Some of our competitors' products are meant for temperature control and fitness tracking. We do have a strong competitor, ReTi Sense with biometric features but they don't use Artificial Intelligence and they have a high pricing structure compared to Smart Sole.

Bargaining Power of Buyers

Dr.Scholl's proposes the Smart Sole product with its unique technological features, value proposition and product cost. The target market of the other smart insoles available in the market doesn't overlap with that of the smart sole.

Threat of Substitute Products/Services

Dr.Scholl's has a good market share in the insole domain. Introducing an innovative product like Smart Sole which has the AI Artificial Intelligence feature to track the biometric and auto inflate the air pockets has broadened Dr.Scholl's portfolio in the technology domain. Smart Sole has a cutting edge technology and state of the art feature to stand out in the market.



Figure 13: Porter's 5 Forces

Product Positioning

The Smart Sole is compared with its competitors based on the product pricing and features. Smart Sole has advanced features and is initially priced on the higher end when compared to its off the shelf, consumer market competitors. However there are higher priced options available, which are primarily for physicians and podiatrists.

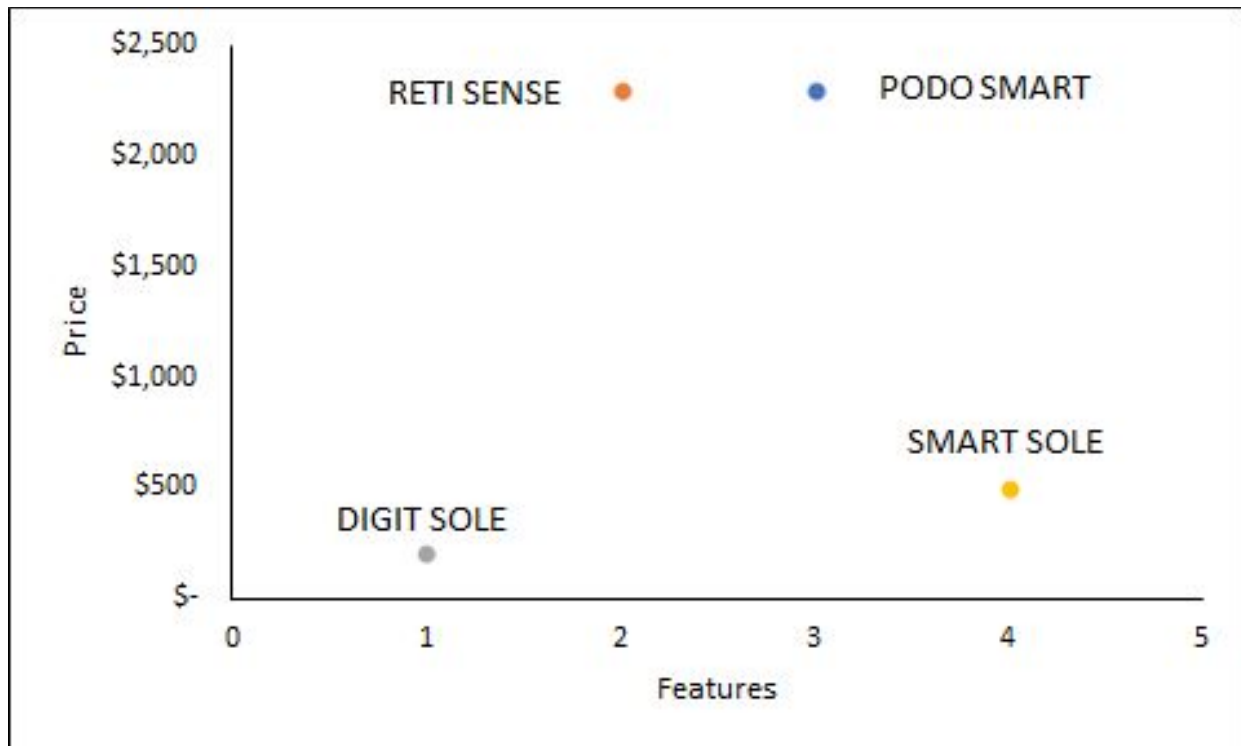


Figure 14: Product Positioning

Market Size and Demand

The shoe insole market, also called the orthotics market, isn't one that is studied in depth often, but data we've acquired from various sources is fairly consistent. According to a study done by the market data aggregator Statista, the global orthotic market was valued at \$2.8 Billion as of 2016, and was projected to grow roughly 6% annually to approximately \$3.7 Billion in 2021. We've also forecasted this growth out to 2025, using the average CAGR for the prior 5 years, and we estimate this market value to be \$4.6 Billion in 2025. This is effectively our current Total Available Market (**TAM**).^[6] Our initial focus is on the domestic, U.S. market, which is the largest market for orthotic insoles with a value of \$1.2 Billion in 2016, and according to the Statista study, is projected to grow at just over 6% annually, to an estimated \$1.6 Billion in 2021. This is effectively our Serviceable Available Market (**SAM**).^[7] We've also forecasted this to 2025 using the same methodology as for the TAM, and we estimate a SAM of roughly \$2.1 Billion in 2025, see **Figure 15**. For the Service Obtainable Market (**SOM**), we took a bottom up approach, and based it on the potential number of customers in our target market segment. With approximately 20 million healthcare professionals in the U.S, we estimated that approximately 50% of those require substantial standing or walking throughout their day, based on occupational data from the Bureau of Labor Statistics ^{[8],[9]}. This makes our target market segment roughly 10 million individuals, and of those we believe we can acquire 10% of these as customers over a 5 year period, in other words, sell 1 million pairs of SmartSoles in 5 years. Based on our pricing analysis that is to follow, we would expect sales of approximately \$180 million in year 5, in addition to current sales of Dr.Scholls, of \$235 million ^[10]. Thus we think our potential SOM would be at least \$415 million by the end of our 5 year plan in 2025. See **Figure 16**.

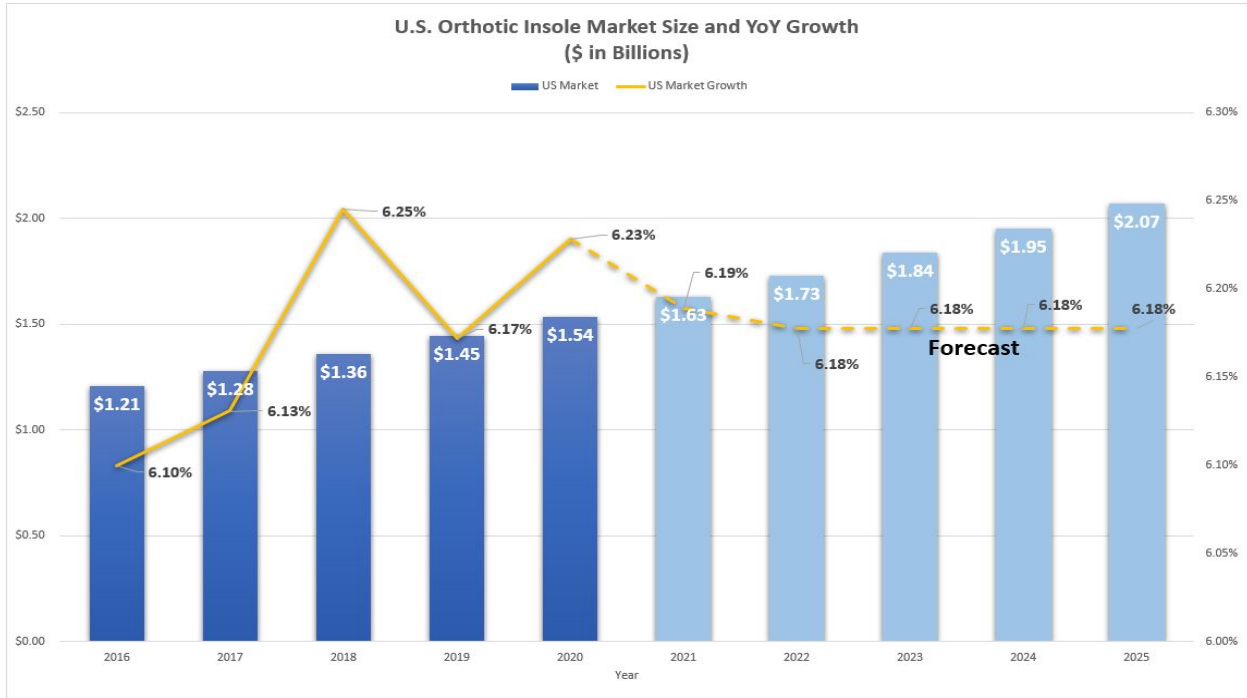


Figure 15: US Orthotic Insole Market Size and Growth

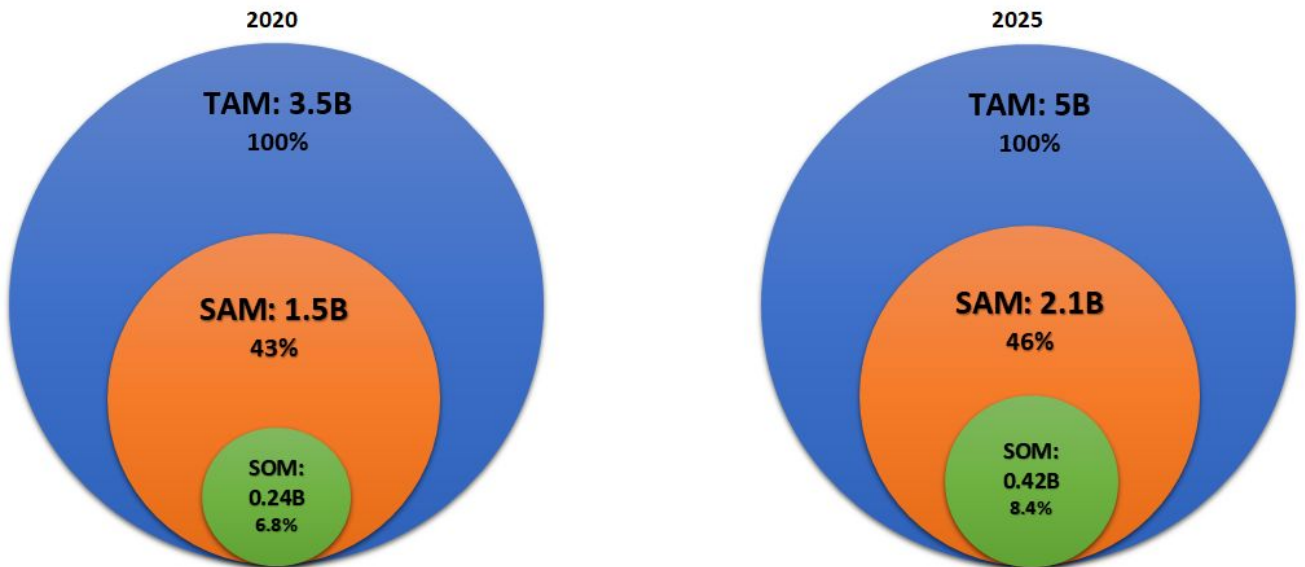


Figure 16: US Orthotic Insole Market Size, (TAM, SAM, and SOM)

Technology Adoption Curve

On the Technology Adoption Curve, Smart Soles sits on the tail-end of the early adopters section. This placement is due to other smart wearable technology like smart watches already on the market. With long work shifts and an inherently health conscious profession, Healthcare professionals are the targeted early adopter market. The plan for crossing the chasm relies heavily on the fact that Americans are working more and are on their feet more than ever. By appealing to people on their feet a lot, the addition of Smart Soles to the smart wearables market and as a purchase to consumers makes sense. This product will appeal to people that work in service industries like delivery and food service. Consumers such as people who run and workout will be in the early majority and late majority markets.

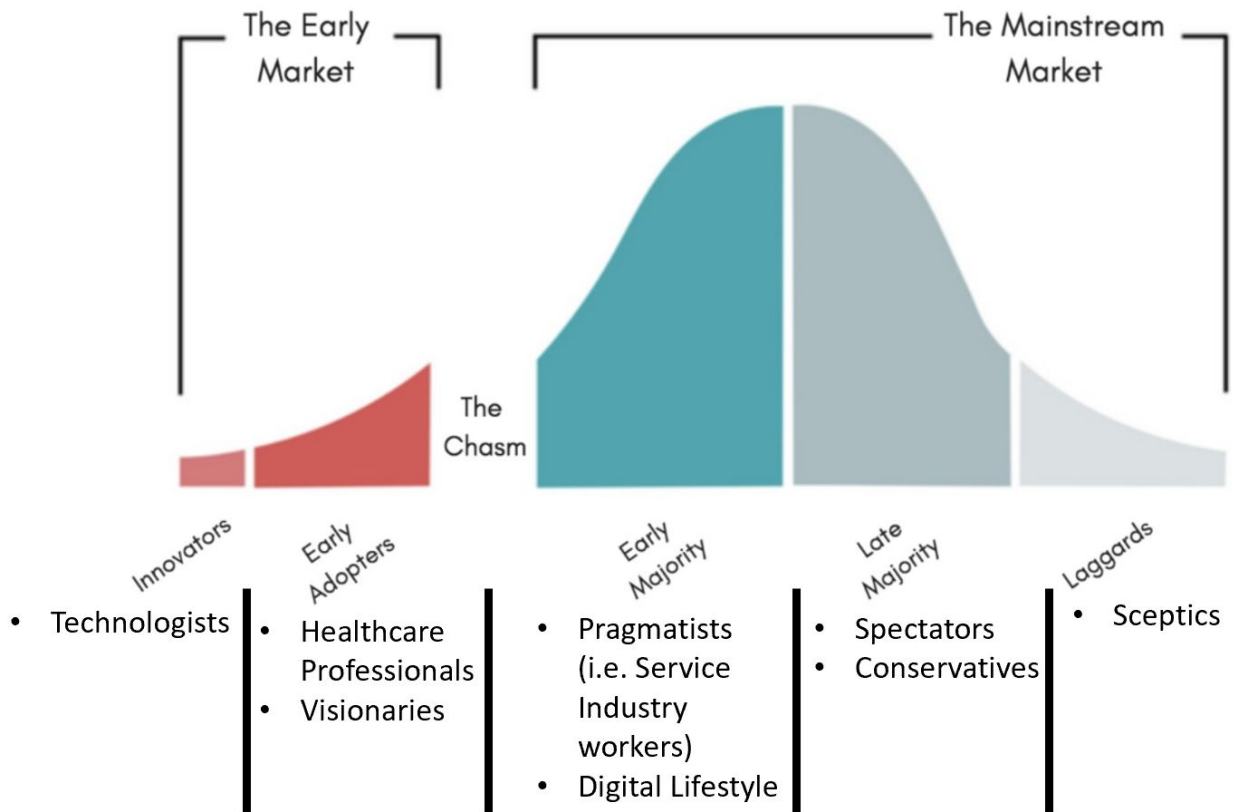


Figure 17: Technology Adoption Curve

Marketing Objective & Goals

Smart-Sole team objective is to prevent injuries by designing a comfortable, slim, and easy to clean insoles censored connected to an app, that prevents pains of standing for a long time at work and improves productivity by distributing the pressure on the foot. Nurse practitioners, hospitals, nursing home assistants and other healthcare professionals would benefit from this product to help prevent future health injuries.

Marketing Strategy

The three main marketing strategy for Smart-Sole are

1. Emailing List:

Email is the most important cost-effective way of marketing a product. A large number of healthcare professionals in the US will help the team pass our goal of selling 30,000 units in the first year with a conversion rate of 3% of responding through email advertising. We will need to send 1 million emails to targeted individuals.

$$1,000,000 * 0.03 = 30,000$$

2. Medical Conferences.

Medical revolution contributes Organizations and companies establishing conferences to present new inventions. Medical conferences are an opportunity to take advantage to reach healthcare professionals.

3. Market in social media

There are lot of positive uses of social media in daily life, and information are just a button press away. Different domains of products, social media must be one of the marketing strategies.

Pricing Strategy

Orthotic insole prices vary vastly by the type of insole, and the types of insoles can be generally categorized into 3 types: Off the shelf, customized insoles, and prescription insoles. According to pricing aggregator site costhelper.com[6], below are the common price ranges for these types of insoles [11]:

Average Price Ranges for orthotic insoles:

- Off-the-shelf orthotic insole: \$10-\$80
- Customized orthotic insole: \$100-\$200
- Prescription orthotic insole: \$200-\$800

Our pricing strategy takes into account our competitor's, our customers, and our company. Starting with the competitor's, there is currently no competitor on the market with an insole that analyzes the user's biometric and biomechanical data to automatically adjust the insole to the wearer. However the closest competitors have smart insole products that analyze the biometric and biomechanical data, such as DigitSole, and the entry level RetiSense products, and these typically range from \$150-\$900 per insole, so we use this as a reference. We also take into account the customer's reference pricing for off the shelf and customized insole products, as listed above. Our product is technically an off-the-shelf product, but it comes with the value of a customized insole, where the customer doesn't need to take it in to get the insole fitted or refitted, and this value was taken into account. Finally the cost of the insoles is considered, while the cost of the insole material would be minimal and estimated to be no more than \$20 per pair, the cost of the sensors, air pocket material, and processing chip would make up most of the cost, and we estimate a total cost of \$200 to produce each pair. This is a mere assumption that we made while trying to be conservative. Our initial selling price is set to be \$499.99 per pair, and we will implement a price skimming strategy, and decrease the sales price by roughly 5% per year to a final price of \$399.99 after 5 years. We hope to establish a perception of quality with the higher initial price, and also take advantage of eager early adopters who will be buying this product first, in order to increase our margins initially while our volumes are low. This would provide us more capital to reinvest into further promotions & distributions expenses. See **Figure 18** for details.

Initial R&D and Promotions Costs: \$10,000,000

Per Unit	Year	2021	2022	2023	2024	2025
Price of insole		\$499.99	\$474.99	\$449.99	\$424.99	\$399.99
Cost of insole		(\$200.00)	(\$200.00)	(\$200.00)	(\$200.00)	(\$200.00)
Promotion & Distribution		(\$200.00)	(\$195.00)	(\$181.00)	(\$172.25)	(\$160.00)
Total Expense		(\$400.00)	(\$395.00)	(\$381.00)	(\$372.25)	(\$360.00)
Profit		\$99.99	\$79.99	\$68.99	\$52.74	\$39.99
Margin		20.0%	16.8%	15.3%	12.4%	10.0%

Total	2021	2022	2023	2024	2025	Total
Units Sold	30,000	70,000	150,000	300,000	450,000	1,000,000
Revenue	\$14,999,700	\$33,249,300	\$67,498,500	\$127,497,000	\$179,995,500	\$423,240,000
COGS	(\$6,000,000)	(\$14,000,000)	(\$30,000,000)	(\$60,000,000)	(\$90,000,000)	(\$200,000,000)
Promotion & Distribution	(\$5,999,940)	(\$13,649,860)	(\$27,149,730)	(\$51,674,490)	(\$71,999,325)	(\$170,473,345)
Total Expense	(\$11,999,940)	(\$27,649,860)	(\$57,149,730)	(\$111,674,490)	(\$161,999,325)	(\$370,473,345)
Profit	\$2,999,760	\$5,599,440	\$10,348,770	\$15,822,510	\$17,996,175	\$52,766,655
Margin	20.0%	16.8%	15.3%	12.4%	10.0%	12.5%

Figure 18: Price, Revenue and Costs forecast

Product & Brand Management

Smart sole is a new product line in Dr. Scholl's brand. The goal of this product is to expand the brand name of Dr. Scholls into the wearable technology market. Wearable technologies are becoming increasingly popular and this new product will expand Dr. Scholl's brand into new markets. The other goal of this product is to protect Dr. Scholl's brand. It will do this by providing high quality products that our customers have expected from us throughout the years. By providing high quality products the perceived value of the Smart Sole and trust of the customer will build over time.

Distribution Management

The main distribution channel is to be selling where our main audience already shops. Most healthcare workers need to wear professional medical clothing for their job. Distributing these on websites where scrubs and other professional medical clothing is sold will help increase sales. Online shopping is convenient, a majority of healthcare workers shop for their medical clothing online. Smart Sole will also be distributed through Dr. Scholl's website. Scholl's also has stands at footwear and sporting goods stores that measure the pressure points in the feet and give suggestions to what regular

insole people should buy. The Smart Sole will also be distributed here to help cross the chasm into new segments besides healthcare workers.

Communication Management

The main goal of the communication management plan is to ensure that the target segment is getting information about the new product. Communicating with the target segment is critical to implementing the marketing plan. Social media, promotions, website advertisements all play a role in communicating with the target segment. Targeted ads on social media will help communicate the benefits of this product to the target segment. Promoting this product at medical conferences will generate views and communicate the advantages of this product to healthcare workers. Website advertisements on Dr. Scoll's website, the distribution channel website, and other website advertisements will help communicate to the target segment about this product.

Customer Relationship Management (CRM)

Smart Sole's CRM will be directed through Dr. Scholls existing channels of CRM. The main form of CRM is through online customer service. Both potential and current customers can use customer services to answer any questions or solve any problems with the new wearable technology. Data will be collected on both sets of customers to gain further insights into the target audience. The main focus of the CRM system is customer retention. The key performance indicator for the Smart Sole is a 90% customer retention rate. To ensure this metric is being met policies can be made such as free trials and extended warranties for all Smart Sole shoes.

Implementation & Control

As we start to execute this marketing plan, we will need to make sure we are on track, and it will be imperative to identify any problems or red flags early so that we can address them as soon as possible. In order to do this we will be implementing several metrics and KPI's to track to, which we will monitor closely, and create contingency plans if they start to veer off track.

One of our initial objectives is to stay within our \$10,000,000 R&D and initial Promotions budget, for which we are asking investor money for. This will be tracked in year 0, before the launch. From then on we will be tracking sales to our projected sales forecast as seen in **Figure 19**. One of the primary drivers for these sales will be ad campaigns on social media sites and email campaigns, for which we have targeted click-through, and conversion rates, as can be seen in **Figure 20**.

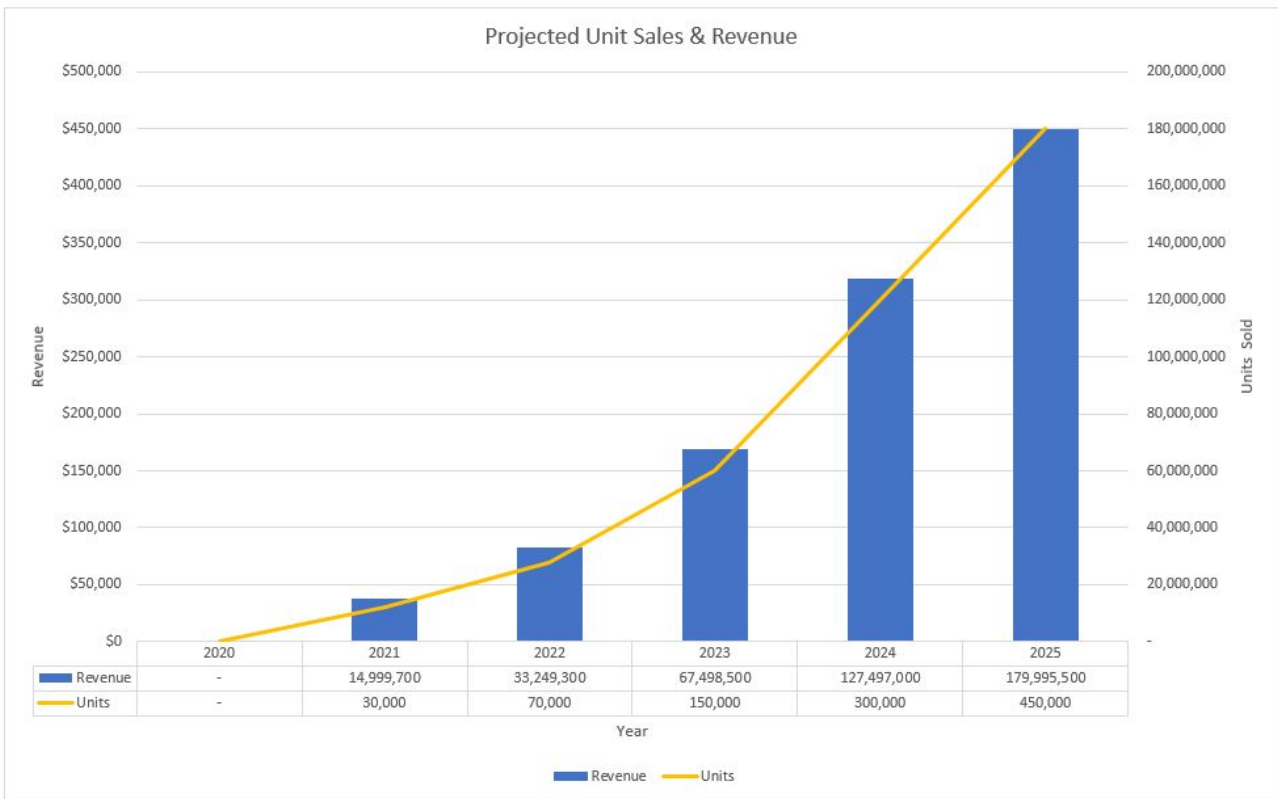


Figure 19: Projected Sales and Revenue

Email Click-Through		
Target	Actual	Variance
20.00%	TBD	TBD

Conversion Rate		
Target	Actual	Variance
3.00%	TBD	TBD

Figure 20: Email Campaign KPI's

Return on Investment:

As stated earlier, we are seeking an initial investment of \$10,000,000 in order to fund the Research and Development, as well as the initial Promotions and Marketing campaigns. To show the potential payoff from this investment, we have conducted a discounted cash flow analysis. We used our sales forecast, pricing and initial investment assumptions as described in the previous sections for the cash flow, and we used a discount rate of 23.1%. Again, trying to be conservative, the relatively high discount rate is used to reflect the inherent risk of investing into this product and marketing plan. With these assumptions as inputs, the model results in a positive Net Present Value of cash flows of \$15 million after 5 years, with the break-even point being during the third year.

See figure 21 and 22

Year	2020	2021	2022	2023	2024	2025	Total
EBIT	\$0	\$2,999,760	\$5,599,440	\$10,348,770	\$15,822,510	\$17,996,175	\$52,766,655
CapEx	(\$10,000,000)						(\$10,000,000)
Free Cash Flow	(\$10,000,000)	\$2,999,760	\$5,599,440	\$10,348,770	\$15,822,510	\$17,996,175	\$42,766,655
PV Cash Flow	(\$10,000,000)	\$2,437,838	\$3,698,123	\$5,554,486	\$6,901,586	\$6,379,287	\$14,971,320
RunningTotal	(\$10,000,000)	(\$7,562,162)	(\$3,864,039)	\$1,690,447	\$8,592,033	\$14,971,320	

Figure 21: Present Value of Discounted Cash Flows Table

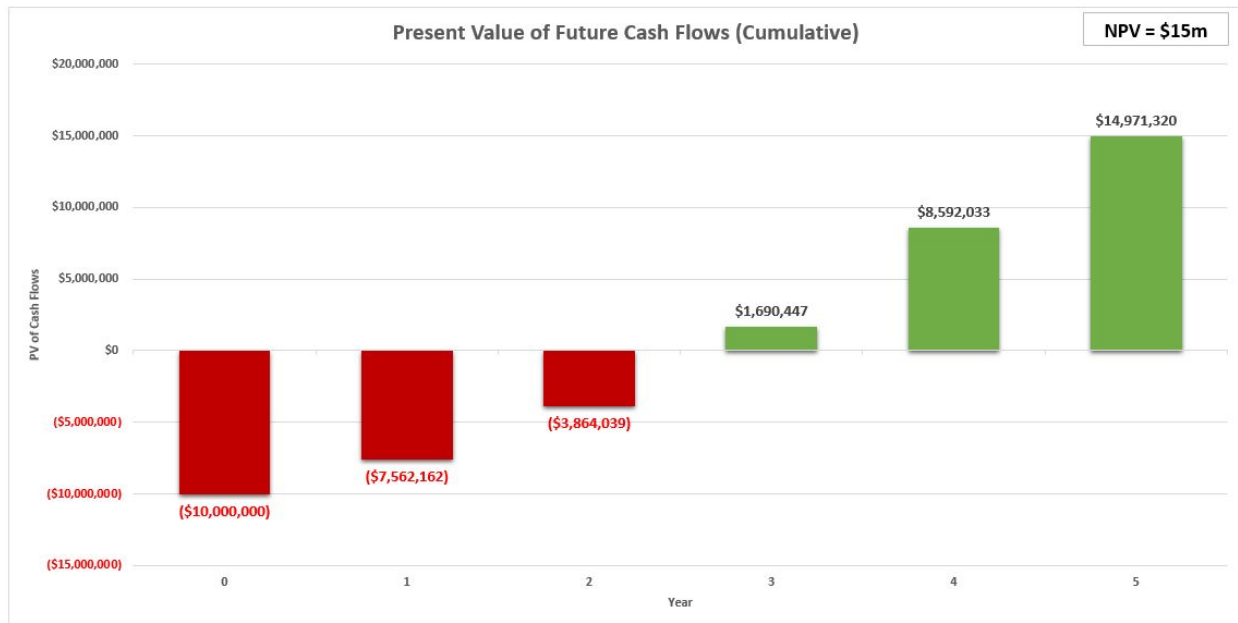


Figure 22: Present Value of Discounted Cash Flows Chart

Conclusion

Dr.Scholl's initiative to enter the smart wearable market with Smart Sole product widens the portfolio of the footcare company by increasing the value proposition to their services. The introduction of an Artificial Intelligence AI feature is a major booster in their technology domain. The marketing plan components were carefully tailored for the smart insole. We have done in depth market analysis with the existing competitors to identify the target market and create the customer persona. Based on assumptions we have calculated a figure for implementation and control for the first five years and the numbers look strong for the return on investment. Our go to market strategy is optimistic because we did choose the right target market to cross the chasm.

Based on the market research we are expecting promising results in launching our product. This will be a huge step for Dr.Scholl's to take their insole market to the next level. We have a migraine problem to solve and a cutting edge technology in our product. Smart sole has a good value proposition and it fits well with the company portfolio. Making lives better by taking care of the feet first.

Research Log and Reflection

Initial Project

Nike Map Shoe

Our initial project idea was the Nike Map shoe, below is the initial proposition for the product:

Nike Inc. in collaboration with Google Maps

Mission

Creating synergies between existing Nike and Google Maps technology to improve user experience.

Description

- Combine Nike's athletic shoes, with google maps technology allows for gps tracking. The shoes enable a tactile response in order to guide the wearer to the desired location.
- The product would provide users with more integrated navigation experience. By combining Nike and Google Maps in this technology, users will have a physical interaction during navigation in real time; reducing time spent staring at a screen and the potential of walking into traffic.
- Complementary products would include a smartphone and a data plan, Google account and Google Maps with location access enabled, etc.
- Provides directions/guidance when walking or running. Helps people with dementia or alzheimer's not get lost. It helps navigate people who are visually impaired and people who have hearing impairments.

Pivot

We thought the idea was interesting, however after conducting several interviews (see Appendix B) it became evident that the demand for this product may not be there. Most people get GPS and have access to directional assistance from their smartphones, and thus wouldn't really have a need for the shoe. We thought another selling point would be the fact that customers wouldn't need to bring their phones while wearing these shoes for running, maps, direction, etc. But it turns out most people prefer to have their phone on them always for the other features it provides.

We ended up abandoning this idea more than half way through the term, but decided to keep the theme of a smart shoe, and ended up landing on a smart insole instead. We

also learned that we needed to pick a more specific target market, and so we went with healthcare professionals, primarily because of how much a large portion of occupations in that field stand or walk, and because we felt they might be able to relate more to a health conscious product.

Smart Sole

We saw a good potential in the insole industry which was a direction to go from the Nike Map shoes. We chose to work on Smart Sole. We are a start up selling our product to Dr. Scholl's. Dr. Scholl's is currently a footwear and orthopedic foot care brand. We will be talking about the acquisition of the Smart Insoles Startup "Smart Soles" to bring smart wearables into their portfolio. Our team is looking to increase Dr. Scholl's revenue by \$180 million by the end of 5 years.

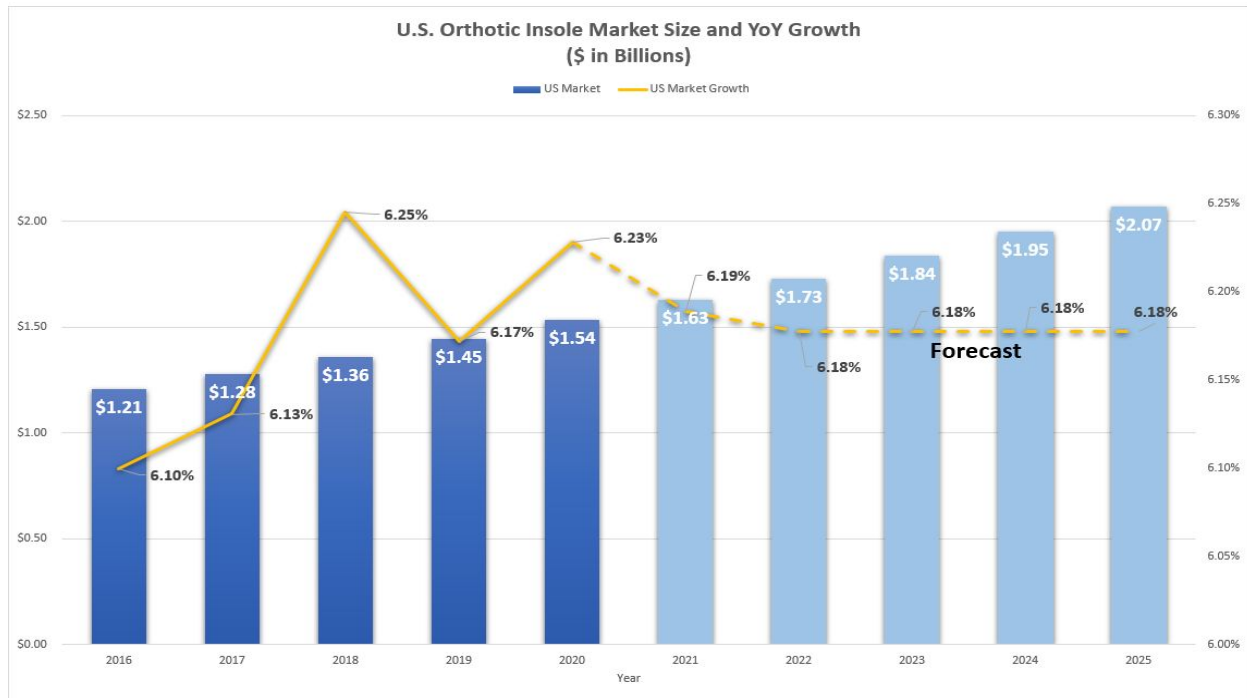
Market Size

It was difficult to find good data on the size of the insoles market, a lot of the information that seemed like it would be useful was not freely available. Most of it was from market research companies that require expensive subscriptions to view the data. Thankfully PSU has some subscriptions to these, and we were able to find some relevant information from Statista. The global orthotics and North American orthotics data provided a market size estimate from 2016 until 2021, and this is what we used to base our TAM and SAM off of, with TAM being the global market, and SAM being the North American market.

We then took the average growth rate used in the Statista data forecast, and extrapolated that for the years 2022-2025, see table below (\$'s in Billions):

Orthotic Market Growth

Year	Global Market	US Market	Global Market Growth	US Market Growth
2016	\$2.782	\$1.207	5.50%	6.10%
2017	\$2.935	\$1.281	5.50%	6.13%
2018	\$3.106	\$1.361	5.83%	6.25%
2019	\$3.278	\$1.445	5.54%	6.17%
2020	\$3.468	\$1.535	5.80%	6.23%
2021	\$3.678	\$1.630	6.06%	6.19%
2022	\$3.888	\$1.731	5.70%	6.18%
2023	\$4.109	\$1.838	5.70%	6.18%
2024	\$4.344	\$1.951	5.70%	6.18%
2025	\$4.591	\$2.072	5.70%	6.18%



For the Service Obtainable Market we looked at how many people there are in our target market, which we assumed was roughly 10 million healthcare professionals, which are not in predominantly desk job occupations, based on BLS data. From there

we assumed that we could penetrate 10% of that market, with some aggressive growth assumptions, see growth assumptions below:

	Units	% of Goal	GrowthRate	Revenue	Expenses
2020	-	0%	0%	-	-
2021	30,000	3.0%	0%	14,999,700	(11,999,940)
2022	70,000	7.0%	233%	33,249,300	(27,649,860)
2023	150,000	15.0%	214%	67,498,500	(57,149,730)
2024	300,000	30.0%	200%	127,497,000	(111,674,490)
2025	450,000	45.0%	150%	179,995,500	(161,999,325)
	1,000,000	100.0%		423,240,000	(370,473,345)

Pricing Strategy

Since we have a pretty niche product, which is highly dependent on early adopters for it to cross the chasm, we thought a price skimming strategy might be appropriate.

Additionally, this would initially give the perception of a higher quality product, and also due to the fact that there are no direct competitors to our exact value proposition. The figure below shows our pricing assumptions:

Per Unit	Year	2021	2022	2023	2024	2025	
Price of insole		\$499.99	\$474.99	\$449.99	\$424.99	\$399.99	
Cost of insole		(\$200.00)	(\$200.00)	(\$200.00)	(\$200.00)	(\$200.00)	
Promotion & Distribution		(\$200.00)	(\$195.00)	(\$181.00)	(\$172.25)	(\$160.00)	
Total Expense		(\$400.00)	(\$395.00)	(\$381.00)	(\$372.25)	(\$360.00)	
Profit		\$99.99	\$79.99	\$68.99	\$52.74	\$39.99	
Margin		20.0%	16.8%	15.3%	12.4%	10.0%	
Total	Year	2021	2022	2023	2024	2025	Total
Units Sold		30,000	70,000	150,000	300,000	450,000	1,000,000
Revenue		\$14,999,700	\$33,249,300	\$67,498,500	\$127,497,000	\$179,995,500	\$423,240,000
COGS		(\$6,000,000)	(\$14,000,000)	(\$30,000,000)	(\$60,000,000)	(\$90,000,000)	(\$200,000,000)
Promotion & Distribution		(\$5,999,940)	(\$13,649,860)	(\$27,149,730)	(\$51,674,490)	(\$71,999,325)	(\$170,473,345)
Total Expense		(\$11,999,940)	(\$27,649,860)	(\$57,149,730)	(\$111,674,490)	(\$161,999,325)	(\$370,473,345)
Profit		\$2,999,760	\$5,599,440	\$10,348,770	\$15,822,510	\$17,996,175	\$52,766,655
Margin		20.0%	16.8%	15.3%	12.4%	10.0%	12.5%

Competitor Analysis

We considered three competitors with different portfolio and value propositions. There were no products available in the market with the exact product specification as ours. ReTiSense has a wide range of products with insole builder tools for doctors to design 3D printable soles for patients. Their products are designed for coaches/trainers, casual runners recovering from injury, physiotherapists, gait researchers, rehab clinicians, podiatrists, and diabetic foot clinicians. ReTiSense products measure the following parameters.

- Instantaneous load
- Foot strike
- Ground contact time
- Step count
- Stride Length
- Cadence
- Lateral weight shift
- Overpronation/supination
- Gait length
- Peak load
- Foot rotation
- Full-foot weight distribution

ReTiSense products have gained attention from various universities who are doing advanced gait research. Some universities are

- Vanderbilt University
- Johns Hopkins University
- University of Florida
- University of Western Australia
- Loughborough University

PODOSmart has Artificial intelligence software analysis capability just like Smart Sole. They are designed specifically for motion analysis. It is taking the treadmill study to the next level. DigitSole has two products. One of them is for athletes and the other insole is for temperature control.

Product and Brand Management

The product and brand management strategy revolves around expanding and protecting the brand. Wearables will be able to expand the brand name while providing a quality product will protect it. If the perceived quality of the product is not good it has a chance of tarnishing the reputation of the brand.

Distribution Management

Through research and discussions with the professor the distribution channel for the Smart Sole would be through scrubs or professional medical clothing websites. The reason why is because the target segment is narrow with healthcare workers. Getting the product in front of the target customer's eyes is important. So selling them where they are already shopping is a sound distribution channel.

Communication Management

Communication management is how businesses communicate with current and potential customers. In today's digital age everything is communicated through online platforms. Utilizing these resources is how Dr. Scholl's plans on communicating with its customers.

Customer Relationship Management (CRM)

The main purpose of the CRM is to retain customers. Customers should be the focus of every business and product. Learning how to serve and create value in their lives is a top priority. The CRM provides the communication between the customer and business. Quality customer service is a key factor in retaining customers.

Return on Investment

We tried to simulate a new product launch by requesting capital to fund the initial phases of the project. We assumed that a \$10 million investment would be reasonable to get this off the ground, with about half going to R&D costs and half to promotions and advertisement for the year leading up to the launch. We had to assume that this technology would be possible, and be developed within this budget. From there we did a discounted cash flow analysis in order to gauge the viability of the investment over a 5 year period, using our pricing and sales forecast assumptions. We also used a discount rate of 23%, this was done using some basic assumptions and plugging them into the capital asset pricing model:

Risk Free Rate	1%
Market Risk Premium	22%
Beta	1.05
Discount Rate	23.1%

This discount rate was then applied to the future forecasted cash flow as based on the pricing and sales forecasts:

	Units	% of Goal	GrowthRate	Revenue	Expenses	CapEx	Profit
2020	-	0%	0%	-	-	(10,000,000)	-
2021	30,000	3.0%	0%	14,999,700	(11,999,940)		2,999,760
2022	70,000	7.0%	233%	33,249,300	(27,649,860)		5,599,440
2023	150,000	15.0%	214%	67,498,500	(57,149,730)		10,348,770
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	1,000,000	100.0%		423,240,000	(370,473,345)	(10,000,000)	52,766,655

Year	2020	2021	2022	2023	2024	2025	Total
EBIT	\$0	\$2,999,760	\$5,599,440	\$10,348,770	\$15,822,510	\$17,996,175	\$52,766,655
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Free Cash Flow	(\$10,000,000)	\$2,999,760	\$5,599,440	\$10,348,770	\$15,822,510	\$17,996,175	\$42,766,655
PV Cash Flow	(\$10,000,000)	\$2,437,838	\$3,698,123	\$5,554,486	\$6,901,586	\$6,379,287	\$14,971,320
RunningTotal	(\$10,000,000)	(\$7,562,162)	(\$3,864,039)	\$1,690,447	\$8,592,033	\$14,971,320	

Appendix B: Interviews and Process

Assumptions:

People would be interested in the Nike Map Shoe due to it's GPS tracking and route recommendation through haptic responses and cue's, thus allowing the wearer to utilize GPS without holding, or even having a smartphone on them.

Each of us interviewed several people in person, below is a brief summary of the interviews and the general outcome/interviewee disposition towards the shoe.

Interviewee #1: PSU Soccer player 1

Age: 21

Runner

She is a soccer player at PSU. Team goes on runs through downtown portland

Pain point/takeaways: She is a senior leader and has to organize the runs. Finding and mapping out routes to run. Clothing doesn't allow her to store her phone so she has to carry it to direct the team.

Interviewee #2: PSU Soccer player 2

Age 20:

Runner

Pain points/ takeaways: Doesn't know Portland very well and needs navigation to help her run. Uses Apple watch and Nike running app to guide her.

Interviewee # 3: World Traveler

Age: 75

Pain points/ takeaways: Has traveled to 12 other countries. Is not tech savvy but has to rely on it to travel. Download maps for reference before the trip. Talks to strangers when confused about locations and other things when regarding the trip. Mostly uses a tour guide service for the big tourist attractions.

Interviewee #4: Caretaker

Age: 52

Takes care of her mother who has onset of dementia, says knowing where her mother is, or if she leaves the house is a concern of hers. Currently uses iPhone Find My Friends app, but worries if her mother might leave her phone at home and leave. Says shoes with GPS might be interesting and make her feel more at ease

Interviewee #5: Employee in Tech industry, active lifestyle, likes running, hiking, fitness.

Age: 30

Mostly interested in how comfortable, reliable and fashionable her shoes are, says she already takes her phone everywhere and wouldn't have a need for a shoe to have GPS. but if the product became a big hit and was in style she would still consider buying it.

Interviewee #6: Employee at sportswear apparel company, has a large collection of shoes.

Age: 33

He thought the GPS tracking, route recommendation and haptic responses were cool features, but wouldn't really push him to buy the shoe, as most of that functionality can be done on his smartphone. However if the shoe was stylish and became "cool" he would probably add them to his shoe collection.

Interviewee #7: Employee at Nike, Data Analytics Domain. Crazy after Nike Products.

Age: 29

Nike employees at the World Headquarters are supposed to wear only Nike products on campus. Other brand apparel are strictly prohibited. Nike employees get a 50% employee discount at the Nike employee store. Most employees have a huge collection of Nike shoes and other apparel. He likes hiking and running. The Nike map shoes will come in handy while running. He already has Nike shoes for every occasion such as indoor gym shoes, hiking shoes, casual wear, running shoes, jogging shoes, and also party wear. Working on predicting the demand for Nike shoes increased his knowledge on the various Nike shoe technology. He is amazed with the Nike map shoe concept and can't wait to buy it.

Interviewee #8

ICU Nurse

Age: 21

Works at the ICU in a Portland hospital. Most of her patients are ventilated. These patients can't care for themselves at all and she takes care of their every need. She is on her feet a lot because of the demanding care her patients require. Sees only 1-3 patients because they are highly needy. ICU takes critical thinking because something bad can happen at a moments notice and everything must be dropped to solve the problem at hand in a quick manner to save the patient's life. Works three 12 hour shifts but if a patient "codes" the shift can be longer until the patient is in a stable condition.

Interviewee # 9

NICU Nurse

Age: 23

Neonatal Intensive Care Unit Nurse at a Portland Hospital. She is the “catcher” at the neonatal facility. When assessing the newborn the procedure takes 45 minutes to an hour per baby. Usually takes care of 1 - 2 babies. Stands and talks to parents for a portion of her day. Performs other typical nursing duties but her patients are babies who can't communicate what the problem is.

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