



**POLITECNICO**  
MILANO 1863

**S**antagostino  
LA TUA SALUTE

# BUSINESS PLAN

---

PRODUCTION OF ORTHOPAEDIC FOOT ORTHOSIS:  
ANALYSIS OF THREE SCENARIOS

**Course of Management of Organizations and Project**

Professor: Giovanni Toletti

Tutors: Yasmine Raji and Alice Giovanna Rossi

Federico Bedini	10766359
Teodoro Crapolicchio	10721844
Leopold Müller	11074949
Michele Povolo	10798880
Elena Robles	10770600
Luca Vaiani	10805626

## Executive summary

Santagostino Medical Center, a leader in providing accessible and high-quality outpatient healthcare services, aims to evaluate the feasibility of internalizing the production of orthopedic insoles. This business plan explores three strategic scenarios to enhance operational efficiency, improve patient experience, and align with the organization's long-term goals of sustainability and quality assurance.

The orthopedic insoles currently prescribed by Santagostino's orthopedists and podiatrists are predominantly produced externally. Despite a steady demand, the current model lacks integration and control over production, limiting the clinic's ability to meet its quality and service standards. Over the past year, approximately 921 prescriptions for insoles were issued, but only a fraction were fulfilled within Santagostino's network, indicating a significant untapped market potential.

A comprehensive analysis was conducted, including PESTLE, Porter's Five Forces, and SWOT frameworks, to evaluate the strategic options available. Internalization of production emerged as a compelling opportunity for Santagostino to enhance its value proposition. By establishing an in-house manufacturing facility, the clinic can ensure strict quality control, enable rapid customization, and integrate production with its extensive network of clinics, thereby delivering a seamless "one-stop" experience for patients.

From a financial perspective, internalization requires significant upfront investment in equipment, infrastructure, and training. However, the vertical integration model promises to reduce outsourcing costs, achieve economies of scale, and generate higher margins over time. Moreover, the operational model would leverage the expertise of Santagostino's medical team, aligning production with clinical standards and patient needs. Projections suggest that even under conservative assumptions, internal production can achieve profitability through increased patient retention, customer satisfaction and revenue diversification for the entire company.

However, the initiative carries inherent risks, with reputational risk being the most critical. As Santagostino is known for its high-quality healthcare services, any deviation from expected standards in the production of insoles could significantly damage the brand's image and the perceived quality of its services.

# Table of Contents

Introduction.....	1
The company .....	1
Business model canvas.....	2
CHAPTER 1: Product and Service .....	3
Description .....	3
Santagostino starting point.....	5
Who, what, how .....	6
CHAPTER 2: Strategy .....	8
PESTLE analysis.....	8
5 forces analysis .....	12
Value, Vision and Mission .....	15
Porter's value chain – SCENARIO 1.....	15
Porter's Value Chain - SCENARIO 2 .....	17
Porter's value chain - SCENARIO 3.....	19
Strategic alternatives: quality-driven differentiation focused on local presence .....	20
SWOT analysis.....	22
CHAPTER 3: Marketing .....	25
Market analysis .....	25
Marketing strategy .....	26
CHAPTER 4: Financial Analysis.....	29
CHAPTER 5: Final Decision and Risk Analysis .....	33
Final Decision.....	33
Financial Risk .....	33
Operational Risk .....	33
Regulatory and Compliance Risk .....	34
References.....	36
Table of figures.....	38
Appendix.....	39
Appendix 1 – Prescription Data.....	39
Appendix 2 – Cost and Revenue Structure .....	40
Appendix 3 – NPV Tables.....	43

# Introduction

## The company

Santagostino is a network of comprehensive specialist outpatient clinics founded in 2009 that has inaugurated a cutting-edge model in Italy, combining high quality and accessibility. Its goal is to meet the healthcare needs of Italians by facilitating access to care for everyone. Since its inception, Santagostino has aimed to improve the overall healthcare service offering and contribute to community health by responding to citizens' needs in a broader and more effective manner. Santagostino acts as a vital complement to the national healthcare system, providing a quality alternative for those in need of specialist care in a timely manner. An equally important goal is to address the relational needs of individuals, fostering the establishment of a good doctor-patient relationship based on listening and trust. To this end, we ensure adequate consultation times for proper diagnostics and the possibility of choosing a specialist to maintain therapeutic continuity. The model is "smart," designed to guarantee a quality patient experience, also thanks to the technological innovation that constitutes one of the distinctive factors of the company.

Our team of professionals, from doctors to reception staff, provides the best care experience. An effective and efficient organization of work, with extensive use of technology and digital tools, helps us contain costs, offer patients competitive prices, with either no or very short waiting lists, while ensuring the highest quality and adequate compensation for the healthcare personnel working with us.

## The Promoters

Santagostino was conceived and promoted by Oltre Venture, the first Italian social venture capital company created by a group of private individuals who have always been attentive to public interest initiatives. Due to its seriousness and importance, the project has attracted a team of doctors, department heads, and professionals from various facilities who wanted to put their expertise at the service of citizens. Oltre Venture conceived and founded Santagostino, maintaining control until 2019, alongside other private investors who shared the model.

At the end of 2022, Santagostino joined UnipolSai: the insurance company has indeed acquired the entirety of the share capital. This acquisition falls within the strategic direction of Beyond Insurance Enrichment of the 2022-2024 Industrial Plan of the Unipol Group ("Opening New Ways"). The operation represents an important piece of the welfare ecosystem of the insurance group and will allow Santagostino to build a presence across the entire national territory, both with physical centres and telemedicine tools, fully leveraging possible synergies with the group and completing the clinical offering, providing patients with everything that does not require hospitalization (including affordable imaging diagnostics in terms of cost and time), aiming to become the leading provider of non-hospital services in Italy, with high quality.

## Business model canvas

<b>KEY PARTNERS</b> <ul style="list-style-type: none"><li>• Suppliers and deliveries</li><li>• Medical associations (for guidelines and certifications)</li></ul> <b>SCENARIO 2:</b> <ul style="list-style-type: none"><li>• Orthopaedic insoles producer (eg. Paramed).</li></ul> <b>SCENARIO 3:</b> <ul style="list-style-type: none"><li>• Technology provider (eg. Ginev SRL, Sensor medica).</li></ul>	<b>KEY ACTIVITIES</b> <ul style="list-style-type: none"><li>• Teach the patient the correct way to use the plantar</li><li>• Orthopaedic and podiatrist checkups</li></ul> <b>SCENARIO 2:</b> <ul style="list-style-type: none"><li>• Establish agreements with an external producer.</li></ul> <b>SCENARIO 3:</b> <ul style="list-style-type: none"><li>• Production of the plantar</li><li>• R&amp;D to improve the quality</li><li>• Machinery testing and maintenance.</li></ul>	<b>VALUE PROPOSITIONS</b> <ul style="list-style-type: none"><li>• Pain relief and prevention</li><li>• Faster service compared to public healthcare</li><li>• High quality, customized orthotics</li><li>• Fulfilment of Santagostino's trusted standards.</li></ul>	<b>CUSTOMER RELATIONSHIPS</b> <ul style="list-style-type: none"><li>• Personal assistance</li><li>• Web service for reservations</li><li>• After sales services.</li></ul>	<b>CUSTOMER SEGMENTS</b> <ul style="list-style-type: none"><li>• People interested in foot condition.</li></ul>
	<b>KEY RESOURCES</b> <ul style="list-style-type: none"><li>• Website and app</li><li>• Podiatrists and orthopedists</li></ul> <b>SCENARIO 3:</b> <ul style="list-style-type: none"><li>• Orthopaedic lab with a technician</li><li>• Instrumentation, software and raw materials</li><li>• Storage facility.</li></ul>		<b>CHANNELS</b> <ul style="list-style-type: none"><li>• Medical checkups</li><li>• Podiatrist and orthopedist</li><li>• General practitioner</li><li>• Word of mouth</li><li>• Web services (Santagostino video, Santagostino-pedia, Santagostino magazine)</li><li>• E-mail newsletter.</li></ul>	
<b>COST STRUCTURE</b> <ul style="list-style-type: none"><li>• Costs of marketing and promoting the service</li><li>• Costs for remote support on wear and replacement need and follow-up checkups</li></ul> <b>SCENARIO 2:</b> <ul style="list-style-type: none"><li>• Costs for acquiring externally the orthoyic insoles.</li></ul> <b>SCENARIO 3:</b> <ul style="list-style-type: none"><li>• Costs for dedicated lab, technician salary and training</li><li>• Purchase and maintenance of the machineries</li><li>• Cost for materials, supplies, R&amp;D, and storage.</li></ul>			<b>REVENUE STREAMS</b> <ul style="list-style-type: none"><li>• Plantar sales</li><li>• Diagnostic service.</li></ul>	

# CHAPTER 1: Product and Service

## Description

The foot orthotic, otherwise known as plantar or insole, is a removable, non-invasive medical device intended to be inserted into a custom-made or standard shoe. It must be custom-made using non-traumatizing materials that do not risk permanent deformation and do not cause skin intolerance reactions. It must be produced upon medical prescription, which should specify: the nature of the pathology justifying the provision and the clinical indications influencing the insole's design. The insole is intended to correct a static and dynamic imbalance in individuals with morphological and pathological foot dysfunctions, relieve painful pressure points, support, and compensate for fully healed lesions. The device allows for the normalization of foot support with maximum surface area on the ground. The plantar aims to adjust the foot's joint alignment to achieve morpho-structural rebalancing of the limb during the stance and propulsion phases, both in static and dynamic conditions. It is used in painful foot conditions (metatarsalgia, Morton's neuroma, capsulitis, etc.) and in certain lower-limb complications from systemic conditions such as diabetic foot, rheumatic foot, and other diseases affecting the vascular, nervous, and lymphatic systems (e.g., peripheral vasculopathy, lymphedema, Charcot-Marie-Tooth disease). It is designed and manufactured to be easily managed by the user, meeting the requirements for: functionality, durability, safety, aesthetics.

Plantars influence the biomechanics of the locomotor system by altering the application of forces on the ground through the interaction of ankle-foot-plantar-shoe-ground. The foot orthosis adjusts the distribution of forces on the plantar surface by increasing the foot's support surface, thereby reducing applied forces. The greater the surface, the less force is applied. Through this method, the use of cushioning materials "relieves" certain areas of the support surface, reducing pressure on high-stress zones. Additionally, it controls foot movements during gait and manages the two primary movements of the foot, pronation and supination, which, when dysfunctional, are a key cause of biomechanical issues. Furthermore, the plantar compensates for altered mechanical conditions of the foot, improving the functionality of the joints above (Lo Mauro, 2024).

## Use cases

In recent years, guidelines have expanded the range of pathologies for which the use of plantars is strongly recommended (Gruppo San Donato, 2024). These aids are prescribed for various pre- and post-operative conditions, including Overload metatarsalgia (pain in the sole of the foot), plantar calluses, heel pain from heel spurs, insertional fasciitis, and overuse tendinopathies, as well as deformities such as hallux valgus, hallux limitus/rigidus, and claw toes. In these cases, the plantar relieves pressure in the affected areas.

- Pronated flatfoot and pronation syndrome: a semi-functional or functional plantar is recommended in these conditions for prevention, to avoid symptom progression that could lead to significant arthritic states eventually requiring ankle prosthesis surgery.
- Cavus foot with supination: the plantar prevents excessive foot rotation into forced supination.

- Valgus or varum knee and patellar syndromes: the plantar plays an essential role in controlling internal and external rotations, helping to maintain knee functionality.
- Arthritic processes.
- True and apparent limb length discrepancies.

Similarly recent studies have shown insoles, flat or textured, improve the balance for patients over 65 decreasing the risk of falling (de Morais Barbosa, et al., 2018).

The limitations of the plantar include its inability to correct lateral foot deformities, the fact that it compensates for rather than cures issues, its inability to alleviate all types of pain, and its tendency to take up space inside shoes, often requiring footwear that accommodates its presence.

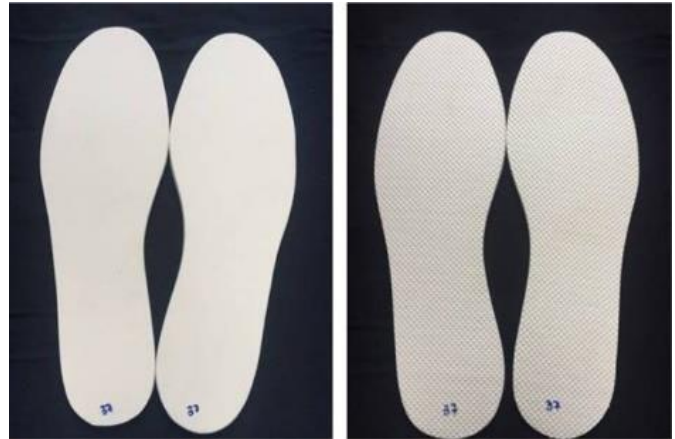


Figure 1: Flat vs textured insole

### Classification (based on function)

Corrective Insoles: progressively correct defective foot posture or an abnormal footprint.

Analgesic Insoles: reduce, limit, and eliminate pain by cushioning and relieving pressure on a painful spot. They help reduce functional limitations associated with pain.

Biomechanical Insoles: designed to absorb the shock wave that the heel experiences during the initial ground contact and to stabilize the metatarsal heads, promoting a physiological anatomical posture of the foot and aligning the hindfoot. These are particularly indicated in cases where the "biomechanical" problem is predominant, such as significant ankle pronation or major joint pathologies.

### Measurement and Evaluation

Orthotic insoles are crafted following a detailed examination of the foot's conformation and structure to determine necessary corrections or modifications. The evaluation must consider not only the static phase but also all dynamic phases of walking to provide objective data needed by the orthopaedic technician for creating increasingly accurate custom orthotic insoles. This assessment is conducted mainly with two objective instruments: podoscanalyzer, captures a computerized image of the foot's static imprint to highlight pressure areas, and static (bipedal standing) and dynamic (during walking) baropodometric exam that provides information on the pressures between the foot and the ground, stability, weight distribution, and any metatarsal or digital overloads. This exam can be performed barefoot, to assess pathologies and identify overload areas, and with shoes, to verify the effectiveness of the orthotic insole correction.

### Classification (based on customization)

Another important classification is based on the various levels of customization possible when making an insole. The simplest solution involves products made from a single material and shaped in a two-dimensional process to match the contour of the patient's foot. A more advanced solution

uses a combination of materials with different densities, requiring three-dimensional modeling of the insole. Finally, the highest level of customization entails constructing the insole from a cast of the patient's foot. Insoles can be produced using various methods:

- By removal: starting from a block of suitable material (mainly non-thermoformable materials), relief areas are created by removing and shaping the material to suit the patient's pathology and foot morphology. This process does not involve heating and molding but instead is crafted on a footprint by manually milling latex or other materials with varying rigidity, depending on the correction required.
- By addition: correction elements are added to a "support base" according to the foot's morphology.
- From a mold: using a three-dimensional footprint (mold or CAD), the material is shaped to provide both the base and correction elements. These materials are typically thermoformable, like variable-shore EVA (Ethylene Vinyl Acetate), texon, carbon and fiberglass. The insole "sandwich" consists of multiple layers, each with different thicknesses, colors, and hardness levels (shore).

## Materials Used

Materials must be non-traumatizing and tailored to each specific pathological case. Each component of the foot orthosis is characterized by specific materials:

- Correction elements: these can be soft or rigid and must be adapted according to the medical prescription and baropodometric exam.
  - Soft: veolene, plastazote, expanded polyurethane, rubber and derivatives, agglomerates.
  - Rigid: leather, aluminum, polypropylene, carbon.
- Support base or insole made from leather or pediflex.
- Lining made from soft leather and soft antifungal materials.

## Processing and Adjustment

One or more fitting sessions are necessary. In the months following delivery, insoles may be progressively adjusted to ensure continual adaptation to the initial condition's evolution. These adjustments are recorded in the maintenance log provided by the technician, which the patient should keep and bring to check-ups and renewals.

## When to Replace Insoles

The minimum usage time for insoles before replacement is one year for adults, six months for children and adolescents up to 18 years, except in cases of accidental or abnormal deterioration due to a physiological.

## Santagostino starting point

Currently, in Santagostino clinics, the physicians prescribing orthotic plantars are orthopaedists and podiatrists. At present, the production of these plantars is conducted only by a select group of podiatrists, who manufacture them in external laboratories. According to Italian law, these



podiatrists are permitted to sell their custom-made plantars only to their own patients and must deliver them personally; it is not allowed for one podiatrist to dispense an insole prescribed and produced by another doctor to a patient. The podiatrist consultation services are available in the Milan and Rome urban areas. Of the eleven podiatrists under contract, six (all based in Milan) are currently engaged in the production of orthotic plantars. Based on data from the past year (October 2023 to September 2024), it is estimated that a total of approximately 921 plantars were prescribed, with 193 prescribed by podiatrists and 728 by orthopaedists. The number of plantars produced by Santagostino's podiatrists was 25. When a podiatrist prescribes a plantar, nine out of ten patients do not rely on Santagostino for the production. In this context, Santagostino has three potential scenarios to consider in this document:

**SCENARIO 1:** maintaining the current system as it is.

**SCENARIO 2:** partnering with an external producer, allowing Santagostino to sell plantars in every area where there is an orthopaedist or podiatrist who can prescribe them.

**SCENARIO 3:** open its own laboratory to produce insoles for patients internally, having total control over the quality of the product and allowing Santagostino to sell the plantars in every area where there is an orthopedist or podiatrist who can prescribe them.

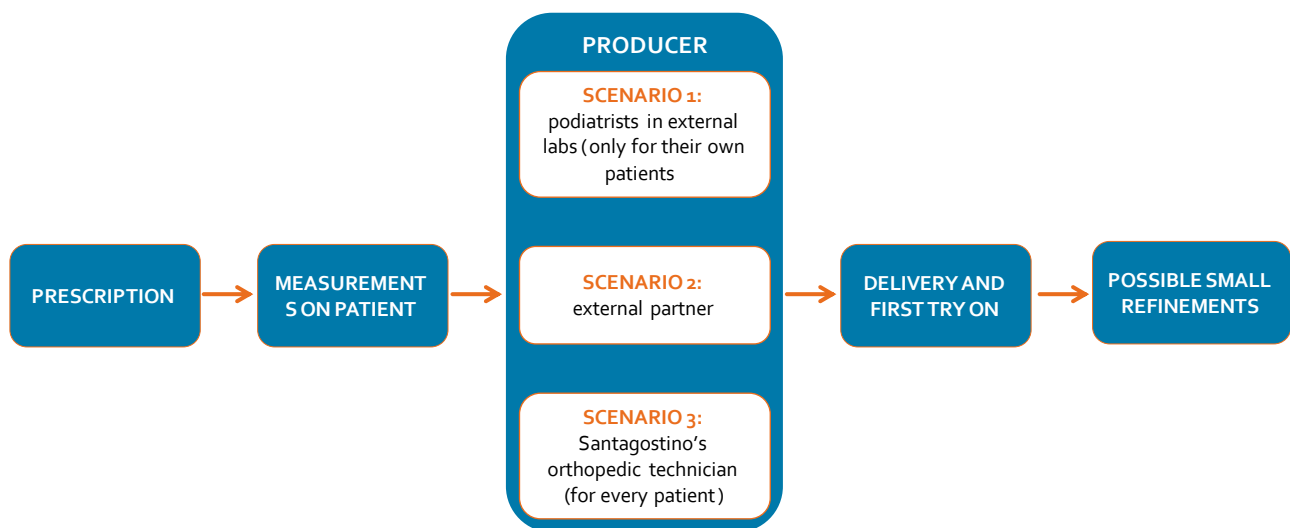


Figure 2: Production line and operational flow

## Who, what, how

**Who:** our main customers are Santagostino's clients asking for a podiatrist or orthopaedics consultation. Another group of customers is represented by elderly people who visit a geriatrician or an orthopaedic doctor for another pathology, lastly athletes, like runners, looking for sports insoles.

**How:** as previously described, there are three construction techniques that vary in complexity and level of customization.

What: there are many needs that insoles can satisfy, representing them in a pyramid structure in the lower part the key objective in the case of a pathological customer, is to relieve pain and increase comfort, while the upper part is made up of needs of the non-pathological customers such as preventing injuries.

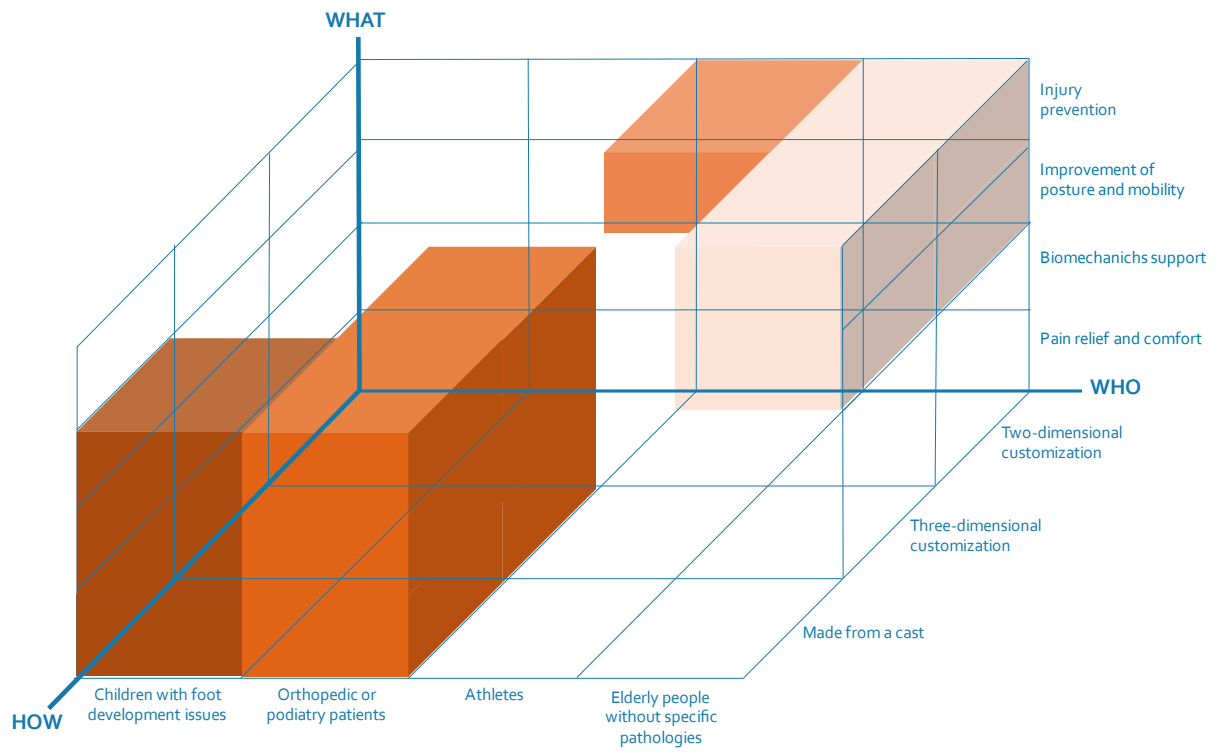


Figure 3: Abell model for plantars

## CHAPTER 2: Strategy

### PESTLE analysis

#### Political

Government policies related to healthcare directly impact Santagostino. Changes in healthcare regulations, access to medical services, and public health funding could influence service delivery. In 2022, the 31 private healthcare operators examined reported revenues of 10.6 billion euros, an increase of 2.7% compared to 2021 and 8.7% compared to 2019. These changes contrast with the 6.6% decline recorded in 2020, due to the partial suspension of healthcare activities, and the 14.5% rebound seen in 2021. Diagnostic operators grew by 22.3% compared to 2019, thanks to the exceptional demand for swabs and molecular tests during the pandemic. This segment, however, saw an 8.1% drop in revenues compared to 2021. Hospital operators followed with a 10% growth compared to 2019, while nursing home operators (RSA) saw a 4.1% increase (Area Studi Mediobanca, 2024). In Italy, private healthcare centers may benefit from government incentives such as tax breaks or financial aids. Any changes in government policies that support private health providers could positively impact the center's financial sustainability. For example, there are various tax incentives for private healthcare expenses, both direct and those mediated through insurance and healthcare funds. It is possible to deduct 19% of personal healthcare expenses from income tax (IRPEF) for amounts exceeding 129.11 euros. Contributions made by employers and employees to healthcare funds or welfare schemes, following collective agreements or company agreements, do not count towards the employee's taxable income, up to a maximum of 3,615.20 euros per year. Contributions paid by the employer are deductible from the employer's business income, thereby reducing the company's taxable income. Furthermore, since 2016, productivity bonuses converted into corporate welfare, which can also be used to cover medical expenses, are exempt from taxation and social security contributions for both the company and the employee, within certain limits. (MISSOC, 2023) (Etica Economia, 2024). Furthermore, historically Italy has not been an overly politically stable country as many governments were broken up, with a mean term of 1.1 years. However, it might be living through one of the most stable periods in its existence right now. The government under Meloni is cementing Italy's position in world politics with firm stances and a strong collaboration with international partners like the USA, putting the mediterranean back in center stage. Internally approval rates remain high and consequently it does not look like the government is going to be toppled prematurely (Atlantic Council, 2024).

#### Economic

The demand for private medical services is closely tied to the financial capacity of consumers. Economic downturns, such as recessions or high unemployment rates, could reduce people's ability to pay for private healthcare services. In Italy expenditure on health insurance has increased, rising from just over 1% to around 3% (Etica Economia, 2024) and the cost of private health insurance policies influences demand for private healthcare services. An increase in costs could discourage people from seeking private care, or they may turn to more affordable services. In recent years, there has been a continuous increase in the number of people enrolled in collective healthcare

schemes, which nearly doubled between 2014 and 2020, reaching 10.6 million (Banca d'Italia, 2023), (Etica Economia, 2024). Rising competition from other private healthcare centers, clinics, and hospitals (such as Humanitas, Gruppo San Donato, CDI...) that offer competitive prices, or innovative services could affect Santagostino's market share. The highest net profitability, in 2022 compared with previous year, is recorded by: Centro di Medicina (22.2%), Humanitas (13.4%), Eurosanità (9.5%), and GHC (8.3%) in hospital care; Synlab (39.2%) in diagnostics; and San Raffaele di Roma (36.3%) in rehabilitation (Area Studi Mediobanca, 2024). On the economic front, after a slow decrease of economic growth, Italy's economy is set to have a slightly accelerated growth in 2025 of 1.1%. While this could suddenly shift again, the low energy prices were a major factor in cooling down the inflation compared to other European countries. The domestic demand still fueled by a real wage increase continues to have a positive impact on GDP growth (European Union, 2024). Labour cost in Europe is increasing, Italy steadily remains below the EU average. For the sector of human health and social work the labour cost index was even negative for some of the quarters of the past years. In addition, the hourly labour cost in Italy is still around 25% lower than in neighbouring industry countries. This could present itself as an opportunity for producing in house rather than buying from a near foreign EU-country in western Europe (Trading Economics, 2024).

## Social

Italy has one of the oldest populations in Europe, with a growing demand for healthcare services, particularly for elderly care, chronic disease management, and prevention. The Santagostino could benefit from this demographic shift by offering geriatric services, chronic disease management, and preventive care. Indeed, international statistics highlight the ongoing aging of the population: in the OECD area, the share of people aged 65 and over has increased from 7.6% in 1950 to 18% in 2022, with a forecast of reaching 26.4% by 2060. Italy, at 23.9%, has a value significantly higher than the OECD average (second only to Japan, with 29%), which is expected to rise to 33.4% by 2060. In the OECD area, life expectancy at birth has increased by over 10 years between 1970 and 2022, and in Italy it stands at 82.6 years, with a birth rate of 1.25 children per woman, one of the lowest in the world. The early data for 2023 suggest an overall revenue growth of +5.5% for the examined private operators, with different variations across sectors: -4.0% for diagnostics, +4.1% for rehabilitation, +5.7% for hospital care, and +14.0% for operators of elderly care facilities, with the return to full occupancy of Italian nursing homes (RSA) expected by 2024 (Area Studi Mediobanca, 2024). The increasing awareness of health and wellness among the population is driving demand for preventive medical services. More people are seeking regular health check-ups, screenings, and treatments focused on maintaining a healthy lifestyle, which could benefit the center. There is a growing trend toward digital health solutions such as telemedicine, online consultations, and digital management of health records. Santagostino could attract younger patients by adopting these technologies and offering virtual care options.

## Technological

Telemedicine technologies, such as remote consultations and online health management tools, are a growing trend. By embracing telemedicine, Santagostino could expand its services, improve

patient access, and optimize operational efficiency. The use of AI for diagnosing diseases, managing patient data, and optimizing care pathways is becoming increasingly common. By adopting these technologies, the center could improve the quality of care and reduce operational costs. Protecting sensitive patient data is a top priority. Compliance with data privacy regulations, such as the EU's GDPR, is critical for maintaining patient trust. Investments in cybersecurity and data protection technologies will be essential for ensuring patient confidentiality and meeting legal requirements. The acceptance of technology among the public is increasing steadily, making the use of the applications mentioned above as well as the use in supported diagnosis and treatment more socially acceptable.

## Legal

Healthcare laws that govern licensing, medical practices, and professional responsibility are key. Changes to these laws could affect the way Santagostino operates, especially with respect to compliance, medical standards, and service offerings. Companies in the healthcare sector are obliged to send to the General Directorate of Medical Dispositive and Pharmaceutical Service a declaration concerning expenses for promotional activities plus a contribution payment of 5.5% of the expenses<sup>14</sup>. As for medical devices, they fall under the 2017/745/EU and 2017/746/EU regulations<sup>15</sup>, and to be placed on the market they must have the CE marking (declaration of conformity with health and safety requirements) and be registered with the Ministry of Health (MarcaturaCE, 2024). Laws around data protection, particularly GDPR in the European Union, impose strict requirements on how patient information is collected, stored, and processed. Any changes in privacy legislation could require the center to update its data management practices. Law 675, by stipulating that personal data should be disclosed to the individual only through a doctor, allows for this intermediary function to be carried out in several ways (GPDP, 1997):

- a) by handing the data over to the trusted doctor, who will then inform the individual.
- b) by providing an oral explanation by a doctor designated by the laboratory or the healthcare entity responsible for processing the relevant personal data.
- c) by providing a written judgment from the doctor designated by the laboratory or the healthcare entity responsible for processing the relevant personal data.

Legal frameworks surrounding insurance policies and malpractice liability are important for healthcare centers. The center needs to stay informed about any changes in insurance policies, liability laws, and the legal responsibilities associated with providing medical care.

## Environmental

Growing environmental concerns are influencing the healthcare sector, including the adoption of sustainable practices. Santagostino might face pressures to adopt green initiatives, such as energy-efficient buildings, waste reduction, and eco-friendly medical supplies. The increasing awareness of the link between environmental factors and health (e.g., pollution-related respiratory or cardiovascular diseases) might lead to a greater demand for services that address the health effects of environmental issues. The center could explore opportunities in environmental health and wellness services. Healthcare institutions are under pressure to reduce waste, use resources efficiently, and adopt eco-friendly practices. Santagostino may need to comply with new

regulations and adopt practices to reduce its environmental footprint, such as recycling and energy conservation. The current regulations on waste management consist of "self-executing" EU regulations (such as those on classification) and national provisions implementing the corresponding EU directives. At the national level, the key reference legislation for waste management is represented by Legislative Decree 152/2006 (the so-called "Environmental Code"), a change in the law could affect Santagostino behaviour (Rete Ambiente, 2024). Political decisions related to health crises, such as the COVID-19 pandemic, have a direct impact on healthcare operations. Government decisions on lockdowns, medical protocols, and healthcare service access could affect Santagostino in terms of patient volume and operational adjustments. Covid-19 pandemic has had a strong impact on high-tech companies: in Italy, aerospace, ICT, pharmaceutical, biomedical, IT companies have experienced an average decline of 2.3% but with a 45% share of those in growth (ISTAT, 2022). Nowadays companies aim at keeping their carbon footprint as low as possible to conserve a positive image in the public eye. This factor has to be respected in all areas of operation, as it is currently part of annual reports. This might affect operation in setting up business for Santagostino in the plantar industry, considering activities such as production and logistics. Relying on sustainable practices could also yield a positive effect on economic factors, not just for public image reasons.

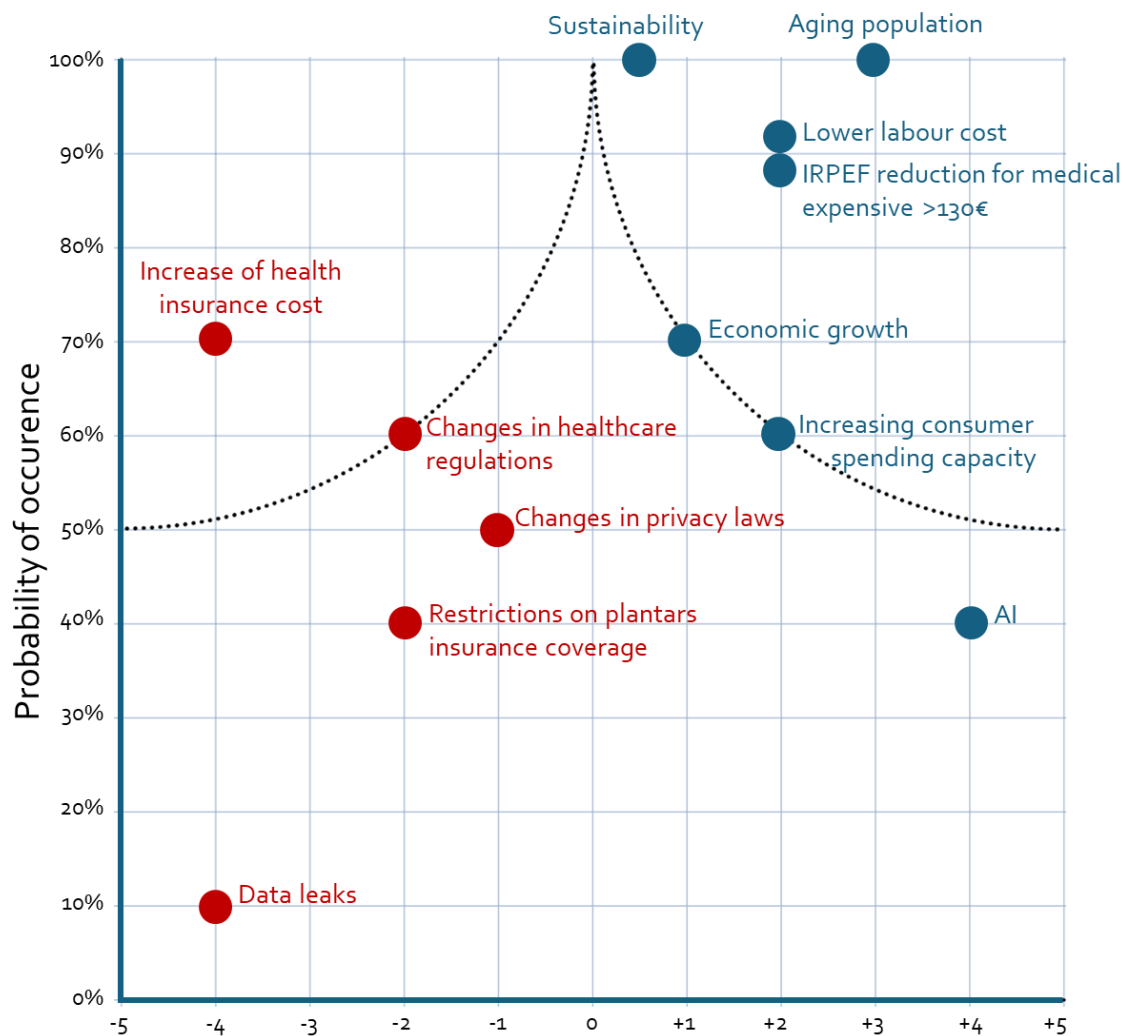


Figure 4: Estimation of the impact of events emerging from the PESTLE analysis

## 5 forces analysis

### Bargaining Power of Suppliers

Market concentration depends on the number and diversity of suppliers. If the company uses high-quality and specific materials and technologies for custom plantars, such as medical-grade foams, viscoelastic materials and 3D printers, it may rely on a few suppliers with limited alternatives, increasing the bargaining power of suppliers. If the company uses more generic materials for generic plantars, there may be many possible suppliers, decreasing the bargaining power of suppliers. Product characteristics depends on the characteristics of the raw materials and technologies. The more advanced the materials and technologies are the higher the dependence on specialized suppliers, increasing their bargaining power.

For advanced technology and materials there are probably long-term contracts with the suppliers and high switching costs for companies. That is because training and equipment adjustments require significant investment in time and resources. These factors increase the bargaining power of suppliers. On the other hand, if companies work with more standard materials and technology, it is probably easier to substitute their suppliers without massive losses. That reduces the bargaining power of suppliers. In some cases, manufacturers can invest in producing certain materials or even develop proprietary software to reduce dependence on external suppliers. However, this option is typically expensive and only feasible for larger companies with substantial capital, which can reduce suppliers' power over time.

Overall, suppliers of specialized materials and advanced technologies for custom plantars have **moderate-high** bargaining power. On the other hand, suppliers of standard materials and technologies for generic plantars possess **moderate-low** bargaining power.

### Bargaining Power of Buyers

The buyers are end consumers (patients) who purchase for personal use as well as other healthcare providers. Products recommended by healthcare providers are seen as the most trusted options, and their decisions are based largely on product efficacy, clinical validation, regulatory compliance as well as their experience with specific products creating a significant bargaining power for them. Consumers are typically more price-sensitive when purchasing products like medical insoles, especially if they are required to pay out-of-pocket or when insurance does not cover these costs. Given the significant price variation between off-the-shelf plantars and customized plantars, consumers will often compare different options, seeking the best value for their money. The availability of alternatives further enhances the bargaining power of end consumers. While healthcare professionals may influence the decision to purchase medical plantar products, consumers are often given a range of options, particularly for less complex products.

Overall, the bargaining power of buyers in the plantar industry is **moderate to high**, with significant power, especially in the mass-market segments where product differentiation is **low**, substitutes are readily available, and price sensitivity is **high**. In specialized markets, such as custom insoles, buyers' bargaining power is generally **low** due to the specific needs of customers.

### Threat of New Entrants

The barriers to entering the plantar device industry are relatively moderate to high. New entrants must have specialized knowledge in foot anatomy and biomechanics to design effective products like insoles. Additionally, the industry is highly regulated, requiring compliance with strict medical device certifications, which can be costly and time-consuming. Entering the market requires substantial capital investment in both manufacturing and technology. The production of medical-grade plantar devices often involves advanced machinery and materials, such as 3D printing for custom orthotics or specialized pressure mapping systems. New entrants must either develop or gain access to such technology, which can significantly increase upfront costs. Brand reputation is crucial in the plantar device industry, as consumers rely on trusted names for products that impact their health. Established brands dominate the market, and it can be difficult for new entrants to build the same level of trust and recognition without significant investment in marketing and customer education. Building strong relationships with healthcare providers is key to success in the plantar device market. Podiatrists and orthopaedic specialists often recommend specific brands to patients. New companies will need to establish partnerships with these professionals.

These four factors combine to make the threat of new entrants in the plantar device industry **moderate** to **low** for generic plantars and **moderate** for custom ones.

### Threat of Substitute

Pre-made plantars available in pharmacies, in sports stores or online. They could represent a threat mainly for generic plantars and not for the custom ones. That's because they are less effective for consumers with special needs, who probably prefer to rely on specialised clinics even if spending more. On the other hand, they could be a valid substitute for consumers with less complex requirements, because of an easier purchase, a good availability and accessibility on the market and a lower price. Some technologies as ergonomically designed shoes with built-in support or similar could represent a threat to plantars that promise similar benefits, such as general support. They could be produced by more famous brands of shoes, with more availability, that can attract many customers, even though the price may be high. However, they probably couldn't threaten companies that concentrate on consumers with specific diseases, that would need a personalised fit.

Overall, the threat varies depending on the target market; it is **high** for generic plantars but **medium-low** for orthopaedic or custom ones.

### Internal rivalry

The plantars market comprehends companies that produce both specialised and generic plantars. Companies offering custom orthopaedic plantars face strong direct competition with many other similar companies. Companies that produce generic plantars face competition not only from direct competitors but even from shoe manufacturers that integrate insoles into their footwear, which may also have a bigger size. This market is growing due to increased awareness of foot health, slightly reducing competitive pressure. The competition is based on quality, materials, technology and customization. Differentiation in these categories could reduce the competition. Therefore, the competition is higher for generic plantars that are similar to the ones produced by the



competitors, while is lower for the customized ones, that have unique characteristics. Companies in the custom plantar market, often invest in specialized technology that may not be easy to sell off or repurpose, since it may be specific for orthotic applications. Moreover, there are some high fixed costs regarding production facilities, R&D investments, and fixed labour costs that can be significant in this industry, leading to a costly exit. It is also important to consider that companies in this market build strong relationships with medical professionals, podiatrists and direct customers who depend on their expertise. Therefore, leaving the market could damage the company's reputation also in other healthcare markets, creating a form of exit barrier as companies feel pressure to maintain these relationships. Lastly, there are some legal obligations regarding custom-made medical device laboratories that may complicate their conversion in the production of other devices (DM 332/99). In conclusion, exit barriers in this market tend to be moderate to high. Some consumers, especially those with specific foot diseases, may show strong brand loyalty to a custom plantar provider that meets their needs well. Once customers find a brand that fits comfortably and relieves pain, they may be reluctant to switch, creating low but significant switching costs. This loyalty can protect a company's customer base but also intensifies competition, as brands try to attract and retain these valuable long-term customers. On the other hand, many consumers are highly price-sensitive, especially when they don't have specific medical needs and when they have to buy foot support products that aren't covered by insurance. So, they are likely to choose cheaper products, pushing companies to offer competitive pricing and discounts. Moreover, with the advancements in technology, consumers want companies to be quick in producing and delivering custom plantars. This demand for convenience and speed intensifies rivalry, as companies try to offer faster delivery times and easy customization processes. In conclusion, the intensity of internal rivalry is **moderate** for custom plantars, with competition based on quality and loyalty, while it is **moderate-high** for generic plantars, with competition based on pricing and availability.

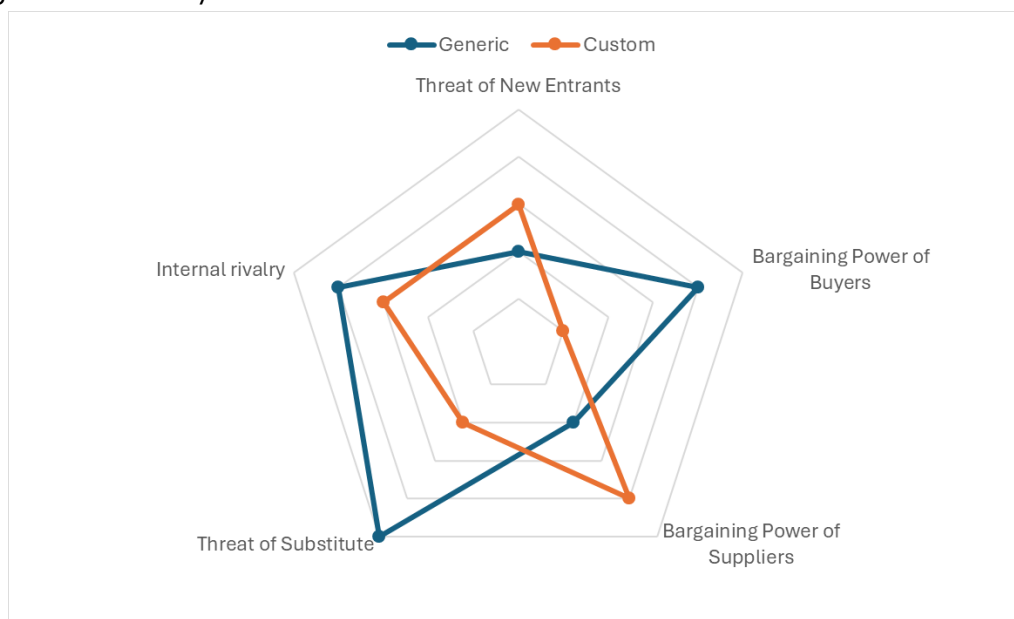


Figure 5: 5 forces analysis

## Value, Vision and Mission

### Value

**Care:** attention to patients, administrative staff and specialist, promoting a culture of health through scientific dissemination and social solidarity projects.

**Transparency:** sharing company data, public price lists and listening to patient needs to establish a relationship of trust.

**Accessibility:** offering affordable healthcare services, with easily accessible locations and an efficient organisation model.

**Innovation:** use of advanced technologies to improve patient service, such as online reservations, fast check-in and shared electronic medical record.

### Vision

Be the best health partner in Italy: one click away, within 20 minutes of traveling and a few days of waiting, on all services that can be provided without a hospital bed. For everyone.

### Mission

Help everyone to be healthy.

## Porter's value chain – SCENARIO 1

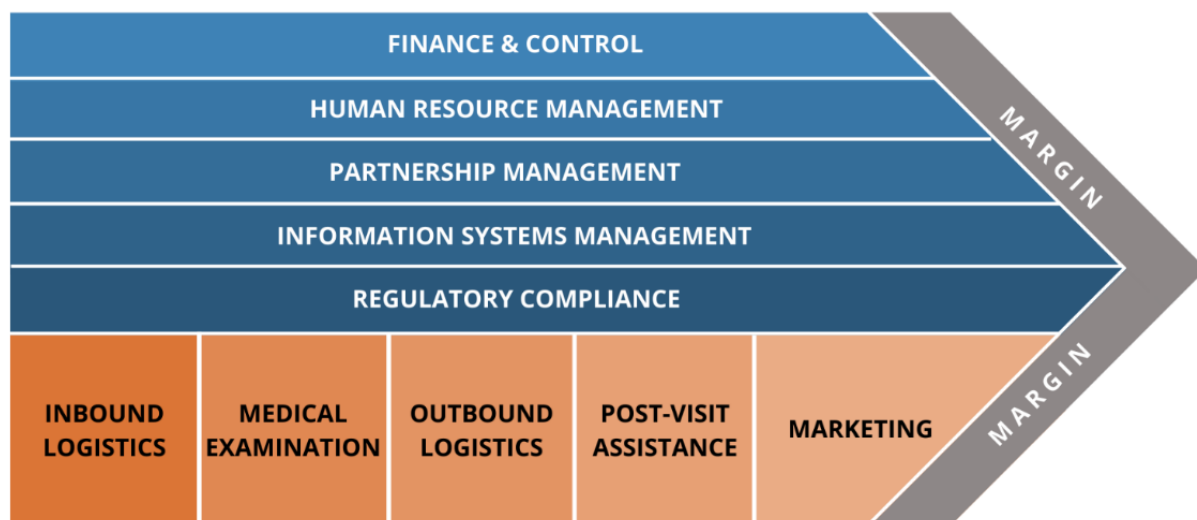


Figure 6: Porter's Value Chain - Scenario 1

### Primary Activities

- **Inbound Logistics:** includes appointment and medical examinations managing system across its 43 centers (all over Italy), it ensures minimal wait times and maximizes patient satisfaction. By a check-in, in which the clinic collects necessary medical information, healthcare professionals are allowed to have access to relevant patient history and needs.
- **Medical Examination:** involves specialist medical consultations provided by highly qualified podiatrists and orthopedists. Patients receive accurate diagnoses and personalized prescriptions that address their specific conditions. Additionally, the clinic offers digital

healthcare support, allowing patients to send photos of their orthotics for remote evaluations. This service provides timely advice on plantar wear status or the need for follow-up without requiring an in-person visit.

- **Outbound Logistics:** includes providing patients with their prescriptions and ensuring they have all the necessary documentation to obtain their orthotics elsewhere. Santagostino offers clear guidance on how and where to acquire the prescribed orthotics from external providers, assisting patients through detailed instructions.
- **Post-visit assistance:** the clinic remains accessible for additional consultations and clarifications.
- **Marketing:** focuses on effectively promoting Santagostino's services to reach as many people as possible, aiming to increase the number of visits and boost revenue. This involves communicating the expertise and competence of the medical staff, emphasizing the high-quality medical examinations provided. Digital campaigns are utilized to raise awareness about the importance of foot health and the benefits of using orthotics, targeting a broad audience that includes the general public, the elderly (considering Italy's aging population), and amateur athletes.

### Support Activities

- **Finance and Control:** includes managing Santagostino's financial resources to ensure sustainable operations and support strategic objectives, such as budgeting, financial planning, and the careful monitoring of revenues and expenses to maintain profitability and allocate resources effectively.
- **Human Resource Management:** is dedicated to recruiting, developing, and retaining the qualified personnel essential for delivering high-quality healthcare services. This involves hiring skilled medical professionals such as podiatrists and orthopaedists who perform medical examinations, as well as administrative staff who handle inbound logistics like appointment scheduling and patient intake, and staff responsible for outbound logistics, post-visit assistance, and executing marketing initiatives.
- **Partnership Management:** involves building strong relationships with orthotic producers to effectively guide patients in obtaining their custom orthotics. It includes a rigorous selection procedure where partners are chosen based on their certifications, industry experience, material quality, and customization capabilities.
- **Information Systems Management:** developing and maintaining the IT infrastructure that support appointment scheduling, medical data collection, patient communication, and digital healthcare services.
- **Regulatory Compliance:** involves ensuring that all operations of Santagostino adhere strictly to healthcare regulations, legal requirements, and industry standards. This encompasses compliance with patient privacy laws (GDPR) and regulatory requirements related to the physical centers (health and safety standards).

## Unique Value Offered

In **SCENARIO 1**, Santagostino delivers unique value through its accessibility, with 32 centers (in Milan hinterland) ensuring broad population coverage. Medical excellence is provided by specialized doctors offering accurate diagnoses and personalized prescriptions, maintaining high standards of care. Digital integration enhances the patient experience through remote support, allowing patients to send photos of their orthotics for advice on wear and replacement needs, and telemedicine, facilitating follow-ups and reducing the need for in-person visits while improving convenience. Finally, the patient experience is further elevated by tailored assistance focusing on individual well-being and convenience, ensuring that while orthotics are obtained externally, patients are guided and supported with clear information and assistance.

## Porter's Value Chain - SCENARIO 2

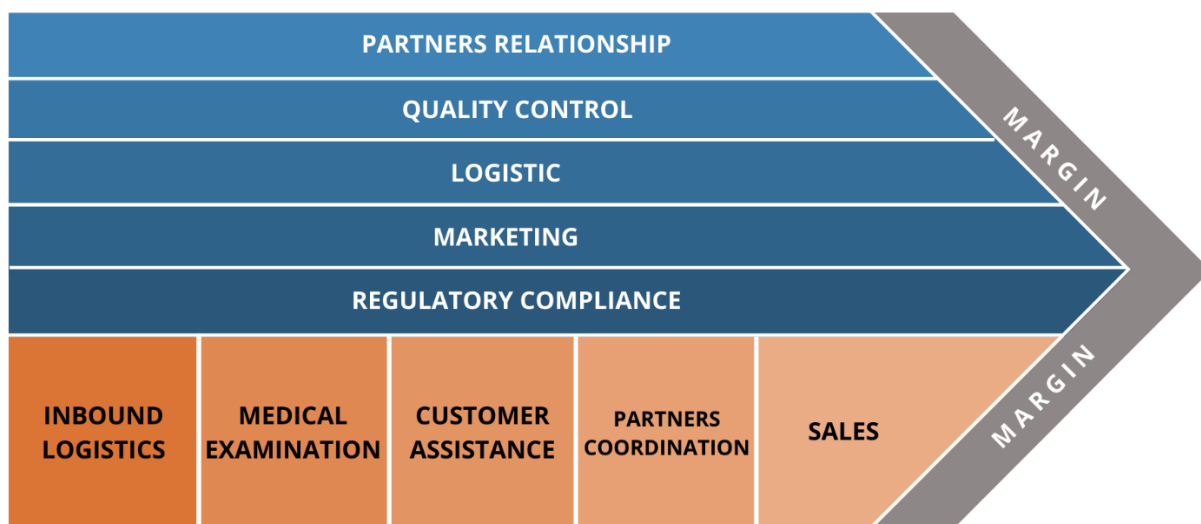


Figure 7: Porter's Value Chain - Scenario 2

## Primary Activities

- Inbound Logistics: described in Porter's value chain – **SCENARIO 1** (Primary Activities).
- Medical Examination described in Porter's value chain – **SCENARIO 1** (Primary Activities).
- Customer Assistance: in addition to what was discussed in **SCENARIO 1**, for customers purchasing orthotics without a prior visit, dedicated assistance is provided to ensure accurate sizing, adjustments if needed, and guidance on how to maximize the product's benefits.
- Partners Coordination: involves selecting reliable orthotic manufacturers that meet strict medical and quality standards. It includes streamlining order management by efficiently transmitting prescriptions and specifications to minimize delays and errors. A structured feedback loop is established to share patient and clinician insights with producers, promoting continuous product improvement and innovation. Additionally, Service Level Agreements (SLAs) are negotiated and managed to define quality benchmarks, production timelines, and accountability measures, ensuring consistent and reliable service.
- Sales: focuses on expanding the offering of orthotics beyond patients who undergo medical examinations at Santagostino to include individuals already in possession of a valid

prescription from other providers. The process ensures efficient prescription verification, making it simple for external patients to access the service; dedicated sales channels, both in-person and online, facilitate convenient ordering, complete with clear instructions for submitting measurements and specifications, ensuring a seamless and accessible experience for all customers.

### Support Activities

- **Partners relationship:** includes building strong and strategic partnerships with orthotic manufacturers that ensure high quality standards. Mutually beneficial agreements are negotiated to define collaboration terms, pricing, timelines, and quality benchmarks, while including mechanisms for dispute resolution. These partnerships are cultivated as long-term relationships focused on shared goals such as innovation, continuous improvement, and scalability.
- **Quality control:** involves the continuous monitoring of partner performance through key metrics such as delivery times, defect rates, and patient satisfaction. Regular evaluations allow for the identification of any deviations from agreed benchmarks, enabling prompt corrective actions.
- **Logistic:** focuses on ensuring the seamless flow of materials, information, and products between Santagostino and its external partners. This includes the efficient transmission of orthotic prescriptions and specifications to manufacturers, as well as the timely delivery of finished products to the medical centers. The process is designed to support just-in-time production, as every plantar is different.
- **Regulatory Compliance:** described in Porter's value chain – **SCENARIO 1** (Support Activities).
- **Marketing:** highlights the versatility and accessibility of Santagostino's orthotic services, focusing on the option to provide orthotics independently of medical examinations.

### Unique Value Offered

In **SCENARIO 2**, Santagostino offers a unique value proposition by integrating expert medical examinations and orthotic provision in a single convenient location, addressing a significant patient pain point by eliminating the need to visit multiple providers. With its network of centers it ensures convenience and accessibility, delivering seamless healthcare services that enhance patient satisfaction. The inclusion of digital healthcare services enables comprehensive patient support, such as remote evaluations of orthotics, improving post-visit engagement and care quality. Additionally, by serving patients who already have a valid prescription but did not undergo their examination at Santagostino, the clinic achieves market expansion, reaching a broader audience and increasing revenue opportunities.

However, a scenario should be considered where not all the prescriptions from the centers get turned into sales, for costumers deciding against buying plantars directly from Santagostino. Moreover, by establishing an exclusive contract with a supplier that includes a guaranteed minimum purchase volume, we can secure discounted prices that further decrease as the order size increases. This approach allows us to offer patients high-quality insoles from a reputable

manufacturer at a lower price than they would pay directly to the same supplier. This integrated approach, supported by partnerships with reputable orthotic manufacturers, allows Santagostino to differentiate itself in the market through quality assurance, patient convenience, and long-term relationship building, solidifying its position as a trusted healthcare provider.

### Porter's value chain - SCENARIO 3

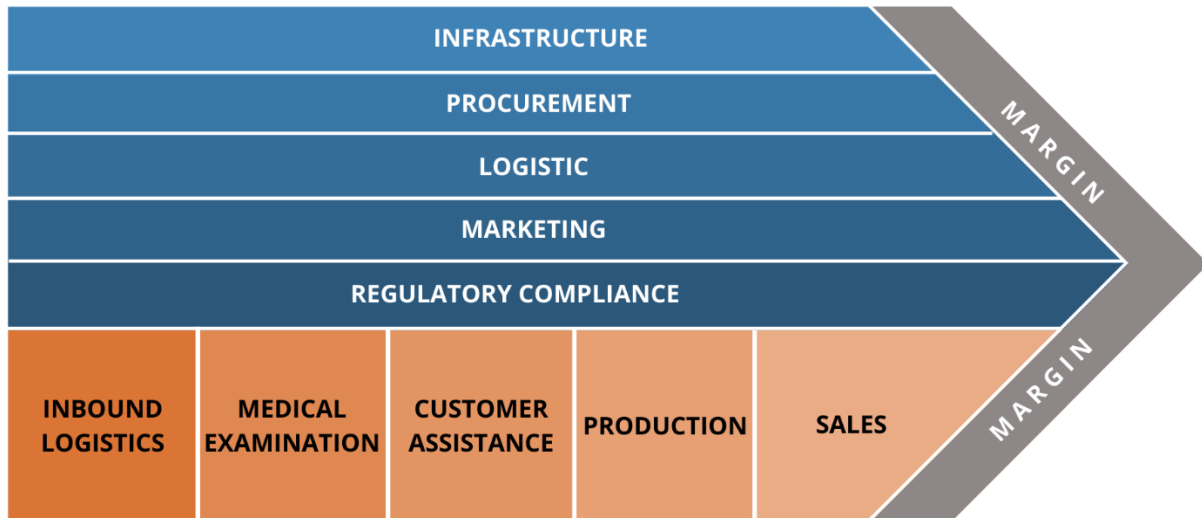


Figure 8: Porter's Value Chain - Scenario 3

#### Primary Activities

- Inbound Logistics: described in Porter's value chain – **SCENARIO 1** (Primary Activities).
- Medical Examination: described in Porter's value chain – **SCENARIO 1** (Primary Activities).
- Customer assistance: described in Porter's Value Chain - **SCENARIO 2** (Primary Activities).
- Production: Santagostino takes full control of orthotic manufacturing, this includes producing orthotics not only for patients examined within its centers but also for those with prescriptions issued by external medical professionals. By leveraging in-house production capabilities, the clinic ensures strict quality control and the ability to customize orthotics to meet the specific needs of individual patients. Additionally, Santagostino could expand its operations by supplying orthotics to patients from other healthcare facilities, further diversifying revenue streams and reinforcing its position as a trusted provider of high-quality, "Made in Italy" orthotics.
- Sales: described in Porter's Value Chain - **SCENARIO 2** (Primary Activities).

#### Support Activities

- Infrastructure: focuses on establishing and maintaining a state-of-the-art production laboratory for orthotics. This facility is equipped with advanced technology and tools necessary to produce high-quality, custom-made orthotics that meet strict medical and durability standards. The infrastructure could support scalability to accommodate increased demand, including orthotics for external prescriptions and supplies to other healthcare facilities.

- **Procurement:** includes sourcing high-quality raw materials required for the in-house production of custom orthotics. This involves identifying and establishing partnerships with reliable suppliers who can consistently deliver materials that meet medical and durability standards. In addition, the procurement process incorporates environmental initiatives, including the recovery and recycling of materials from replaced orthotics, given that patients typically need to replace their orthotics at least once a year, this approach reduces waste and aligns with Santagostino's commitment to sustainability.
- **Logistic:** described in Porter's Value Chain - **SCENARIO 2** (Support Activities).
- **Marketing:** described in Porter's Value Chain - **SCENARIO 2** (Support Activities).
- **Regulatory Compliance:** plays a critical role in ensuring that both the production processes and the laboratory operations adhere to stringent industry standards and legal requirements. The laboratory must comply with workplace safety regulations, hygiene protocols, and environmental laws to guarantee safe and sustainable operations.

### Unique Value Offered

In **SCENARIO 3**, Santagostino delivers a unique value proposition by fully integrating the medical examination, production, and delivery of custom orthotics within its organization. This vertical integration ensures maximum quality control, allowing the clinic to oversee materials, production processes, and final products, guaranteeing orthotics that meet the highest standards of functionality and durability. Patients benefit from an enhanced experience, receiving all services in one place, which boosts satisfaction and loyalty by eliminating the need for external coordination. The extensive network of centers in Milan hinterland provides convenience, allowing patients to choose the most accessible location, attend follow-up visits near their residence or workplace, and rely on the availability of a center in case of emergencies. Furthermore, innovation and customization become key strengths, as in-house production allows for the development of new materials and designs, delivering personalized solutions tailored to individual needs. Economies of learning could be exploited adopting in-house production, making the whole process more efficient the longer the longer it is carried out. This model also improves cost efficiency and profitability by eliminating outsourcing expenses and capturing full revenue from orthotic sales. Finally, Santagostino demonstrates environmental responsibility through sustainable practices, including eco-friendly materials and recycling worn-out orthotics, appealing to environmentally conscious patients and reinforcing its commitment to sustainability.

### Strategic alternatives: quality-driven differentiation focused on local presence

The internal production of orthotics at Santagostino's laboratories represents a significant value activity. By managing production internally, Santagostino ensures full control over product quality, leading to higher standards and the ability to provide customized solutions that meet the specific needs of each patient. This results in functional benefit and superior outcomes in terms of both functionality and comfort, enhancing the overall product quality.

The integrated service of medical examination and orthotic supply eliminates the need for patients to visit multiple providers. This seamless approach not only saves time but also reduces stress for patients, offering them a comprehensive, all-in-one solution. The convenience of receiving both the specialized medical examination and the orthotic device in a single location improves patient satisfaction and streamlines their healthcare journey.

Santagostino also offers robust after-sales support, ensuring continuous patient assistance through digital platforms. This includes allowing patients to send photos of their orthotics for wear monitoring and scheduling follow-up appointments as needed. This ongoing support guarantees that patients receive comprehensive care even after the delivery of the product, contributing to an improved patient experience.

These activities significantly contribute to the value offered by Santagostino in terms of functional benefit and differentiation. The internal production guarantees superior quality, while the combination of local production and the widespread presence of centers ensures reduced waiting times. The improved patient experience is further supported by the "one-stop" service model and the availability of more than 30 centers, providing easy and convenient access for follow-ups and addressing any issues promptly.

Santagostino's unique selling proposition lies in its extensive presence throughout the Milan area. The differentiation strategy focuses on the ability for patients to conveniently reach one of the many centers, allowing them to conduct follow-ups at any location and ensuring that they have a familiar point of contact in case of any issues. Having already conducted the podiatric examination, Santagostino is fully aware of each patient's history, making any subsequent visits smoother and more effective.

The extensive presence is what truly distinguishes Santagostino from its competitors. While Auxologico, Centro Medico Ambrosiano, and Gruppo San Donato also provide an integrated service in the Milan area, they do not match the capillarity offered by Santagostino. On the other hand, Humanitas only offers specialist consultations and directs patients to external technical centers for orthotic production, such as ORTesys, Centro Ortopedico Universo, and Orthobit, which provide internal production but lack the integrated service and widespread accessibility that Santagostino offers.

The differentiation strategy implemented by Santagostino is particularly effective across the identified market segments. For patients with no specific medical conditions and athletes, the widespread availability of centers means they can conveniently access any location, whether it is near their home or workplace, providing maximum flexibility. This flexibility ensures that patients can easily fit follow-up visits into their busy schedules, making it more likely for them to complete their treatment plan and benefit from ongoing care. For elderly patients, the proximity of a center to their residence is a key advantage, the possibility to return for any necessary follow-ups without the need for assistance or transportation from others greatly enhances their autonomy and comfort. This focus on accessibility and convenience across different market segments enhances the overall value proposition and makes Santagostino's services particularly appealing to a broad range of patients.



## SWOT analysis



Figure 9: Strengths, weaknesses, opportunities and threats of the project.

### Strengths

1. Enhanced patient experience and customer loyalty: providing all services under one roof increases convenience and patient satisfaction. An integrated, high-quality experience can increase patient loyalty and foster positive word-of-mouth referrals.
  - a. Dedicated customer assistance: personalized support for customers purchasing orthotics ensures accurate sizing, necessary adjustments, and guidance on product use, fostering customer loyalty.
  - b. Quality control mechanisms: regular evaluations and feedback loops promote continuous product improvement and innovation.
2. Expanded market reach and revenue diversification: by offering orthotics to patients who already have valid prescriptions from external providers, Santagostino attracts a broader customer base beyond those who undergo medical examinations at its centers. The additional income from orthotics sales to external patients enhances overall profitability and financial stability.

Then, specifically for **SCENARIO 2** (partnering with an external producer):

3. Resource optimization: leveraging existing infrastructure without significant investment in production facilities reduces financial risk while expanding services.

While, for **SCENARIO 3** (opening Santagostino's plantar lab):

3. Integration: complete control over the entire orthotics production process enhances quality control and operational efficiency.
  - a. Quality assurance: in-house production ensures that products meet high medical standards and durability requirements.
  - b. Innovation and customization: ability to develop new materials and designs tailored to individual patient needs.
4. Cost efficiency: eliminating outsourcing costs potentially improves profit margins.

## Weaknesses

1. Logistical challenges: in **SCENARIO 2**, it is necessary to coordinate with the external production partner for delivery to the various clinics where the orthotics will be distributed. In **SCENARIO 3**, on the other hand, the orthotics produced internally in the Milan lab will need to be delivered to clinics in other areas of Italy or within the city of Milan itself.
2. Customer service issues: meeting the expectations of customers not familiar with the clinic's processes may be challenging, potentially impacting satisfaction.
3. Resistance to change: the physicians, used to recommending a specific producer to patients, may not accept this change.

Moreover, for **SCENARIO 2**:

4. Dependence on external partners: reliance on third-party manufacturers may lead to quality control issues or supply chain disruptions beyond the clinic's control.
5. Limited control over production: lack of in-house manufacturing reduces the ability to oversee production processes and fully customize products to meet specific patient needs.

While, for **SCENARIO 3**:

4. High initial investments: significant capital is required to establish and maintain production facilities.
  - a. Increased operational costs: additional expenses for personnel, training, maintenance, and equipment upgrades.
  - b. Financial exposure: high investments increase financial risk if sales targets are not met.
5. Increased operational complexity and lack of manufacturing experience: managing in-house production adds complexity to business operations.
  - a. Regulatory compliance burden: greater responsibility in adhering to production, safety, and environmental regulations.
  - b. Inventory management: need for effective systems to manage stock levels and minimize waste.
6. Supply chain dependency: risks associated with the availability and quality of raw materials from suppliers.

## Opportunities

1. Aging population: the increase in the elderly population will raise the number of potential customers.
2. Reduction in IRPEF: customers could claim part of the cost of the orthotics as a medical expense on their tax returns, thus reducing the amount of income subject to IRPEF tax.
3. Lower labour cost: the lower labor cost in Italy, compared to other European countries, can represent an opportunity when compared to the option of producing orthotics abroad.
4. Economic growth and increase in spending capacity: economic growth leads to increased spending on healthcare products, including those that improve quality of life, prevent injury, or alleviate existing conditions as plantars.

## Threats

1. Increase in health insurance cost: there could be a potential challenge if, due to the increase in costs, fewer people subscribed to health insurance, as the patient would have to bear the entire cost of purchasing the orthotic.
2. Change in healthcare regulations: evolving healthcare regulations can impose stricter compliance requirements, increasing operational costs and potentially delaying product approvals, impacting the company's ability to bring products to market quickly.
3. New Entrants: the entry of new competitors, particularly those with innovative technologies or lower-cost production, can disrupt market dynamics and erode the company's market share.
4. Bargaining Power Abuse of Suppliers: a high dependency on key suppliers for materials or technology could lead to unfavorable terms, price hikes, or supply chain disruptions, affecting production and profitability.
5. Internal Rivalry: intense competition within the plantar industry can drive price wars, aggressive marketing, and higher investments in innovation, putting pressure on profit margins and resource allocation.

## CHAPTER 3: Marketing

### Market analysis

#### Trend

The global shoe insoles market is experiencing steady growth, projected to expand from USD 5.97 billion in 2023 to USD 9.41 billion by 2030, at a CAGR of 4.7%. Several factors contribute to this growth, particularly the increasing demand for customized insoles due to rising participation in sports and athletic activities. Consumers are also seeking insoles that offer a combination of comfort, support, and style, which is driving innovation in materials and designs. Additionally, the growing prevalence of diabetes is influencing demand for diabetic-friendly insoles.

In Italy, the shoe insoles market generated a revenue of USD 189.4 million in 2023 and is expected to reach USD 255.8 million by 2030, with a steady growth rate of 4.4% CAGR.

Italy represents 3.2% of the global shoe insoles market, contributing to the overall expansion. Within Italy, orthotics remains the leading segment, driven by demand from medical conditions such as diabetes and arthritis. The rise of 3D printing technologies is also making waves in both the global and Italian markets. These innovations allow for more customized insoles, tailored to individual foot structures and medical needs, providing growth opportunities for manufacturers who can leverage advanced production techniques (Grand View Research, 2023), (Grand View Research, 2024), (Fortune Business Insights, 2024).

#### Know your customer

The main customers for our business are private clients, such as patients, including both adults and children, with medical problems regarding both podiatry and other disease, like diabetes, elderly individuals, people who want to prevent and athletes. For these reasons, our perspective is a "Business-to-Consumer" (B2C) market, characterized by a large number of targets that acquire a small purchase quantity.

With our business idea we could satisfy safety needs, regarding health and well-being. For patients that currently have both medical and age-related foot problems, it can be a solution to reduce physical pain and prevent future worsening. Indeed, insoles distribute weight evenly, reducing pain in feet, ankles, knees, hips and back, and can be customised for specific diseases. Moreover, for individuals focusing on prevention, especially for those who spend long hours standing, it can be a solution to avoid injuries or future problems, since insoles support proper posture and foot placement. It can also respond to athletes' safety needs: repetitive stress on the foot and microtraumas caused by activities that overload the plantar fascia may cause plantar fasciitis. In these cases, insoles can be a solution to prevent and cure this problem. However, for athletes it can also satisfy other types of needs. For people who practice sports in an amateur way, it can satisfy the social need of participating in sports and daily social activities, without physical restrictions. For professional athletes it can satisfy the need of self-actualisation, as it can help them with their ambition to achieve their maximum physical potential (Centro Podologico Magenta, 2015), (Santagostino, 2023).

### Know your market: market demand

Santagostino's potential market is represented by all the potential patients, from 4 to 65+ years old, that may be interested in acquiring insoles, without considering economical or accessibility limits. It includes everyone who may benefit from its products, including both the ones who have an immediate concrete need and the ones who want to prevent. A more restricted market, the qualify market, includes all the market eligible to purchase Santagostino insoles. It includes people who have the awareness of the importance of foot support and the possibility to access to its distribution market. For custom insoles it regards people who have been prescribed to use these products. The available

market tightens the market further, considering the people who have the economic availability and that can purchase Santagostino insoles based on geographical availability. The served market, the one reached by the company's marketing effort, includes people who are aware of Santagostino insoles production, have chosen to use them or received a prescription for these specific products. Considering that Santagostino is an already existing company that provide many medical services and produces also other medical devices, it has a large number of existing patients that could be reached by increasing their awareness of its insoles production. This section is limited by Santagostino production capacity and by the geographical areas that are reached – which are Milano, Monza and surrounding, Bologna and Imola, Bergamo and surrounding, Rome, and Busto Arsizio. In the present moment, the penetrated market is relatively small, because the current insoles production is restricted to a few internal podiatrists that directly produce, in about two or three weeks, the plantars they prescribe to their patients. In addition to these loyal patients, this section of the market could be increased in the next year by changing the production scenario.

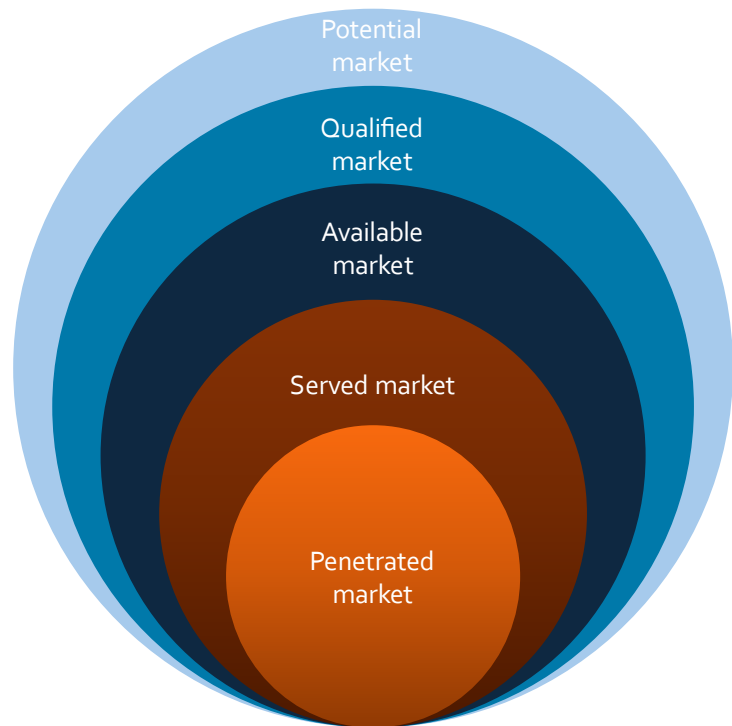


Figure 10: Market demand

## Marketing strategy

### Segmentation

#### Age:

- Children (7-12 years): corrective insoles for developmental issues.
- Teenagers (13-18 years): insoles for athletes or postural problems during growth.
- Adults (19-65 years): insoles for professionals who stand for long hours, athletes, or people with specific conditions like plantar fasciitis.
- Elderly (65+): insoles for arthritis, diabetic foot [source], or mobility issues.

**Lifestyle:**

- Athletes: insoles to enhance performance or prevent injuries.
- Active individuals: insoles for those who walk or stand for many hours a day.
- People with medical conditions: customized insoles for specific medical needs.

**Specific Needs:**

- Custom insoles (tailor-made orthotics).
- Standard insoles (adaptable).

**Usage Frequency:**

- Daily use: for work or clinical needs.
- Occasional use: for sports or specific activities.

**Price Sensitivity:**

- Value-oriented consumers: more affordable but effective solutions.
- Quality-oriented consumers: willing to pay more for customized insoles.

**Specific Medical Conditions:**

- Diabetic foot
- Plantar fasciitis
- Flat feet
- Arthritis

**Targeting**

Santagostino's target includes customers of all ages who need custom-made orthotics. Since the company has a network of outpatient clinics, the orthotics will be produced for any specific pathological condition, both chronic and acute, and will primarily be designed for daily use. In addition to catering to individual health needs, Santagostino is also mindful of price sensitivity, ensuring that its solutions remain accessible to a wide range of customers while maintaining high quality and personalization. In conclusion, our targeting strategy could be defined a Product Specialization strategy, serving all the segments previously presented with our product – insoles – guaranteeing customisation based on specific needs.

**Positioning**

For the product, please refer to CHAPTER 1: Product and Service

Since Santagostino's target audience consists of individuals with pathological conditions or preventive needs, the only possible distribution channel for the orthotic insoles produced is through the clinics where podiatrists and orthopedists examine patients. Furthermore, under Italian regulations, it is the prescribing doctors who must deliver the insoles to their patients, ensuring they provide instructions on proper usage and apply any necessary adjustments to the product.

Santagostino's pricing (price) strategy for its orthotics is designed to offer both value and quality, ensuring accessibility while reflecting the premium nature of the product. The pricing structure caters to a broad range of consumers, from those seeking preventive care to those needing therapeutic solutions, with tailored options that reflect the personalized service provided. By leveraging its digital platforms, Santagostino ensures transparent pricing, making it easy for

consumers to explore options and make informed decisions, reinforcing its commitment to both affordability and expertise.

Santagostino's promotion strategy for its orthotics focuses on building awareness and trust through both B2C consumer interactions and professional networks. By partnering with healthcare professionals like podiatrists and general practitioners, Santagostino fosters recommendations during consultations, positioning the brand as a trusted, expert-backed solution for foot care. The company also leverages owned media, including Santagostino Video, Santagostino Magazine, and Santagostinopedia, to provide valuable educational resources that inform both consumers and healthcare professionals, facilitating the learning and purchasing process for orthotics. Additionally, Santagostino uses advertising materials such as brochures and posters in waiting rooms, ensuring brand visibility to a broad audience of potential customers during their consultations. This B2C-focused strategy combines professional endorsements with accessible online content and in-clinic visibility, enhancing customer engagement and trust.

## CHAPTER 4: Financial Analysis

For the financial analysis a few assumptions must be made before calculating the profit or net present value.

As baseline for the sales, the prescribed plantars in the period from Oct. 1<sup>st</sup> 2023 to Sept. 30<sup>th</sup> 2024 are considered. In this time interval a total of 921 plantars were described in clinics of Santagostino. From this total number 252 of them were in the category mono-density. 237 of the bi- and tri-density categories were prescribed respectively. Finally, 195 recipes for specialised plantars were handed out. For more detailed information about prescription data have a look at [Appendix 1 – Prescription Data](#). The ratio of planter type to the overall number is considered as static going forward in this analysis due to the lack of other data suggesting a different approach. Thus, every number of sold plantars is always broken down into these different types by the same ratio that is an estimation for the need of a specific planter type.

Following further assumptions are made:

- The initial investment in equipment and software is gathered from Santagostino's desired machinery and applications. The data and cost were provided by the company.
- Material cost: A list of different materials needed to construct a planter was provided along with their prices. For each type of planter, various raw materials with different characteristics can be used. It is not possible to define a priori which specific material is going to be applied for each type of planter due to the varying needs of each patient. Therefore, a minimum- and maximum material cost for each planter type are determined. The actual cost applied in the analysis is obtained by taking the mean of minimum- and maximum cost.
- Shipping cost: A shipping cost of 30€ per planter was considered in the analysis. This includes the delivery of the product to the desired clinic for pick-up as well as the packaging and logistics surrounding that process.
- Rent: For the rent an amount of 1000€ per month including all additional spending like energy and water is considered for renting a small laboratory for one orthopaedic technician to produce the planters. Additionally, a share of the rooms in the clinics where the measurements for the orthosis are taken is also taken into account with an amount of 500€ per month as part of the cost referring to this specific business segment of Santagostino.
- Maintenance: A maintenance cost for all the machinery of 1000 € per year is assumed.
- Personnel cost: For the personnel, an orthopaedic technician producing the planters must be recognized. Not only their annual salary, but also the employer's contribution to social security are arising costs related to them. Hiring one has an estimated impact of around 27300€ a year. Moreover, a podiatrist taking foot measurements is also accounted for by assuming a workload of around an hour at a price point of 54.7 €, the average hourly salary, per planter. This includes the sizing and fitting as well as the follow up consultations.
- Marketing cost: A marketing cost of 5000€ a year is considered to mainly produce content for the owned media by Santagostino.



- Inflation: All the costs that accumulate over a year increase by an average inflation of 2.5% per year.

All assumptions made above are well described in [Appendix 2 – Cost Structure](#).

As selling price the recommended retail price of the external producer was taken. It is more expensive than the current state at Santagostino, but includes the measurement, delivery, follow-up consultations and the plantar itself. It lies in a range from 240€ to 300€ per pair of plantars.

For the analysis, two different cases are proposed, a pessimistic and an optimistic one. For the pessimistic case, a baseline of 300 sales per year is defined, which equals around a third of prescribed plantars by Santagostino last year. An increase in sales of 10% the base number, so 30 a year, is considered due to ongoing marketing and word of mouth.

The optimistic case starts at a baseline of 600 sales per year, meaning a turnover from prescriptions to sales of around two thirds. Also in this case a growth in sales numbers of 30 a year, so 5% the initial value is taken as assumption.

In order to have a more accurate estimation of the revenue per sold unit, the ratio of each plantar type sold mentioned above is applied to its price. The individual values are added up to obtain a statistic mean number for revenue per plantar sold, which will represent the money made by sale. This process is applied in the same way to the material cost to gain an average of this specific cost per produced unit.

For **SCENARIO 2** the price for a bought plantar from the manufacturer is calculated in a similar way. The yearly cashflow is obtained by adding up all the cost accumulated over a year and subtracting it from the net revenue of selling plantars. The net revenue of one plantar sold can be summarized as the money gained from selling minus all the costs that can specifically be attributed to a single plantar like the working hours of the podiatrist, shipping cost and material cost. The net present value (NPV) is the sum of all the yearly cashflows combined. The entirety of the calculation was carried out without considering taxes since it is part of a bigger company.

While **SCENARIO 3** considers all the costs and assumptions made above, in scenario 2 the costs attributed to producing the plantars are obviously not taken into account. These include, the lab rent, hiring an orthopaedic technician, the material cost and the large initial investment.

Figures 11 – 14 show the trajectory and current values for the NPV and profit for scenarios 2 and 3 for both different cases. For more detailed information please have a look at the tables 1 – 4 into [Appendix 3 – NPV Tables](#) and other information in the appendix.

In terms of break-even analysis, the break-even point when achieved in the first year of operation lies between 742 and 778 plantars sold depending on the mix of materials used. For the most expensive material composition in all orthotic insoles the number is the higher one while for the cheapest material composition, the lower number is applicable. It is important to specify that the material mix does not depend on the producers' preferences, but on the individual needs of each patient.

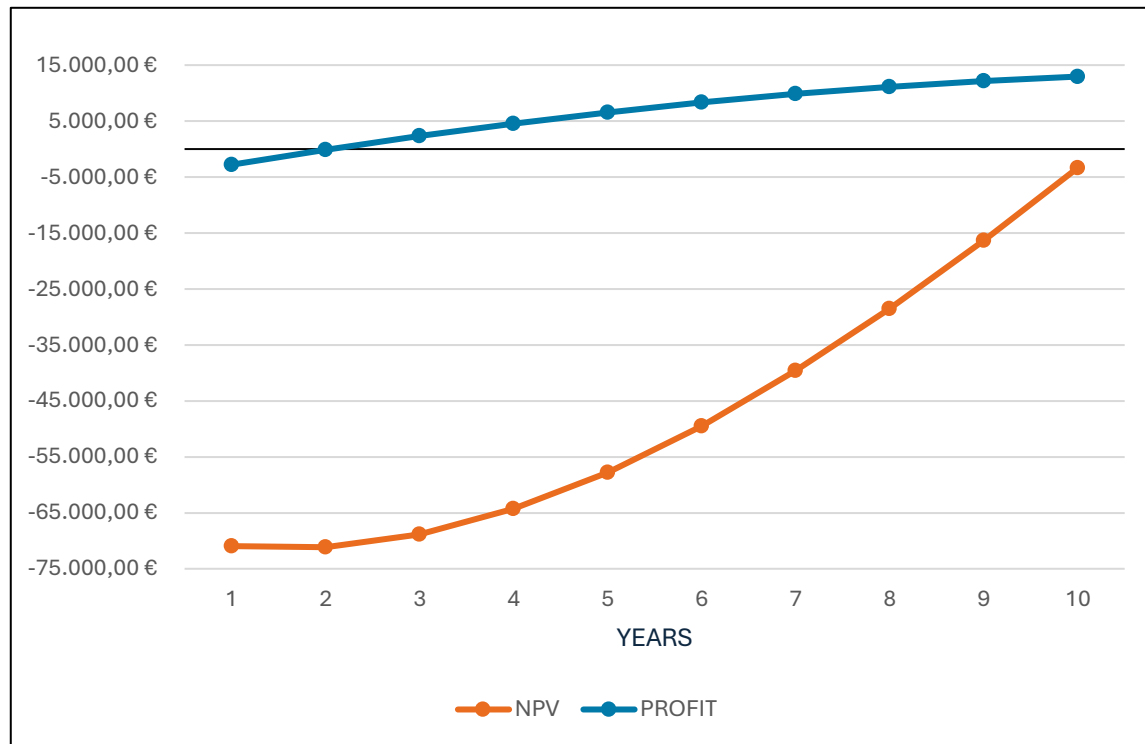


Figure 11: Profit and NPV for scenario 3 in the pessimistic case

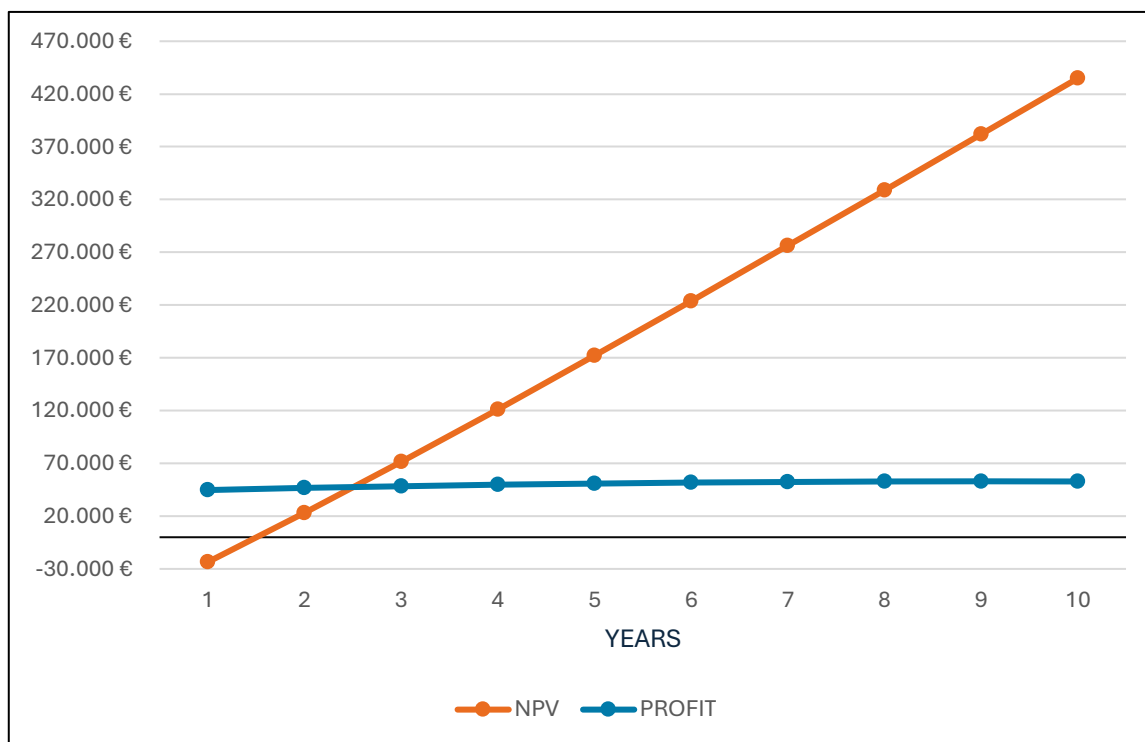


Figure 12: Profit and NPV for scenario 3 in the optimistic case

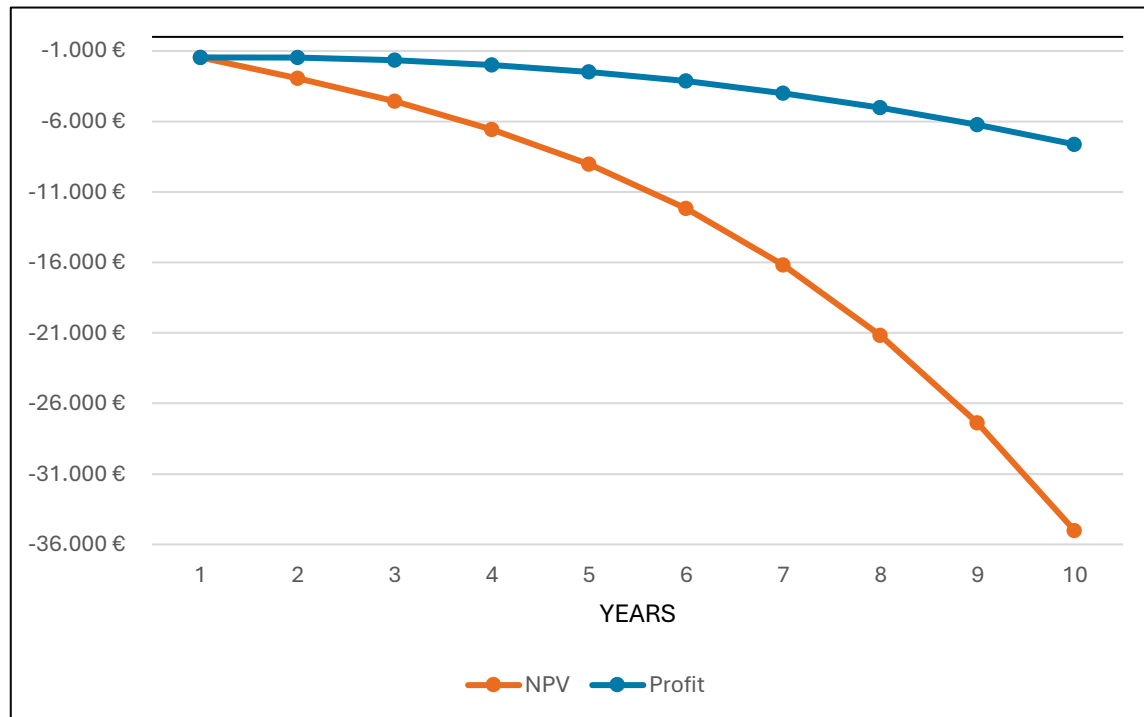


Figure 13: Profit and NPV for scenario 2 in the pessimistic case

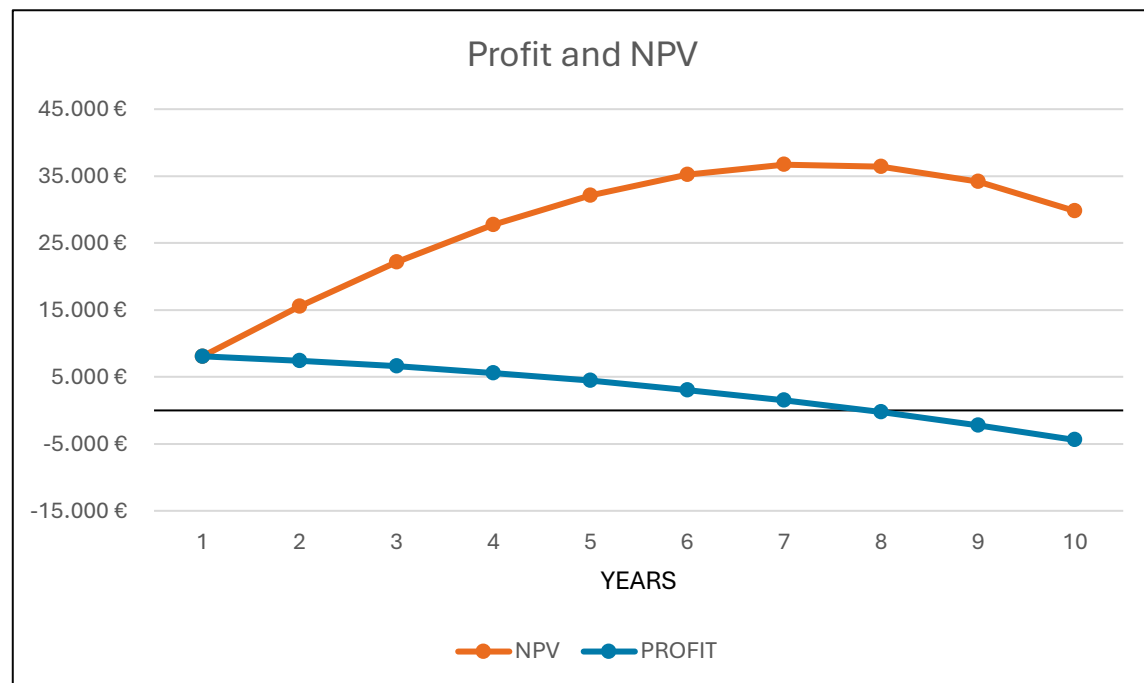


Figure 14: Profit and NPV for scenario 2 in the optimistic case

## CHAPTER 5: Final Decision and Risk Analysis

### Final Decision

After considering the much better turnover rate for **SCENARIO 3** in the financial analysis, the better option is to go for the vertical implementation of the manufacturing process. It not only has a very high profitability, but also a quite low pay-back-period. In addition, it presents the company with the option to be more flexible in operations and not be dependent on an external manufacturer.

Hence, the following analysis is carried out with the consideration of moving forward with an implementation of **SCENARIO 3**.

### Financial Risk

Implementing internal production requires an initial investment of about €120,000, which includes expenses for equipment, specialized personnel, materials, transportation supplies, and lab rental. The operating margin is closely tied to sales volume and the management of variable costs, such as the cost per orthotic. Potential increases in material costs or production inefficiencies could further reduce profits. To mitigate this risk, Santagostino could establish partnerships with raw material suppliers to fix costs, ensuring price stability and protecting margins. Dependence on constant demand to cover fixed costs poses another significant risk, especially if actual sales volumes do not meet projected estimates. To further mitigate financial risk, the raw materials acquired for production could be used to manufacture orthotics for third parties, optimizing resource utilization and opening additional revenue streams.

It's important to note that the required investment represents approximately 2% of total investments for 2023 and about 0.4% of the 2023 revenue, in addition the company reinvests around 20% of the previous year's revenue (Santagostino, 2024). Therefore, the investment can be considered financially negligible, minimizing the risk to the organization's overall financial health. Furthermore, Santagostino can leverage its existing patient base to more easily achieve positive cash flow, the established relationships with current patients provide a ready market for the internally produced orthotics, accelerating revenue generation and reducing the time needed to reach profitability.

Adopting a gradual investment approach by starting on a smaller scale allows the company to test the business model, and make necessary adjustments based on initial results; this phased implementation minimizes financial exposure and provides valuable insights before committing to full-scale operations, enhancing the project's overall viability.

### Operational Risk

Transitioning to internal production presents new operational complexities for Santagostino. The company's lack of experience in the medical device manufacturing sector may lead to initial inefficiencies and challenges in process management. These inefficiencies could result in longer production times, higher defect rates, or suboptimal resource utilization. Additionally, production interruptions may occur due to technical failures, machinery malfunctions, or shortages in raw

material supply. Such disruptions can cause delays in delivering orthotics to patients, negatively impacting customer satisfaction and the company's reputation.

Investing in advanced manufacturing technologies introduces the risk of rapid obsolescence. The equipment and software used in production may become outdated quickly as technology advances, requiring continuous investment to stay competitive and maintain high-quality standards. This necessity for frequent upgrades can strain financial resources and complicate long-term planning.

Moreover, internal production increases dependency on suppliers for quality raw materials and components. Issues with suppliers, such as delivery delays, quality inconsistencies, or price fluctuations, can disrupt production schedules and elevate operating costs. Reliance on a limited number of suppliers amplifies the risk of supply chain interruptions, which can have a cascading effect on the company's ability to meet patient needs promptly.

To mitigate these operational risks, Santagostino must invest in comprehensive staff training programs to build expertise in medical device manufacturing. Hiring experienced professionals in the field can accelerate the learning curve and enhance operational efficiency. Implementing advanced management systems for production and inventory control will optimize processes, reduce waste, and improve responsiveness to demand fluctuations. Preventive maintenance programs are essential to minimize machinery downtime and ensure consistent production output. Additionally, establishing strong relationships with multiple reliable suppliers can reduce supply chain vulnerabilities. Negotiating long-term contracts with key suppliers, including agreements on timely deliveries and stable pricing, can secure a steady flow of raw materials and help control costs.

## Regulatory and Compliance Risk

The production of orthotics is subject to strict national and international regulations. Santagostino must ensure compliance with quality standards such as ISO 13485 and obtain the necessary certifications for the production and commercialization of medical devices. Additionally, ISO 14971, which focuses on risk management throughout the lifecycle of medical devices, must be followed, alongside ISO 10993, which ensures the biocompatibility of materials used in devices that come into contact with the human body. Compliance with the EU 2017/745 regulation, which governs the safety, performance, and classification of medical devices within the European Union, is also mandatory.

Failure to comply with these regulations could lead to legal sanctions, substantial fines, and significant reputational damage; the release of defective products exposes the company to legal liabilities and potential product recalls, resulting in additional costs and loss of patient trust.

Another critical aspect is the reputational risk associated with product and service quality. Currently, Santagostino boasts a low complaint rate of 0.95% and a high patient satisfaction score, averaging 4.6 out of 5 (Santagostino, 2024). However, any perceived decline in quality could lead to negative feedback that can quickly spread through social media and online review platforms, damaging the brand's reputation. This negative impact would not be limited to the orthotics sector but could also undermine the strong reputation Santagostino has established in other areas of care.

To mitigate these risks, it is essential to implement a rigorous quality management system, ensuring that every stage of the production process complies with current regulations. Continuous staff training on laws and industry best practices will help maintain high-quality standards. Actively monitoring patient feedback will allow the company to promptly identify and address any issues, thereby preserving customer trust. Maintaining transparent and open communication with patients will further strengthen the company's reputation, helping to prevent reputational damage that could have broader repercussions across the entire organization.

## References

- Area Studi Mediobanca. (2024, June 5). *Cresce la sanità privata in Italia: ecco chi sono i maggiori operatori e i loro bilanci*. Tratto da Dottnet: <https://www.dottnet.it/articolo/32536667/cresce-la-sanita-privata-in-italia-ecco-chi-sono-i-maggiori-operatori-e-i-loro-bilanci>
- Atlantic Council. (2024, April 24). *Dispatch from Rome: Political stability gives Italy a chance to step into the spotlight*. Tratto da atlanticcouncil: <https://www.atlanticcouncil.org/blogs/new-atlanticist/dispatch-from-rome-political-stability-gives-italy-meloni/>
- Banca d'Italia. (2023). *Indagine conoscitiva sulle forme integrative di previdenza e di assistenza sanitaria nel quadro dell'efficacia complessiva dei sistemi di Welfare e di tutela della salute*.
- Centro Podologico Magenta. (2015). *Plantare ortopedico: a cosa serve e quanto costa*. Tratto da Centro Podologico Magenta: <https://www.centropodologicomagenta.it/plantare-ortopedico-cose-quanto-costa/>
- de Morais Barbosa, C., Barros Bértolo, M., Zonzini Gaino, J., Davitt, M., Zoraida, S., & de Paiva Magalhães, E. (2018). The effect of flat and textured insoles on the balance of primary care elderly people: a randomized controlled clinical trial. *Dove Press*.
- Etica Economia. (2024, July 31). *Le agevolazioni fiscali sulla spesa sanitaria privata migliorano la qualità della sanità pubblica?* Tratto da Etica Economia: <https://eticaeconomia.it/le-agevolazioni-fiscali-sulla-spesa-sanitaria-privata-migliorano-la-qualita-della-sanita-pubblica/#:~:text=In%20Italia%2C%20ad%20esempio%2C%20esistono,superano%20i%20129%2C11%20euro.>
- European Union. (2024, November 15). *Economic forecast for Italy*. Tratto da Economy and Finance: [https://economy-finance.ec.europa.eu/economic-surveillance-eu-economies/italy/economic-forecast-italy\\_en](https://economy-finance.ec.europa.eu/economic-surveillance-eu-economies/italy/economic-forecast-italy_en)
- Fortune Business Insights. (2024). *Europe Foot Orthotic Insoles Market Size, Share & Industry Analysis*. Tratto da Fortune Business Insights - Medical Device: <https://www.fortunebusinessinsights.com/toc/europe-foot-orthotic-insoles-market-107663>
- GPDP. (1997). *Tutela dei dati sanitari del paziente nell'attività del medico di base*. Tratto da Garante per la protezione dei dati personali: [https://www.garanteprivacy.it/home/docweb/-/docweb-display/docweb/49311#:~:text=La%20legge%20675%2C%20nel%20prevedere,interessat o%3B%20b\)%20attraverso%20una%20spiegazione](https://www.garanteprivacy.it/home/docweb/-/docweb-display/docweb/49311#:~:text=La%20legge%20675%2C%20nel%20prevedere,interessat o%3B%20b)%20attraverso%20una%20spiegazione)
- Grand View Research. (2023). *Italy Shoe Insoles Market Size & Outlook, 2023-2030*. Tratto da Grand View Research - Horizon: <https://www.grandviewresearch.com/horizon/outlook/shoe-insoles-market/italy>
- Grand View Research. (2024). *Shoe Insoles Market Size, Share & Trends Analysis Report By Application (Casual, Athletic), By Material (Foam, Gel), By End-use, By Price, By Type, By Region, And Segment Forecasts, 2024 - 2030*. Tratto da Grand View Research - Industry analysis: <https://www.grandviewresearch.com/industry-analysis/shoe-insoles-market-report>

- Gruppo San Donato. (2024). *A cosa serve il plantare ortopedico e quando usarlo*. Tratto da Gruppo San Donato: <https://www.grupposandonato.it/news/2024/settembre/plantare-ortopedico-cosa-serve>
- ISTAT. (2022). Tratto da Istituto Nazionale di Statistica: <https://www.istat.it/>
- Lo Mauro, A. (2024). Riabilitazione Motoria course resources. In A. L. Mauro, *Riabilitazione Motoria*.
- MarcaturaCE. (2024). *La Marcatura CE dei Dispositivi Medici*. Tratto da Marcatura CE: [https://marcaturace.net/dispositivi-medici?gclid=EAlaIQobChMIo6yovqiZ-wIVzeFRCh2Q7AYqEAAYASAAEglgRPD\\_BwE](https://marcaturace.net/dispositivi-medici?gclid=EAlaIQobChMIo6yovqiZ-wIVzeFRCh2Q7AYqEAAYASAAEglgRPD_BwE)
- MISSOC. (2023). Tratto da MISSOC: <https://www.missoc.org/>
- Rete Ambiente. (2024). *Normativa rifiuti*. Tratto da Rete Ambiente: [https://www.reteambiente.it/normativa/rifiuti/#::~:~:text=A%20livello%20nazionale%2C%20oil%20provvedimento,Dlgs%20152%2F2006%20\(cd.](https://www.reteambiente.it/normativa/rifiuti/#::~:~:text=A%20livello%20nazionale%2C%20oil%20provvedimento,Dlgs%20152%2F2006%20(cd.)
- Santagostino. (2023). *Fascite plantare: sintomi, cause e rimedi*. Tratto da Santagostinopedia: <https://www.santagostino.it/it/santagostinopedia/fascite-plantare>
- Santagostino. (2024). *Santagostino Annual Report 2023*. Tratto da Salute Santagostino: [https://salute.santagostino.it/annual-report-2023?\\_ga=2.183222758.1701538477.1733907078-849528091.1727974981](https://salute.santagostino.it/annual-report-2023?_ga=2.183222758.1701538477.1733907078-849528091.1727974981)
- Trading Economics. (2024). *Italy - Labour cost index*. Tratto da Trading Economics: <https://tradingeconomics.com/italy/labour-cost-idx-eurostat-data.html>



## Table of figures

Figure 1: Flat vs textured insole .....	4
Figure 2: Production line and operational flow.....	6
Figure 3: Abell model for plantars.....	7
Figure 4: Estimation of the impact of events emerging from the PESTLE analysis .....	11
Figure 5: 5 forces analysis.....	14
Figure 6: Porter's Value Chain - Scenario 1.....	15
Figure 7: Porter's Value Chain - Scenario 2.....	17
Figure 8: Porter's Value Chain - Scenario 3.....	19
Figure 9: Strengths, weaknesses, opportunities and threats of the project.....	22
Figure 10: Market demand .....	26
Figure 11: Profit and NPV for scenario 3 in the pessimistic case .....	31
Figure 12: Profit and NPV for scenario 3 in the optimistic case .....	31
Figure 13: Profit and NPV for scenario 2 in the pessimistic case.....	32
Figure 14: Profit and NPV for scenario 2 in the optimistic case .....	32

## Appendix

### Appendix 1 – Prescription Data

Starting with the pre-filtered data sheet provided by Santagostino, containing all the prescriptions (1065) issued by orthopedists and podiatrists. The provided data sheet includes three columns: date, type of specialist (orthopedist or podiatrist), and prescriptions. The criteria followed to achieve the following results were:

1. Selection of only the prescriptions containing the terms “plantari,” “ortesi,” “ortesi plantari,” or “solette,” with subsequent verification that these prescriptions were relevant to foot orthoses.
2. Distinction between podiatry and orthopedics.
3. Identification of any diagnostic tests required to produce the orthosis (e.g., baropodometry, X-rays, gait analysis).
4. Identification of any specifications for the insole’s production provided by the specialist (e.g., CAD/CAM, plaster cast, custom-made, generic insole), distinguishing between the podiatry and orthopedics departments.

#### Total plantars prescribed 921

Of which:

#### Prescribing physician

→ Podiatry	193
→ Orthopedics	728

#### Exam

→ Baropodometry	55
→ X-rays	24
→ Gait analysis	2

#### Plantar type

→ CAD/CAM	14
→ Podiatry	12
→ Orthopedics	2
→ Plaster cast	48
→ Podiatry	25
→ Orthopedics	23
→ Custom made	133
→ Podiatry	48
→ Orthopedics	85
→ Generic insole	15
→ Podiatry	7
→ Orthopedics	8
→ Not specified	711
→ Podiatry	101
→ Orthopedics	610

## Appendix 2 – Cost and Revenue Structure

### Purchase cost of insoles for SCENARIO 2

Provided by Paromed:

Product	Purchase cost
Mono-density plantar	125,00€
Bi-density plantar	130,00€
Tri-density plantar	140,00€
Specialised plantar	190,00€

### Material cost for SCENARIO 3

Material price list provided by Sensor Medica:

Blocks	Name	Colour	LxPxA mm	SHORE HA	Price
PUN100	Positive	White Cream	330 x 250 x 50	100	12,00 €
PUL100	Positive	White Cream	390 x 280 x 30	100	14 €
EVA500	Green Relax	Green	360 x 270 x 30	30 + 50	8,50 €
EVA501	Blue Comfort	Blue	360 x 270 x 30	40 + 50	8,60 €
EVA510	Bi-Tech	Green Orange	360 x 270 x 30	30 + 50 + 50	10,20 €
EVA515	Multicolors	Multicolor	360 x 270 x 30	40 + 50	10,90 €
EVA520	Bi-Comfort	Orange Green	360 x 270 x 30	50 + 30 + 50	10,60 €
EVA503	Yellow	Yellow	360 x 270 x 30	20 + 50	8,70 €
EVA502	Orange	Orange	360 x 270 x 30	50 + 50	9,40 €
EVA530	Blue Green	Blue Green	360 x 270 x 30	40 + 30 + 50	10,70 €

Coverings	Name	Colour	LxPxA mm	SHORE HA	Price
COP100	Eva Brown	Brown	185x110	2 mm	5,80 €
COP150	Eva Brown drilled	Brown	185x110	2 mm	9,50 €
COP200	Eva Beige	Beige	185x110	2 mm	5,80 €
COP250	Eva Beige drilled	Beige	185x110	2 mm	9,50 €
COP300	Eva Yellow	Yellow	185x110	2 mm	6,20€
COP400	Eva Yellow	Yellow	185x110	4 mm	10,20 €
COP600	Eva Blue	Blue	185x110	2 mm	5,80 €
COP700	Eva Black	Black	185x110	2 mm	5,80 €
COP800	Eva Aqua	Light Blue	185x110	1,5 mm	4,50 €
COP900	Eva Rosa	Pink	185x110	1,5 mm	4,50 €

Average material cost for plantar:

Product	Average material cost (per unit)
Mono-density plantar	16,50€
Bi-density plantar	17,05€
Tri-density plantar	17,89€
Specialised plantar	18,42€

### Costs for mandatory instrumentation

Fresa a controllo numerico VULCAN	1	24000€
Kit piano aspirante VACUUM con pompa	1	5000€
Bidone aspiratore trucioli con filtro	1	450€
freeSTEP 2.0 - Modulo PRO	1	1000€
Videocamera USB HD	1	150€
3D PodoScan	1	5500€
Sensore Ambientale e Data Logger	2	600€
Cappa Aspirante + Banco di Finisaggio + FR2002 Ortho con aspiratore	1	17000€
Installazione e Formazione	1	600€
Imballo e Trasporto	1	1000€
<b>Total</b>		<b>55900€ IVA not included</b>
		<b>68.198,00 € IVA included</b>

### Costs for materials

Panetti	From 8,5€ to 14€	each piece
Coperture	From 4,5€ to 10,20€	each piece

### Costs for lab rent

Lab	~ €1000/month (only <b>SCENARIO 3</b> )	12.000,00 € per year
Measurement Room	~ €500/month	6.000,00 € per year

### Costs for orthopaedic technician

Salary	~ €25.000 (annual gross salary)	25.000,00 € per year
INPS (9,19%)		2.297,50 € per year
		<b>27.297,50 € per year</b>

### Costs for marketing and maintenance

Marketing	~ €5000/year	mainly owned media	5.000,00 € per year
Maintenance	~ €1000/year	for all machinery	1.000,00 € per year

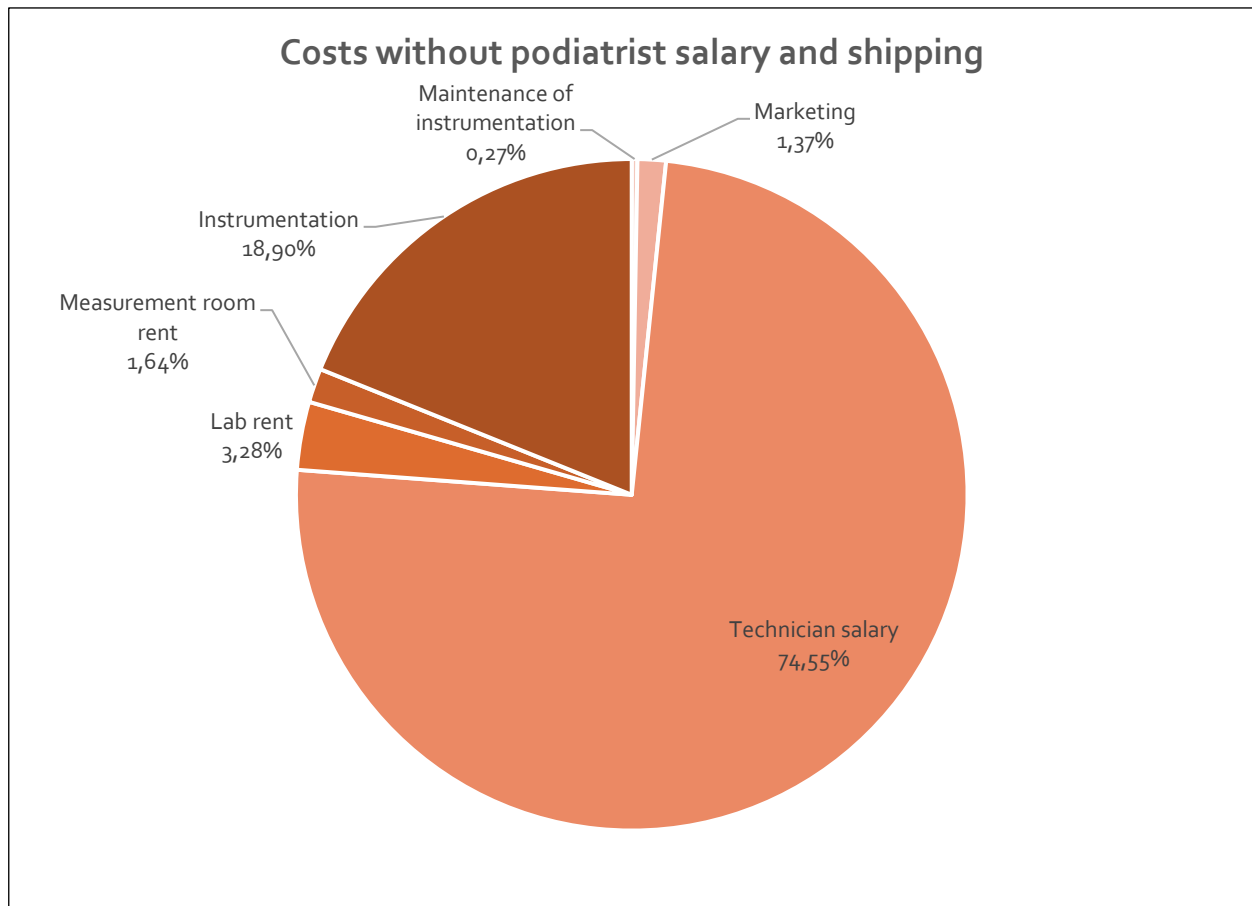
### Costs for podologist (hourly)

Salary	~ €54,71 (hourly gross salary)	54,71 € 1 hour / plantar
--------	--------------------------------	--------------------------

### Costs for shipping

Shipping	~ €30	30,00 € per plantar
----------	-------	---------------------

<b>TOTAL INVESTMENT (1st year)</b>	<b>119.495,50 €</b>	<b>not considering podiatrist costs and shipping</b>
------------------------------------	---------------------	--



### Selling price

Recommended retail price from Paromed, external partner for **SCENARIO 2**, and used in **SCENARIO 3**.

Product	Selling price
Mono-density plantar	240,00€
Bi-density plantar	250,00€
Tri-density plantar	260,00€
Specialised plantar	300,00€

## Appendix 3 – NPV Tables

OPEX = cost for lab rent (only **SCENARIO 3**) + cost for measurement room rent + cost for orthopaedic technician salary + cost for marketing + cost for maintenance.

CAPEX = costs for mandatory instrumentation.

Inflation = 2,5% annual.

Annual growth sales rate 10%.

To use revenue, cost of materials, and purchase cost values that are as consistent as possible, an average value was estimated using the weighted average of the percentage of sales corresponding to each type of insole as a tool.

Type	Sales	Sales percentage	Weighted average of revenues	Weighted average of material cost	<b>SCENARIO 2</b> Weighted average of purchase cost
Mono-density	252	27,36%	65,67 €	4,51€	34,20 €
Bi-density	237	25,73%	64,33 €	4,39€	33,45 €
Tri-density	237	25,73%	66,91 €	4,58€	36,03 €
Specialised	195	21,17%	63,52 €	3,90€	40,23 €
	<b>921</b>		<b>260,42 €</b>	<b>17,38€</b>	<b>143,91 €</b>

Table 1: SCENARIO 3 – pessimistic case

YEARS	OPEX	SALES	MATERIAL COST	PODIATRIST	SHIPPING	CAPEX	PROFIT	NPV
1	51.297,50 €	300	17,38 €	54,71 €	30,00 €	68.198,00 €	-3.796,97 €	-71.994,97 €
2	52.579,94 €	330	17,81 €	56,08 €	30,75 €	- €	-1.171,58 €	-73.166,54 €
3	53.894,44 €	360	18,26 €	57,48 €	31,52 €	- €	1.245,65 €	-71.920,90 €
4	55.241,80 €	390	18,71 €	58,92 €	32,31 €	- €	3.447,54 €	-68.473,36 €
5	56.622,84 €	420	19,18 €	60,39 €	33,11 €	- €	5.426,71 €	-63.046,65 €
6	58.038,41 €	450	19,66 €	61,90 €	33,94 €	- €	7.175,53 €	-55.871,12 €
7	59.489,37 €	480	20,15 €	63,45 €	34,79 €	- €	8.686,12 €	-47.185,00 €
8	60.976,61 €	510	20,66 €	65,03 €	35,66 €	- €	9.959,37 €	-37.234,63 €
9	62.501,02 €	540	21,17 €	66,66 €	36,55 €	- €	10.959,89 €	-26.274,75 €
10	64.063,55 €	570	21,70 €	68,33 €	37,47 €	- €	11.706,04 €	-14.568,70 €

Table 2: SCENARIO 3 – optimistic case

YEARS	OPEX	SALES	MATERIAL COST	PODIATRIST	SHIPPING	CAPEX	PROFIT	NPV
1	51.297,50 €	600	17,38 €	54,71 €	30,00 €	68.198,00 €	43.703,57 €	-24.126,48 €
2	52.579,94 €	630	17,81 €	56,08 €	30,75 €	- €	45.563,29 €	21.781,56 €
3	53.894,44 €	660	18,26 €	57,48 €	31,52 €	- €	47.195,71 €	69.297,45 €
4	55.241,80 €	690	18,71 €	58,92 €	32,31 €	- €	48.593,18 €	118.184,77 €
5	56.622,84 €	720	19,18 €	60,39 €	33,11 €	- €	49.747,82 €	168.199,20 €
6	58.038,41 €	750	19,66 €	61,90 €	33,94 €	- €	50.651,49 €	219.088,21 €
7	59.489,37 €	780	20,15 €	63,45 €	34,79 €	- €	51.295,80 €	270.590,83 €
8	60.976,61 €	810	20,66 €	65,03 €	35,66 €	- €	51.672,12 €	322.437,36 €
9	62.501,02 €	840	21,17 €	66,66 €	36,55 €	- €	51.771,51 €	374.349,14 €
10	64.063,55 €	870	21,70 €	68,33 €	37,47 €	- €	51.584,77 €	426.038,22 €

Table 3: SCENARIO 2 - pessimistic case.

YEARS	SALES	PODIATRIST	SHIPPING	MARKETING + RENT	PROFIT	NPV
1	300	54,71 €	30,00 €	11.000,00 €	-1.458,60 €	-1.458,60 €
2	330	56,08 €	30,75 €	11.275,00 €	-1.478,32 €	-2.936,92 €
3	360	57,48 €	31,52 €	11.556,88 €	-1.651,04 €	-4.587,96 €
4	390	58,92 €	32,31 €	11.845,80 €	-1.982,21 €	-6.570,17 €
5	420	60,39 €	33,11 €	12.141,94 €	-2.477,46 €	-9.047,63 €
6	450	61,90 €	33,94 €	12.445,49 €	-3.142,61 €	-12.190,24 €
7	480	63,45 €	34,79 €	12.756,63 €	-3.983,65 €	-16.173,89 €
8	510	65,03 €	35,66 €	13.075,54 €	-5.006,79 €	-21.180,68 €
9	540	66,66 €	36,55 €	13.402,43 €	-6.218,41 €	-27.399,09 €
10	570	68,33 €	37,47 €	13.737,49 €	-7.625,11 €	-35.024,20 €

Table 4: SCENARIO 2 – optimistic case.

YEARS	SALES	PODIATRIST	SHIPPING	MARKETING + RENT	PROFIT	NPV
1	600	54,71 €	30,00 €	11.000,00 €	8.082,79 €	8.082,79 €
2	630	56,08 €	30,75 €	11.275,00 €	7.427,75 €	15.510,55 €
3	660	57,48 €	31,52 €	11.556,88 €	6.603,83 €	22.114,37 €
4	690	58,92 €	32,31 €	11.845,80 €	5.605,17 €	27.719,54 €
5	720	60,39 €	33,11 €	12.141,94 €	4.425,74 €	32.145,28 €
6	750	61,90 €	33,94 €	12.445,49 €	3.059,31 €	35.204,59 €
7	780	63,45 €	34,79 €	12.756,63 €	1.499,45 €	36.704,05 €
8	810	65,03 €	35,66 €	13.075,54 €	-260,46 €	36.443,58 €
9	840	66,66 €	36,55 €	13.402,43 €	-2.227,28 €	34.216,30 €
10	870	68,33 €	37,47 €	13.737,49 €	-4.408,07 €	29.808,23 €