



# COMPANY REPORT

## 2020, Turkey

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JA Turkey  
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## 1-EXECUTIVE SUMMARY

**'The only way to *Discover* the limits of the *Possible* is to go beyond them into the *Impossible*'**  
**Arthur C. Clarke**

Every year, 18 million people are diagnosed with cancer in the world. While 12 million of these patients receive chemotherapy treatment, 68% of those patients experience numbness-neuropathy at their fingertips. We have developed a solution not only for cancer patients to feel with their fingertips, but also to feel what they need most, the sense of hope, to beat cancer. Neuropathy starts with the patient's treatment process and continues throughout the patient's entire life. We are aiming to facilitate the patients' daily experiences and treatment processes.

***We, as Tensopathy Team developed a revolutionary solution in order to prevent neuropathy in cancer patients, receiving chemotherapy treatment.***



Tensopathy, Junior Achievement Company was founded with the dream of improving the quality of life by preventing the development of neuropathy (nerve damage-numbness) with a world-class innovative solution.

Our vision is to provide Tensopathy to cancer patients who may develop neuropathy and facilitating their lives with innovative solutions. Our mission is to prevent the loss of sensation that occurs in the hands and feet of cancer patients even before they occur, rather than trying to treat them subsequently.

### **SOLUTION !**

In Tensopathy, there are tens pads placed in a special glove sends an electric current with adjustable power to the hand and feet of the patient and regularly stimulate the nerves there. This keeps the nerves alive and reduces the patient's numbness problem.

Our product aims to prevent neuropathy before it occurs, and unlike its competitors, it has heat pads and thermometers, which keeps body temperature at the required degree in the



treatment process. These are just a few of the innovative aspects that make us different in the market area.

## **2-CORPORATE IDENTITY**

### **2.1-Why We Call Us 'Tensopathy'?**

The name of our company, Tensopathy, is a combination of the words neuropathy, the problem we aim to solve, and the words Tens Device, which is the solution we provide. Thus, we gathered our problem and solution in our company name.

### **2.2- Our Logo**

Although the first thing you see when you look at our logo is hands, the fact that the entire logo is blue represents a bigger phenomenon, hope that unites not only cancer patients but all of us as a common denominator. Because that's exactly what we do as a company.



## **3-COMPANY OVERVIEW**

Our adventure started at the beginning of the academic year of 2019 thanks to the entrepreneurship club at our school. After the entrepreneurship training we received, we divided into groups and tried to find solutions to global problems in through UNDP's sustainable development goals. In the end, fate brought the Tensopathy family together. Our story started with a friend of ours whose grandfather had cancer and received chemotherapy treatment. Our friend told us about the problem of numbness that occurs in the hands of him.

As a result of our extensive literature and medical article research, we learned that this problem is referred to as neuropathy in the literature. After intensive studies, consultant interviews, and especially with the help of our doctors; we, as a team, provided a solution to this problem of neuropathy by developing a tens device. Thus, neuropathy, a global health problem, was resolved with Tensopathy.

Therefore, we distributed our department duties. While sharing the task, we paid attention to ensure that everyone is assigned to departments which suit them the most for the highest productivity.

We made important decisions regarding the progress of our company in our meetings. In our first meeting, we decided on the name of our company, met our company mentor, shared our departments, created a capital plan, and determined the salaries of employees. At our fifth meeting, we presented our authorization certificate, approved our company business plan, and held a board meeting.

### **3.1-Departments**

- **Human Resources Department** has prepared the company's payroll and other important records. Human Resources, together with the General Manager, kept the morale of the employees high and arranged a meeting with our mentor Türker Duman to share his ideas about our growth plan, sales, and marketing strategies. Group dining



and entertainment activities were organized at school departures and weekends. To improve ourselves throughout the process a 1-hour training was received from METU Industrial Engineering Student Mr. Mertcan Gül who is the founder of METU R&D Community and "University4Society". We had the opportunity to participate in the Entrepreneurship event "Ankara Startup Summit" and to 'HighSchool4Society Denizli Entrepreneurship Summit' by the guidance of the Human Resources department. To increase the current experience of all departments, we attended to Entrepreneurship Summit held at Robert College, which is the sharing platform of expert entrepreneurs in the field.

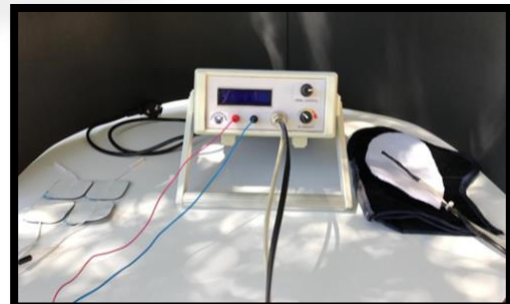
- **Finance Department** has checked the process of financial planning and budgeting, kept the financial records complete and honest, and followed the achievement of financial goals. To minimize errors, the department kept financial records in a double-entry book. Our Finance Department tries to find the most cost-effective raw materials to purchase and allocates appropriate resources to produce a high-quality product.
- **Production Department's** challenging research process lead the product to receive the confirmation of functionality from numbered doctors of Turkey's largest and leading oncology association "Turkish Society of Medical Oncology". After their approval, our Production Department has determined the production targets, developed the production strategies, and inspected the product quality. By working together, the Production and Finance department provided the purchase of the necessary materials for production.
- **Public Relations Department** has served as a bridge between our product and the market area. They fulfilled this task intending to raise awareness, determining the position of our company, and reaching as many people as possible through social media, advertisements, and investor interviews.

#### **4-PRODUCTS AND SERVICES**

Our company, Tensopathy, is based on the production of medicinal products that prevent neuropathy that may occur in the hands due to the side effects of certain drugs given to patients with cancer during chemotherapy treatment. This neuropathy manifests itself, especially in the hands and feet.

##### **4.1-How Does It Work?**

The use of simultaneous tens devices during the patients' chemotherapy treatment increases the stimulation of nerves in the region and speeds up regional blood circulation while giving electrical stimuli at certain frequencies. This keeps the nerves alive and reduces the patient's numbness problem.



#### 4.2-The Solution

Tens pads placed in a special glove sends an electric current with adjustable power to the hand/feet of the patient and regularly stimulate the nerves there. With “Tensopathy”, we were able to raise the temperature of the places where the risk of neuropathy could occur to 37C and keep it constant at the optimum temperature with the resistance we placed inside the gloves. In other words, with the product we make, we aim to minimize the probability of cancer patients developing neuropathy.

#### 4.3-Consultant Meetings

Feedbacks from the Ankara Numune Training and Research Hospital Medical Oncology Clinic provided that we can help patients suffering from neuropathy and benefit them as much as possible. We have bought the confirmation that we can help patients suffering from neuropathy from Dr. Mutlu Doğan (Prof. Dr. from Ankara Numune Training and Research Hospital Neurology Clinic) Prof. Dr. Şule Bilen and Dr. Lütfi Doğan (Ankara Oncology Training and Research Hospital and General Surgery Clinic, Assoc.)



#### 5-OPERATIONS

We added the features that distinguish our product on the national and international platforms. These are; the thermometer that measures the temperature of the glove, the resistance, and the temperature control unit that would keep the temperature constant. We conveniently placed these features inside the Tens device. Afterward, we added the digital display screen on our device to see the data correctly on the screen. We adjusted the voltage and time sent via the ports on the side of this screen. We produced our product in approximately 7 weeks and our product costed us exactly 1000 € .

We showed our product to the relevant neurologists and oncologists and as a result of our negotiations we received confirmation that it could work and could be easily used. We got the result of '*Tensopathy can be an invention and patentable.*' Because of the international aspect of the product and the international patent process, which may have an important share in the world market, we decided to be initiated outside of Turkey. We received a grant of 5000 Swiss Francs from TUBITAK for the PCT Application required for the preliminary investigation in the International (American and European) Patent Application. Thus, we officially started the patent obtaining process on March 26, 2019, by filling out the METU TTO Invention Notification Form. We also applied for EMC (Electromagnetic Compatibility Test) and LVD (Security Test) tests by working with the Ivt test lab. After these two tests, a great step will be taken towards international sales with CE certification and FDA test.

We had meetings regarding the sale of our product, which was registered to prevent neuropathy, with the Ridvan Erdemir who is the chief physician of Denizli Private Health Hospital. They ordered 10 products until December 2020, so we made our first sales contract. We sold our product for 1580 Euros which cost us 820 €, with a profit of 760€ each.



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## **6-MARKET AND MARKETING STRATEGY**

In the literature, the effect of using tens device on neuropathy is mentioned. They also talk about the use of the tens device in reducing chemotherapy-related peripheral neuropathy as much as possible, but there is no device/product on the market used for the reduction/treatment of neuropathy in chemotherapy treatment. We aimed not to reduce the effects of neuropathy, but to prevent it, by using our product "Tensopathy" during chemotherapy intake of patients.

According to the data from Globalcan 2020, approximately 18 million people are diagnosed with cancer annually. 12 million of them receive chemotherapy treatment. Thus, we can see that; with Tensopathy approximately 12 million treatment patients per year in the world make up the size of our worldwide market. On the other hand, there are nearly 150 hospitals, having oncology units and there are almost 160 thousand patients per year receiving chemotherapy treatment in Turkey. This data reveals the width of our market area.

### **6.1-Aspects That Make Us Innovative In The Market**

- Chemotherapy agents that cause polyneuropathy to increase its effect with cold. During chemotherapy intake, protecting the body temperature of 37C has great importance for patients to minimize neuropathy, especially nerve damage in the hands. Our product has a temperature control system that other tens devices on the market do not have. Having this feature has made Tensopathy unique and innovative in both national and international platforms.
- In our device, the level of the electric current sent, the way of sending the current (continuously or at certain intervals), the time it will send the current can be adjusted with the adjustment mechanism on the product and it can be increased/decreased to the appropriate power again. In this way, Tensopathy is differentiated from other products on the market with being able to personalize the treatment process for the patient.
- We have taken great steps to ensure that our product has a place in the market in national and international platforms;

For the first time, Turkey received an invitation to one of the world's largest entrepreneurship summit of JA Worldwide China which is organized in cooperation with Chinese SCAS schools. We represented Turkey and Europe on the international platform by attending to The Belt Road Youth Entrepreneurship Camp. Thus, an important step was taken towards taking investment and moving to mass production.

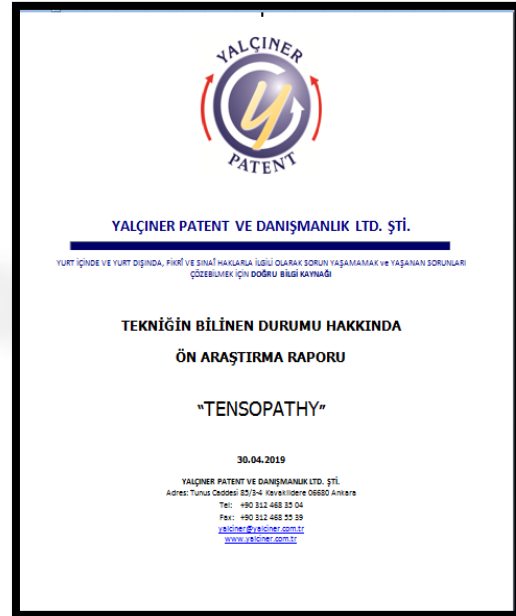
Our negotiations with several companies before the Pandemic process this year also strengthened the innovative aspect of our project. Mr. Mete Saylan who is the Turkey Marketing Director of BAYER which is one of the largest medical companies in the world and has representation in 40 countries of the world visited our school to get information about our product. They found our product quite innovative and functional. Also, we received an invitation to the Innovation Day event held at the general directorate of BAYER at 22 of January through the Junior Achievement Education Foundation. We were proud to be the only high school entrepreneurs attending the event.

- The COVID-19 crisis caused us some problems in our plans. However, we have survived this process thanks to our investors and company meetings on virtual platforms and social media information we held over the internet.

## **7-SALES AND PROMOTION**

We take cancer patients who have undergone chemotherapy treatment and experience neuropathy as target groups, regardless of gender, age, and employment status.

At Ankara Numune Training and Research Hospital, we contacted with oncologists and neurologists who are experts in their fields and introduced the details and objectives of our product. We have applied to the Turkish Patent Institute after the preliminary and patentability evaluation of the report. By launching the patent process, we took our first step towards applying for the FDA certificate and CE certificate which we need to start mass production.



As we took firm steps towards obtaining the necessary documents for the mass production phase, we continued our negotiations with our investors. Even though our patent process is still ongoing, we have gained the trust of our investors' thanks to the signed articles of our consultants about our product, and we received the promises of support from different companies in METU Teknokent. Our product has received support from the international investment company named METU R&D Support Inc.-Growth Circuit about being a promising product that can be supported in the R&D process and can be turned into an investment after patent operations.

### **7.1-Covid-19 Crisis**

During the COVID 19 process, we successfully continued our negotiations in the field of sales. While the sales potential of our company is expected to decrease in the pandemic process, we turned this crisis into an opportunity. We achieved our greatest success, the first sale of our product in this period. Rıdvan Erdemir, as the chief physician of Denizli Private Hospital, is currently requesting 10 product orders until December 2020 on behalf of the hospital to serve people who may suffer from this condition within our hospital. The fact that we are making sales agreements of our product, while the priority of the budget of the hospitals is covid19, reveals both the seriousness of the problem which we provided a solution and the strength of our product.





After obtaining our patent and CE certificate, we are planning to continue to introduce our product to hospitals, medical companies, and patients. Since the product has an international aspect and has a significant share in the world market, it was decided to start the patenting process abroad as well as in Turkey.

## **8-MANAGEMENT**

We divided our group of 7 people into sections according to everyone's talents and desires and determined our departments. Our General Manager managed the process and provided the necessary controls to ensure our company works in line with its goals.

Our Production Manager kept a list of requirements for all parts required for the production of Tensopathy and reported it to the sponsoring company. He actively worked in the emergence of a complete product, both by following this list of needs during the production phase of the product and by making quality control after it's emergence.

Our Sales and Marketing Manager has researched and determined the market analysis, the market of our company is trying to enter and the point it wants to reach. As a result, we concluded that we can sell our product to various hospitals and medical companies.

Our Finance Manager regularly tracked the summary of operations, salary payments, and shareholder profit share payments. It also controlled the process of financial planning and budgeting, keeping financial records complete and honest, and achieving the set financial goals.

Our Public Relations Manager has made appointments by identifying the hospitals with an oncology department that has the potential of existing customers in the promotion and functionality of the product to attract customers and protect existing customers, and has made appointments and directed the marketing department to these hospitals.

### **8.1-Managing The Influencers**

Our Human Resources Manager has prepared the company's remuneration plan. Also, it has arranged sponsorships with experts in their fields that will sponsor us in areas such as production and advertisement.

### **8.2-Managing The Process**

At the end of all this, of course, we were tired, but we beat this even more concentrate. We laughed, we cried. Sometimes we fought, sometimes we had a lot of fun together. But most importantly, we made a lot of effort and progressed in the process of becoming a professional entrepreneur. We managed to become a family.

## **9-FUTURE POTENTIAL OF THE MINI-COMPANY**

Our 2 year plans include taking the FDA test, getting our CE certification, advancing our investor negotiations, and increasing the number of our investors. Since increasing our sales throughout the country is our priority within 2 years, it has been important for us to improve our patent processes. For the patent procedures of our product, we applied to the Turkish

Patent Institute with a preliminary research report on March 26, 2019, through METU TTO and Yalçiner Patent, and the research section for the product was started. Since the product was innovative on May 3, 2019, after the preliminary review of the World Intellectual Property Protection Organization, European Patent Office, and Turkish Patent Office databases: "Tensopathy can be an invention, it can be patented." was the result. Thus, in the patent process, the main application section was started. After the other documents requested for the main application of the product, the official application was filed officially to the Turkish Patent Institute on November 28, 2019, thereby taking an important step towards investment and mass production. Because of the international aspect of the product which will be a significant share of the world market, it was decided the patenting process be started worldwide. At this point, "International Patent Application Support" was received from TÜBİTAK for patent applications to American Patents and European Patent Offices, which may be valid in 130 countries of the world, and PST application was officially made on 21 January 2020. Thus, the international protection of the product was obtained and the opportunity for investment negotiations for mass production was obtained with investors from different countries of the world.

After obtaining our patent and then the CE certificate to which we will apply, we plan to continue promoting our product to hospitals, medical companies and patients our priority among our 5-year plans will be the R&D process. We plan to make our product more useful in our R&D process. In this process, our priorities will be to reach the patients directly by reducing the cost of the product, to add a touch screen, to make it more portable and to invest in the international platform. The "double-sectioned socks", which is thought to minimize the standing neuropathy in the feet, was also implemented. In this way, we have developed our product and achieved our goal of reaching more patients possible. This has made our company a sustainable business. In our plans for 10 years, our product is to sell Tensopathy to the world. We believe that we can achieve all these goals with our past achievements.



## 10-ANALYSIS OF FINANCIALS

As a result of our research and development process and investor negotiations, we decided to put our product on the market. After making this decision, we made a profit share and sponsorship agreement with Metsel Company for the financial support required for production. The production target we set for the first year is 10 products. The reason we have determined our goal as 10 products is that we have made a purchase guaranteed contract with the Denizli Private Hospital after our negotiations about the sales and marketing.

The capital we need for the production of 10 targeted products and their delivery in accordance with the agreement signed has been obtained by:

- selling 20 stocks per 50 euro, as stated in our balance sheet
- the profit share agreement made with Metsel Electronic, because of their undertaking of the production.

After the stock investors and Metsel Electronics company decided to become a partner to our product, financial support was obtained and the production phase has started. For the beginning, it is planned to sell 10 tens devices for 1580 € each. It is aimed to generate a total sales revenue of 15800 €. If we add this up in titles, there is a sales cost of 2500€ for purchases and €1000 for production fees, and 500€ for sales costs. As a result 11,800 € gross profit will be obtained. From this, as a result of the deduction of salary, fixed and variable expenses, a net profit of 7650 will be achieved by achieving a profit of 7650€.

In addition to the realization of a product that is very useful and meets the needs of cancer patients, 7650 euros obtained as a result of the 10 production and sales we have shown has shown that the sale of this product is profitable and sustainable. . After this result we have reached the conclusion that we have 3 options for the continuation of our company and it is planned to work in this direction.

- 1-Sell the company profitably (To hand over to another person together with his active and passive.)
- 2-To use the brand value of the produced product against commission in exchange for the price it deserves.

3- To partner with the company for the continuation, growth and further development of the company.

## 11-ANALYSIS OF OVERALL BUSINESS PERFORMANCE AND PROFITABILITY

<b>PROFIT/LOSS ACCOUNT(TENSOPATHY)</b>	
Sales	15.800,00 €
Purchases	2.500,00 €
Production Wages	1.000,00 €
Closing Stock	0,00 €
<b>COST of SALES</b>	<b>500,00 €</b>
<b>GROSS PROFIT</b>	<b>11.800,00 €</b>
<b>SALARIES</b>	<b>3.400,00 €</b>
<b>STATIONARY</b>	<b>0,00 €</b>
<b>MISCELLANEOUS EXPENDITURES</b>	<b>500,00 €</b>
<b>TOTAL EXPENSES</b>	<b>3.900,00 €</b>
<b>OPERATING PROFIT</b>	<b>7.900,00 €</b>
<b>MISCELLANEOUS INCOME</b>	<b>0,00 €</b>
<b>NET PROFIT</b>	<b>7.900,00 €</b>
<b>DONATIONS</b>	<b>0,00 €</b>

<b>BALANCE SHEET</b>	
<b>CURRENT ASSETS</b>	
Stock	200,00 €
DEBTORS	0,00 €
CASH (HAND & BANK)	8.700,00 €
<b>TOTAL CURRENT ASSETS</b>	<b>8.900,00 €</b>
<b>CURRENT LIABILITIES</b>	
BANK OVERDRAFT	0,00 €
LOANS	0,00 €
CREDITORS	0,00 €
CORPORATION TAX PAYABLE	0,00 €
VAT Due	0,00 €
<b>TOTAL CURRENT LIABILITIES</b>	<b>0,00 €</b>
<b>RETAINED EARNINGS</b>	<b>7.900,00 €</b>
<b>SHARE CAPITAL</b>	<b>1.000,00 €</b>

**SERKAN ÖZEN**  
Accountant



