

Report

Title

Mild

Author(s)

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Acknowledgement

Glossary

Abbreviation	Description
EPS	European Project Semester
ISEP	Instituto Superior de Engenharia do Porto
USB	Universal Serial Bus

1. Introduction

The European Project Semester (EPS) is a project based 'course'. The initial part of the EPS course is centred around a series of seminars and tutorials covering hard and soft skills, subject/project specifics and language skills and needs. Lessons will be from a mix of classic style to the more interactive (i.e. discussive) to the practical (inc. workshops). Seminars and tutorials, of the above

content, and particularly concerning the project, will also take place during the project part of the semester. In the following chapters, this report will give an insight about the work and results of a particular project that focusses on the development of a smart-mental-health companion. Also the team and other backgrounds will be presented here.

1.1 Presentation



Figure 1: Team DSTRS

Hi! We're team 5, or DSTRS. We focus this semester on anxiety and mental health issues by bringing a smart companion on the market that helps you with those problems. We are four completely different students, with all different interests and values to bring to the project but yet we're one team, working together with the same goal.

Table 1: Information about the team members

Name	Country	Course of study
Júlia Maria Lopes	Brazil	Design
Gema Romera Cifuentes	Spain	Industrial Engineering
Jacobine Camps	Belgium	Graphic and Digital Media
Julian Alexander Bode	Germany	Shipbuilding and Maritime Technology

1.2 Motivation

Our motivation for this theme and project would most importantly be to help people with a mental illness. We don't know a lot about this topic and want to learn a lot more about it during this semester. The technical parts of the project will be a challenge as well, we will try to all go out of our comfort zones to manage this part of the project. We all want to grow in our major, human-being and ability to work together in groups. But we will also grow in what we can outside of our major.

1.3 Problem

The we will work on is mental health, anxiety to be exact. Anxiety is a severe problem in this world, and because of the pandemic the anxiety rates got even worse. In daily life a lot of people struggle with this and we want to try to make daily life, with anxiety, more livable.

1.4 Objectives

Asking for help when having an anxiety attack happens to be a difficult measure when being in a situation like this. In the same matter pressing a button on the phone is one of the most common concepts when it comes to dealing with all kinds of problems nowadays. "Mild" is supposed to take this problem from the user and deliver an easy and discreet way of dealing with anxiety in public. The objective is to have a companion that gives a certain amount of relief quickly and whenever possible.

The design should be comparable to common devices that are on the market and seen being used in a normal way. It is supposed to be fashionable and not telling the story of the users needs or problems. It should fit into a modern set of accessories with all devices that are needed to make "Mild" useful.

The production of "Mild" should be able to be carried without high complexity and with the use of integrated electronics when chips go in production. Using all common techniques of production and design organization like quality assurance and testing, the product should be considered as a high standard and working device with a good reputation in the market. In order to produce a physical display of "Mild" it is objected to produce a prototype with hands-on displaying functionalities.

1.5 Requirements

In consideration that all objectives are supposed to be reached it is for example necessary to comply with the following EU Directives:

1. Electromagnetic Compatibility Directive ([EMCD](#));
2. Low Voltage Directive ([LVD](#));
3. Machinery Directive ([MD](#));
4. Radio Equipment Directive ([RED](#));
5. Restriction of Hazardous Substances in Electrical and Electronic Equipment Directive ([RoHS](#));
6. Mandatory adoption and use of the International System of Units ([The NIST International Guide for the use of the International System of Units](#))
7. Use open source software and technologies

In specific the projects requirements are:

- * Prototype has to display the systems functions.
- * Productions techniques and used materials must be carried out in a sustainable way.
- * Project Management has to be carried out after PMBOK or Scrum.

1.6 Functional Tests

In order to verify all the aspects that need to be accomplish (mechanical, softwafe, electrical...) and the functionality of the prototype. We carry out checks and tests:

1.7 Project Planning

Project planning is developed according to PMBOK principles and SCRUM agile methodology. SCRUM is a process in which a set of best practices are applied on a regular basis to work collaboratively, as a team, and to obtain the best possible result from a project. This project has been organised in Sprints. Sprints are equal periods of time throughout the whole project timeline, in which certain tasks should be completed.

1.8 Report Structure

Task	Description
1. Introduction	Presentation of the team, the motivation, the problem to be solved, objectives and its requirements, and the planning methodology.
2. State of Art	Research articles and Study of products that already exist in the market and analysis of their weaknesses and strengths.
3. Project Management	Documenting the progress that has been made over time and overview of the different aspects of the project, such as costs, risks, quality metrics, people related to the project and communication plan.
4. Marketing Plan	Documenting the business model canva and identification of the product target audience to define the marketing strategy that will be used and applied in the solution.
5. Eco-efficiency Measures for Sustainability	Definition of sustainable aspects of the project based on social, economic and environmental implications.
6. Ethical and Deontological Concerns	It aims to analyze the ethical challenges and limits for the solutions proposed.
7. Product Development	Project development from the ideation phase, concept creation, prototyping and performance of final tests and their results.

Task	Description
8. Conclusions	Summary of all that has been achieved, stating what can be improved in the future.

2. State of the Art

2.1 Introduction

Mental health is a severe problem in the world, four out of ten people struggle with it. Anxiety is one of the most well-known, and most common diseases, that's why we chose to work on this problem.

Anxiety is a natural response to stress in your body. It can happen to everyone, at all kind of moments in life, but if your feelings of anxiety are extreme, last for longer than six months, and are interfering with your life, you may have an anxiety disorder. According to [\[Holland K., 2020\]](#), ...

Anxiety is a key part of several different disorders. Like panic disorder where you experience recurring panic attacks at unexpected times. A person with panic disorder may live in fear of the next panic attack. Also phobia, an excessive fear of a specific object, situation, or activity. As well as social anxiety disorder, an extreme fear of being judged by others in social situations. Obsessive-compulsive disorder, recurring irrational thoughts that lead you to perform specific, repeated behaviours. As well as separation anxiety disorder: fear of being away from home or loved ones, illness anxiety disorder: anxiety about your health (formerly called hypochondria) and lastly post-traumatic stress disorder (PTSD): anxiety following a traumatic event. According to [\[Holland K., 2020\]](#), ...

For all kinds of anxiety, e.g., severe, less severe, we made sure to do our research, so we could get to know more about the subject, know more how to 'solve' the problems or be a help in this process.

We decided on gathering our own research by doing a survey and by taking to professionals, like psychologists that know everything about the problem. This way we could decide on our target audience and have a better view on the problem.

Our research on mental health, on the best practices in this subject and our own research is stated below.

2.2 Bibliography of Research

Table [2](#) ...

Table 2: Table of research

Title of work	Connection to the teams field of work	Reference
The lived experience of art making as a companion to the mental health recovery process. Disability and rehabilitation	Research Paper on the mental recovery with art making. Inspiration on the methods to be used in a smart device or that are being recommended by a smart device that is created in the project	[Theresa Van Lith, Patricia Fenner, Margot Schofield, 2011]
Smart Companion Agent for Mental Well-being through Deep Learning and NLP	Thesis on the development of a chatbot that is dedicated to hold a quality conversation with a patient suffering from mental illness in many ways. Can be used in terms of inspiration to a more qualified companion that is developed in the course of the EPS.	[Rafiur Khan, Abdullah Al Sohel, Farhana Azad, Shreyashee, Shamima Hossain, Mahin Fiaz, 2021]
The Therapeutic Effect of Bilateral Alternating Stimulation Tactile Form Technology on the Stress Response	Ratings of levels of emotional stress and bodily distress on a scale of 0 (no stress/distress) to 10 (worst stress/distress of one's life) before and after the application of Touchpoints for 30 seconds were entered into an app. Results showed a statistically significant reduction in the levels of both emotional stress and bodily distress, 62.26 % and 50.50 %, respectively, after 30 seconds of BLAST technology was applied. This demonstrates a clear benefit of BLAST on the stress response, reducing both emotional stress and disturbing body sensations. This is one of the possibilities to be taken as an inspiration for a stress relieving technology a mental health companion could have.	[Amy Serin, Nathan S. Hageman, Emily Kade, 2018]
Constantly connected - The effects of smart-devices on mental health	A number of studies have demonstrated the mental health implications of excessive Internet-browsing, gaming, texting, emailing, social networking, and phone calling. However, no study to date has investigated the impact of being able to conduct all of these activities on one device. This study connects to the reason, the development of an simple app is not wished to be done by the team. The usage of a smartphone to track and treat mental health issues can be counterproductive in many ways.	[J. Harwood, J. J. Dooley, A. J. Scott, R Joiner, 2014]

Title of work	Connection to the teams field of work	Reference
The effect of nature sounds and earplugs on anxiety in patients following percutaneous coronary intervention: A randomized controlled trial	The aim of this study was to determine the effect of nature sounds and earplug interventions on the anxiety of patients after percutaneous coronary interventions. The respiratory rates and the Visual Analog Scale and State Anxiety Inventory scores of patients in the nature sound and earplug groups immediately after and 30 minutes after the interventions were significantly lower than those of the control group ($p < 0.05$). No differences were found when comparing respiratory rates, Visual Analog Scale scores and State Anxiety Inventory scores between patients in the nature sound group and patients in the earplug group ($p > 0.05$). No changes were observed in the pulse and systolic/diastolic blood pressure values of patients in the control and intervention groups ($p > 0.05$). Conclusions: It was determined that nature sounds and earplug interventions are effective in reducing the anxiety of patients following percutaneous coronary intervention.	[Ertuğ N. Koç A Akarsu K, 2019]

2.3 Research on what already exists/ best practices

We have analysed the current market with regard to mental health and devices that prevent loneliness, and have found the following cases interesting:

There are different types of proposals on the market for people suffering from mental problems such as anxiety, addictions, panic attacks. These aids come in the form of an application or a smart device such as a toy for children, a headset for listening to music, a ring or many other innovative devices, which we will discuss below.

- Mobile Applications:
 1. PACIFICA: Its an app that control anxiety. It uses cognitive behavioural therapy (CBT), relaxation and wellness principles to break the cycle of anxiety. By providing relaxation tips and goal setting.



Figure 2: Pacifica [8]

1. PALA-LINQ: Its a mobile app with widgets and web components, provides support for those trying to combat drug or alcohol addiction.

2. **VIVETEEN:** this app is a teen orientated wellbeing companion which offers chat to counsellors. It has a mood tracking, psychological and social challenges through curated text and multimedia content . This app also rewards users for interacting with the companion . It uses tools to equip the user such as calming music, breathing exercises, decision making, healthy eating, and physical exercises. The aim is to create digital support networks within the user's family or friend groups (anonymous communications about possible concerns shared with nominated people at schools). It was created in 2021.



Figure 3: Viveteen [Jludik, 2021]

- Smart Devices:

1. **SPIRE:** can detect moods, breathing patterns, and other psychological cues that indicate how its users are feeling. Then the device sends a notification to the mobile with suggestions on how to relax or wellness tips to improve mood.



Figure 4: Spire [10]

2. **MARCo:** its is a robot companion that assist mental illness as a therapeutic. It work as a support tool but cannot prevent, treat, cure or mitigate these illnesses. It collects data and stores it while turned on. It can treat mental illnesses such as depression, general anxiety disorder, and bipolar disorder. It costs around 720 USD and there is different models.



Figure 5: MARCo [William McGhee, 2017]

3. FISHER WALLACE STIMULATOR: It is headband-shaped device stimulates the brain to release serotonin and dopamine, thereby reducing stress and increasing feelings of happiness.



Figure 6: Fisher wallace simulator [12]

4. OURA RING: The Oura ring focuses on the importance of sleep in helping mental health disorders. The ring has been created solely for the benefit of its users and operates to maximize their mental states. The ring has been designed to improve the circadian rhythm of users. Oura is also used to collect a range of data that is useful for professionals to treat mental disorders. It has different types of options as heart rate monitoring, temperature sensors, guided sessions and sleep analysis. It costs around 320 €.



Figure 7: Oura ring [Oura ring, 2022]



1. SERENITY LEAF: It is a minimal anxiety tool for people suffering from a generalized anxiety disorder. The device is a two-part design that goes over your clothing connected by two strong magnets, placed flush on the inside of the device. The device sticks to the person skin with reusable adhesive and measure their heart rate, when their blood pressure is high the device buzzes. Then they can remove a component from the device and watch the light sensory expand up and down to help pace their breathing. When the person is calm their are able to return the component to the other half of the device.



Figure 8: Serenity Leaf [Katherine Rybinski, 2017]

1. **DEVICE TO ASSIST PEOPLE GOING THROUGH ANXIETY AND PANIC ATTACKS:** The main problem addressed by the product was the symptoms exhibited during panic and anxiety attacks. Mainly, shortness of breath, uneasiness, light-headedness or dizziness and needing to escape. The product has two main functions: use light signals to help the user to regulate their breathing as well as vibrations, and help the user distract themselves and try to get out of the panic headspace.

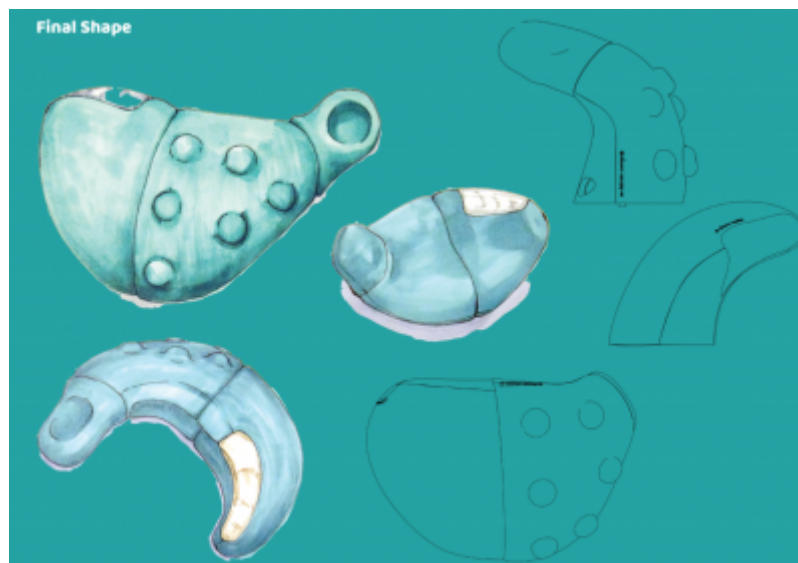


Figure 9: Device to assist people going through anxiety and panic attacks [15]

2. **SPECTRUM:** People with autism suffer a lot in social situations. They have heightened sensory issues, especially oversensitive hearing, which makes it harder for them to focus on one specific audio at a time. This extreme sound input leads to overwhelming conditions such as seizures and panic attacks. Spectrum is a noise cancelling headphones which features an optical heart rate monitoring system which constantly monitors the heart rate, detects anxiety attacks & relieves the user from the attack. It also has cardioid microphones which automatically detects and enables only the closest audio by neutralising the background noise. Only when a nearby person calls out the user's name or mentions any conversation starters (hey, excuse me, etc.) the speak only feature gets enabled.



Figure 10: Spectrum [Monica bhyrapa, 2021]

2.4 Conclusion

From reading research articles and studying products already on the market and analyzing their weaknesses and strengths, it can be concluded that although there are some products on the market aimed at helping people with anxiety, it can be said that they are not as efficient as they should be or do not offer the practicality necessary for everyday life use.

Therefore, from the study of the existing market and other academic research, the challenge for the project, besides the best use of sensors to detect anxiety attacks and relieve the user from the attack, was to create a smart companion that would promote a better user experience. For this, research was conducted on existing sensors in order to promote the best possible solution for capturing data that could detect anxiety attacks from human body signals.

For the development of the project, the team chose between two sensors that offer the best solutions available so far: Electrochemical sensors for cortisol detection from tiny volumes of sweat, and photoplethysmography (PPG), which is a simple and low-cost optical technique that can be used to detect blood volume changes in the microvascular bed of tissue.

Although the electrochemical sensor for cortisol detection from sweat offers more advantages within the context of the project, this solution, which was created recently, is not available on the market yet, therefore, the team decided to adopt the PPG as the sensor.

Furthermore, in order to create a soft and mild concept, the team decided to adopt squishy shapes as the main concept for the development of the product design.

Moreover, it is important to mention that for this project to work and succeed as a team, organization and prior planning is required. In this sense, the next chapter talks a bit about this, called “Project Management”.

3. Project Management

3.1 Scope

The Scope defines ultimately the boundries of a project, not regarding whether a product, service or process is developed. Project scope describes the deliverables in types of work that are needed to be done next to the product scope which describes the physical componants that make up the final product and also need to be created or assembled. The scope helps a project team at achieving a global vision of all deliverables that might have been done or that are yet to be completed. The visual attribute of the Scope is the work breakdown structure as it is seen in **Figure 11** and in **Figure 12**. It provides the overview that is needed in order to continously stay in sight of the state of work. “When the project team creates their project schedule and/or budget without first creating a WBS, they increase the risk of producing unsubstantiated and inaccurate schedules and budgets because they lack information about the product solution deliverables that will meet the objectives of the project [17].”

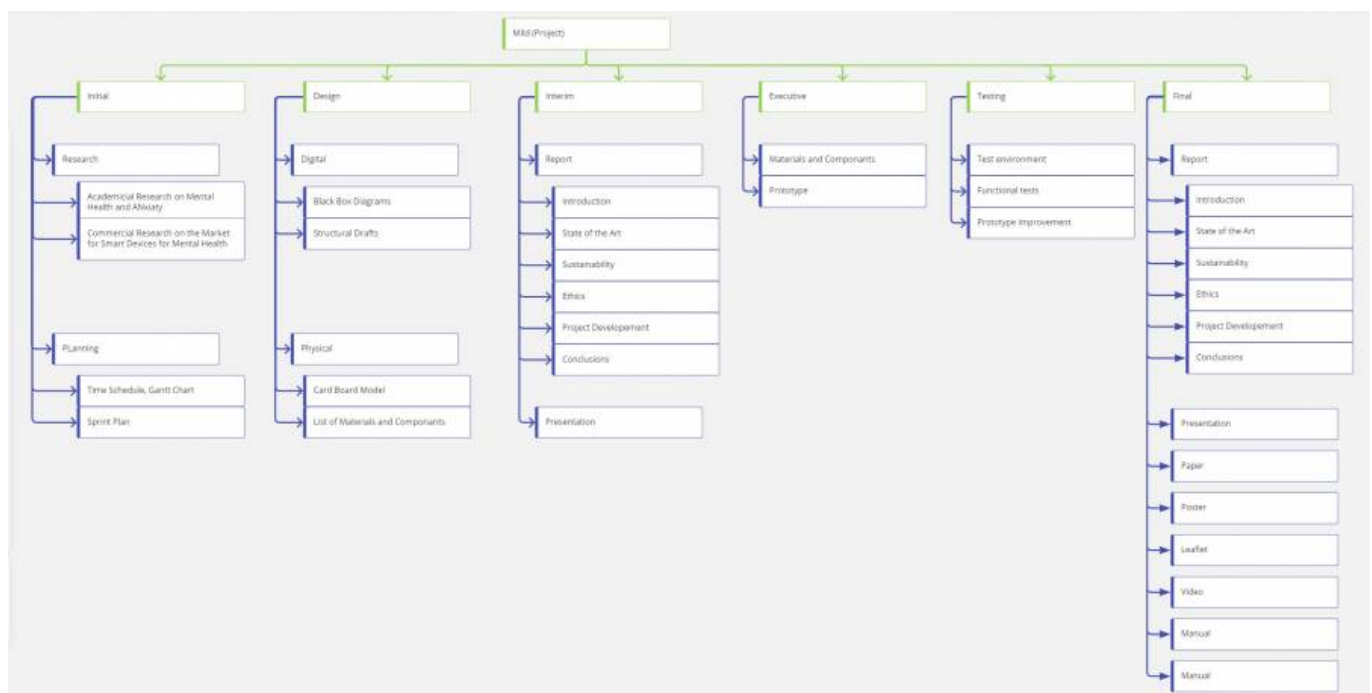


Figure 11: Work Breakdown Structure of Project Scope

Both kinds of WBS are shown here specifically for the project of “Mild”. The Project WBS **Figure 11** strictly follows the requirements of EPS@ISEP which display similar requirements in real business projects additional to EPS related tasks as a final presentation or the interim report. Next to that the Product WPS **Figure 12** follows the patterns that are guided by all actual components that are physically included in “Mild” and that need to be either purchased or produced as well as assembled. Here the hierarchy orientates itself after the three main components of the product. Beneath that it is divided in their individual functions and the components that provide this function.

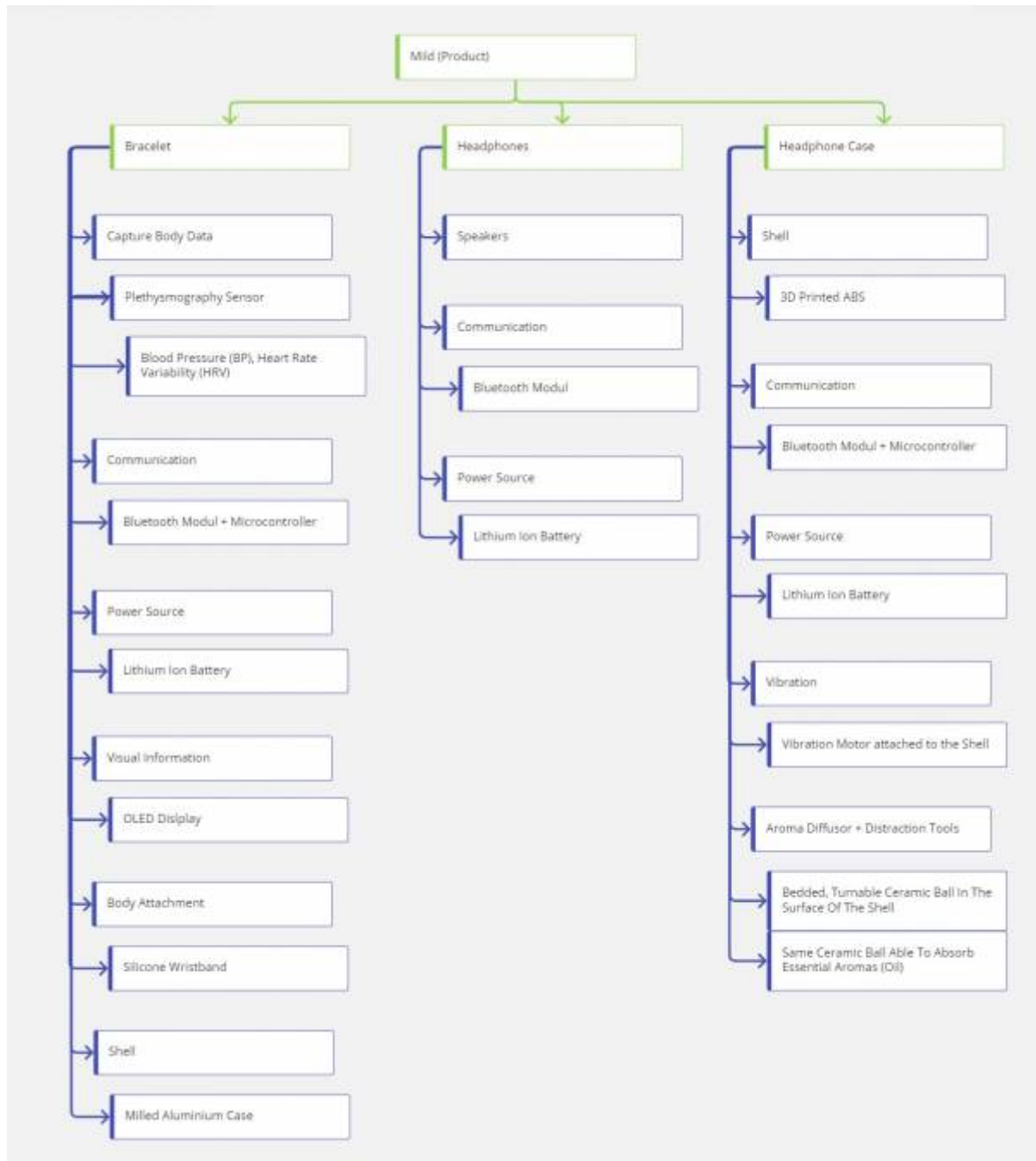


Figure 12: Work Breakdown Structure of Product Scope

3.2 Time

Keeping track of self-set or external set deadlines is key to a successful outcome of a project. The visualisation of the Gantt-Chart (after Henry L. Gantt (1861–1919)) is one of the most known tools in project management. It enables the user to see real time progress and a consideration of project complexity and effort for individual sections of the project.

For the project of “Mild” the Gantt-Chart as seen in **Figure 13** is made up of deliverables that are required by the rules of EPS@ISEP.

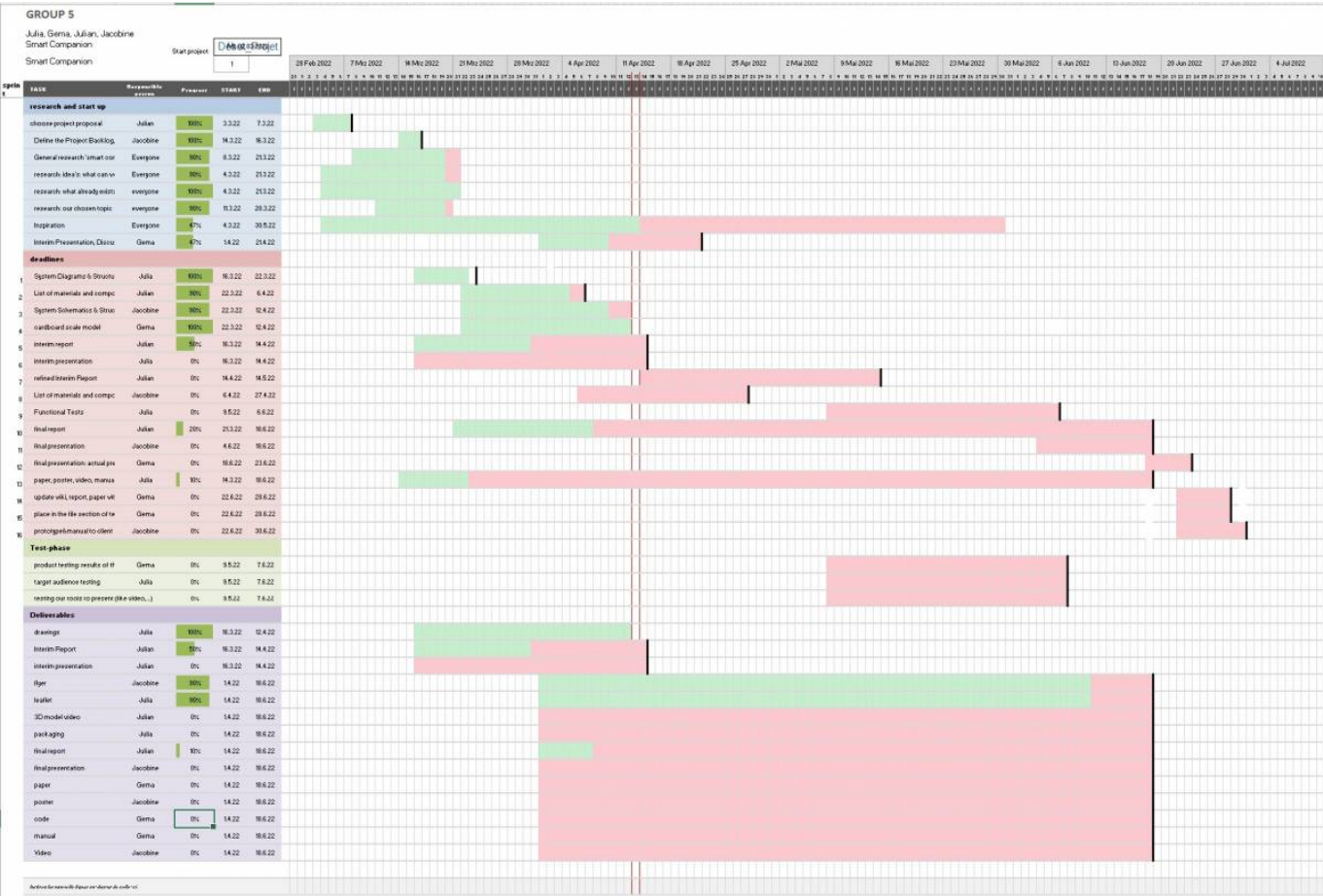


Figure 13: Gantt Chart “Mild”

3.3 Cost

Document the planned vs. effective costs of your project.

3.4 Quality

Document quality metrics that will apply to your project deliverables, associated thresholds and how they should be reviewed.

3.5 People

Identify key people related to the project and associated roles.

3.6 Communications

It is found that communication is the most important success factor in project work. Communications is a core competency connecting project team members to a common set of strategies, goals and

actions. Further research indicates 56 percent of dollars spent on projects are at risk due to ineffective communications. This effectiveness of communication reaches every part of a project's organisation. As described in chapter 3.9 that stakeholder management is only doable in a proper way with various kinds of communication techniques. The variety of channels that are available for project work make it easy to access each other and while working on a long term or short term project. In every kind of project team members need to communicate and will create miscommunication that needs to be removed again with using channels of communication. Also the exchange of information not only between team members but also between teams or organizations make the use of various channels vital. The right way of practicing it make teams high performing and lower the risk of failing for whole organisations. Various examples of miscommunication have lead to the fail of large projects. This might be due to the intercultural or interlingual communication that make it necessary to translate not only words but also ways of communicating. **[PMI, 2013]**

Attending the EPS@ISEP, the intercultural communication is a crucial part of the challenges in this project. PMI recommends the definition of a Communication Management Plan, documenting the communication methods, models, technologies and frequency. To ensure effective communication throughout the whole project and team, this communication plan needs to be developed at the start.

Main aspects of this communication plan are channels:

- Meeting in presence in the group room 515.
- Meeting online (Zoom or Teams) in order to communicate when not all members are able to attend a meeting in person.
- Sharing information and files (Teams, Whatsapp) to make each others work transparent
- Archive the content of every meeting and make them available in a shared database (Teams).

3.7 Risk

Defining the term "risk" touches a widely spread discussion among professionals occurring at the moment. The term "risk" can mean both opportunity and threat. The latest edition of the Guide to the Project Management Body of Knowledge (PMBOK Guide) published by the Project Management Institute (PMI) in December 2000, states that "Project risk is an uncertain event or condition that, if it occurs, has a positive or a negative effect on a project objective ... Project risk includes both threats to the project's objectives and opportunities to improve on those objectives." **[19]**

In all projects a minimal amount of uncertain events can or will occur from a multiplicity of sources. It is also clear that if uncertainty occurs, it can have a range of effects on achievement of project objectives, from the total disaster to the unexpected welcome surprise. This leads to the discussion of the term "risk" to have a positive and negative definition. As a result, it is common to put effort into identifying and managing threats, while opportunities tend to be overseen. In order to manage these uncertainties properly risk management is an important part of any project. It involves the following steps:

- Risk identification (Identify risks and their sources)
- Risk evaluation (Evaluate their probability and impact in a risk score as it can be seen in figure **Figure 14**)
- Risk handling (Plan risk responses)
- Risk controlling (Monitor and control risks)

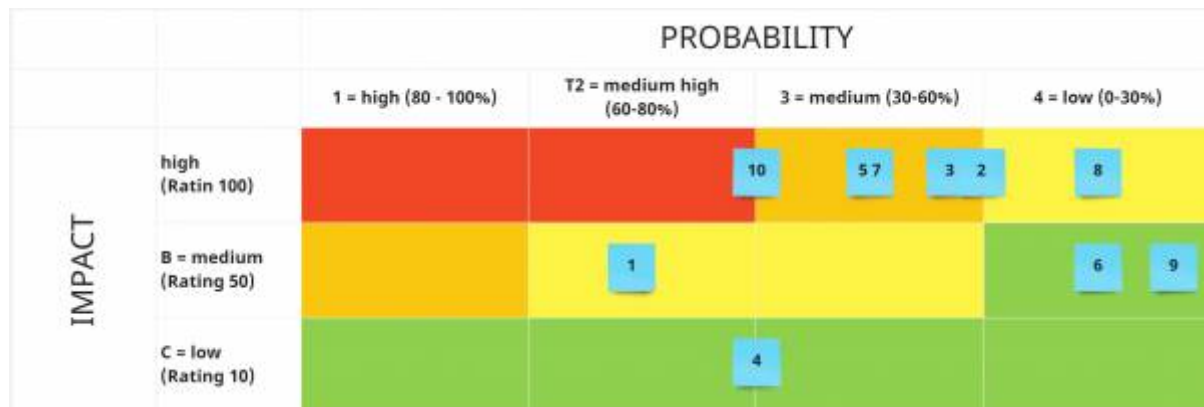


Figure 14: Impact-Probability Matrix "Mild". Risk Exposure or Risk Score is the value determined by multiplying the Impact Rating with Risk Probability.

The list of risks occurring for "Mild" including the first three steps of risk management and their characteristics are displayed in the table **Figure 3**. After [20] an adequate Risk Response can go into various directions. This risk management guideline recognizes at four types of strategy in responding to identified risks.

- Avoid (seeking to eliminate uncertainty)
- Transfer (passing ownership and/or liability to a third party)
- Mitigate (reducing the probability and/or severity of the risk below a threshold of acceptability)
- Accept (recognizing residual risks and devising responses to control and monitor them)

The intention is to provide a strategic framework of response types, which can then be transformed into actions for dealing with the risk in the right way. For "Mild" these responses are also displayed in table xxx

Table 3: Risk assessment table

Key	Risk	Cause	Detection	Risk Exposure Score	Response
Internal risks					
1	Anxiety badly treated in public, therefore, it is hard to let the costumers identify themselves with "Mild". → This could lead to an ineffective marketing strategy of the product.	Social problems. Closed society.	Bad selling of product	40	Start marketing of the product as good and healthy to place in conversation. Encourage costumers and possible buyers to talk about it more.
2	Production failures (Bad assembly of componants)	Workers or machines/facilities not working properly.	Costumers give bad reviews	30	Increase the amount and detail of testing and increase maintainance of facilities.

Key	Risk	Cause	Detection	Risk Exposure Score	Response
3	Product not effective. "Mild" does not reach the desired effective ness on impacting anxiety attacks as it is advertised.	Design poorly executed. Lack of knowledge in developement.	Costumers give bad	35	Redesign the product.
4	Fluctuation of teammembers or production personnel	Lack of motivation in production/design departments.	Productions scores shrink, Houman recources shrink.	5	Raise payments or do teambuilding measures more frequently.
External risks					
5	National/international emergency	Epidemic, natural catastrophe, war, etc.	News alerts	40	Proceed with the project to the best of our capabilities in the situation
6	Supply shortages or supply of faulty componants	Badly chosen suppliers / Supply market not working well.	Not being able to buy component	10	Enquire the supplier about product availability and quality, change the component to a similar one available one or change the supplier.
7	Software failure	Lack of tests in all execution stages	Later testing	40	More and detailed testing in production
8	Sabotage of production like hacking and data theft	Insufficient encryption when transferring data to cloud	Hard to detect unless exposed	20	Limiting sensitive data being sent to the cloud, ensure the data is properly encrypted
9	Price lowering in the market	Overavailability of recources. Good connections to supplier.	Production costs decrease	5	Accept
10	Sales success	Product designed and project executed with close to no failure.	Great selling	5	Accept

3.8 Procurement

Document your procurement management strategy including make vs buy decisions, materials/services to be acquired, sources, costs, timings, etc.

3.9 Stakeholders Management

Stakeholders are individuals or organizations that are somehow involved in the process of completing the achievements of a project. Theoretically they are ordered after their amount of power on the project as well as their support they might give to the progress of the project. This is summed up in the Interest/Influence chart that is used to determine the importance of every stakeholder that is identified. Primarily it has great importance to identify the stakeholders in the right way and characterize them with the right amount of power and support they might have. Once the stakeholders are identified in the right way their impact can be influenced by a proper way of management to ensure a positive outcome of the project. The most important aspect here is to listen to the stakeholders to understand their issues and concerns and prohibit misunderstandings that would impact the projects outcome negatively. Occasionally stakeholders might have a higher knowledge and high power in the projects business environment which makes it necessary to value their interests even more [P. Serrador, 2009].

In the case of project management for “Mild” it is necessary to profile each stakeholder after these certain points:

- Power
- Support

Table 4: Stakeholder Analysis

Key	Stakeholder	Role	Power (1-5)	Support (1-5)
A	Business Costumers (e.g. Health Insurance Companies)	Buying the product	5	4
B	Users	Using and testing the product, assesing its value	3	4
C	Psychologists Assiciations	Provide Help and Knowledge. Gain higher variaty of mental health products. Support at bringing Product in the market.	3	2
D	Sponsors (Providers of Facilities, ISEP)	Supporting and housing the project	2	4
E	Team of Coaches and Teachers	Supporting the project	3	5
F	Competitors in Market	Competing	3	1
G	Suppliers	Supplying materials for the product	3	2

The Analysis of the stakeholders [A] shows clear picture of supporters that have impact on the projects outcome. Is shows most importantly the that business costumers have. Their purchasing power is definetly the highest in this comparison, what them the most powerful and possibly supportive individuals. If managed correctly the product can be brought to many users at once by these stakeholders and the projects outcome can be supported in a positive way. On the other hand, the least supportive stakeholders are competitors [F] in the market. Their interest would be to bring their own product in a better market position than “Mild”, whereas their power on the project itself is

limited since they do not have a direct impact on the project. In conclusion of this analysis it is not found one stakeholder in the high risk area of the Interest/Influence Chart which indicates successful results of “Mild”.

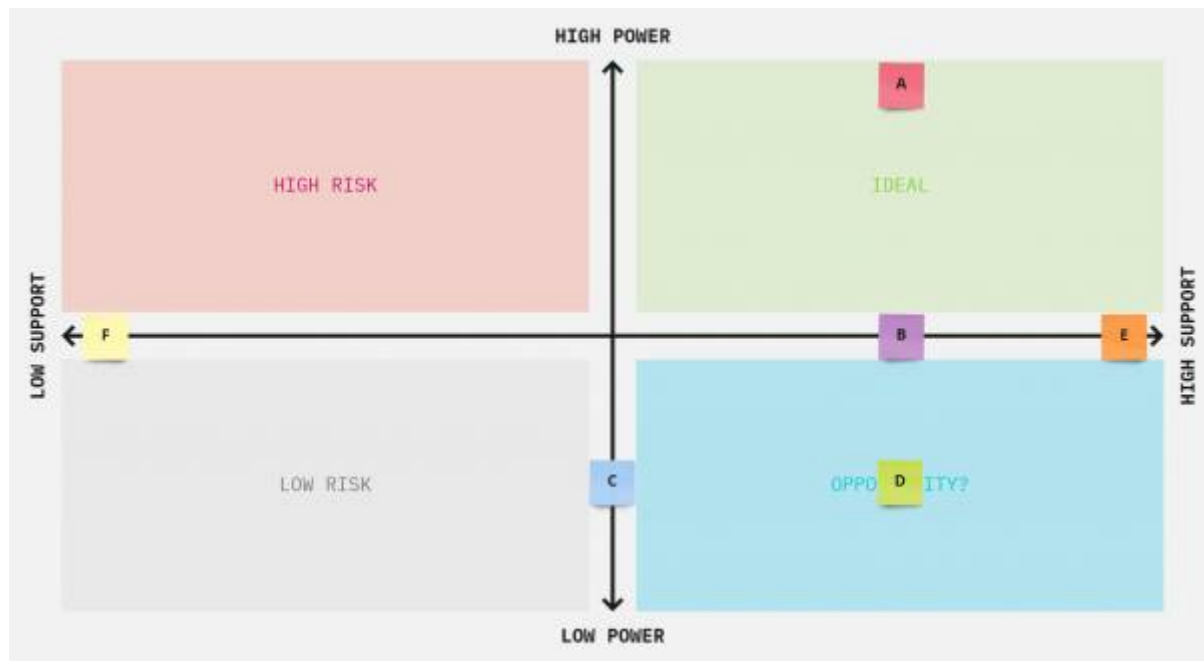


Figure 15: Influence/Interest Chart

3.10 Sprint Outcomes

Include the outcomes of all sprint reviews (what was the sprint backlog, completion status, planned capacity vs. achieved velocity).

3.11 Sprint Evaluations

Include the summary of all the sprint retrospectives, including any actions implemented as part of the team's continuous improvement strategy.

3.12 Conclusion

Provide here the conclusions of this chapter and introduce the next chapter.

4. Marketing Plan

4.1 Introduction

In this chapter we explain how DSTRS will try to bring their first product, Mild on the market. As a start-up company working in the mental health it's important to look into how we will advertise the product, and how it would be positioned in the market,...

To start we made a Canvas Business Model, to have a broad overview on our company, and our product Mild to be specific.

Our Canvas Business Model:

Business Model Canvas		Designed for: Mild	Designed by: DSTRS	Date: 6-04-22	Version: 1
Key Partners Our partner for bringing our product on the market, as well as for research would be psychologists that believe in our product. We need them to help us get our product on the market. Besides that we need their knowledge on how to deal with anxiety cases the right way. We also need to get our technology from a large variety of suppliers. We need a lot of materials and they contribute to the product itself. Other partners would be the customers themselves because they have to track their anxiety all the time to use the product correctly.	Key Activities Our company provides help for people struggling with anxiety. We want to make their daily life easier and better by putting out technological gadgets in the market. We sell them trough our website and in stores. We build up our customer relationship by always building our products according to the needs of the client. Key Resources To get our product on the market we need a good website, a good social media platform, a way to get to people struggling with anxiety for example psychologists. Practically we need to build a tracking bracelet, so we need a tracking device that can be connected to an app, we need the app itself, we need the case in different forms to the needs of the customer, the headphones, packaging for the whole product and a shipping service.	Value Propositions We bring out headphones, a case and a tracking bracelet as our newest product. The product is called Mild. Hereby we try to bring calmth, rest, peace,... in the life of our customers. We try to help solving their anxiety issues that they struggle with in daily life. We provide them with Mild, a tool that they have with them all the time. It includes an anxiety-tracking bracelet. So when the bracelet tracks that you're in an anxious mood, it will tell you to use our tool. The tool include earphones and a case for the earphones. You can use the earphones in situation where it is okay to listen to music/separate yourself from the world, and the case in other situations. Mild provides you with calming sounds, music adapted to your mood, breathing exercises, a distraction tool on the case, a calming smell and feel to it, vibrations to help you breath and a companion in every situation.	Customer Relationships We want to create deep and good customer relations because It's important in our target audience. The people using our brand should know we try to adapt the products exactly to their needs. For example we will change the cases, so the customer can chose what he/she thinks is helpful for them (smell, feel, vibration,...) Channels We will promote our tools as well on a website and social media, which is a cheap form of getting our product on the market. But we will also try to get our product on the market by psychologists that could sell/ recommend our product to their patients. We will have to put effort into this, by proving our concept works to these psychologists.	Customer Segments Our customers are people who struggle with anxiety in daily life. This may not seem like a big audience, but it is. 1/10 people struggle with anxious feelings in daily life, and according to our own tests it may be even more. By anxiety we mean big anxiety attacks, but we certainly also mean the normal anxious feeling that a lot of people deal with on daily base: too busy metro's, stress for a presentation, car drives, air plane anxiety,... We would reach out to them trough their 'mental illness', although our product could also be used by people who don't struggle everyday. We want our customers to be able to use our product in both states, anxious-period, or normal period. The tracker should be worn on the anxious days/periods, if you don't struggle for a while you can only use the earphones and case, without the tracking function.	
Cost Structure The main goal of the product Mild is to help our customers with their problem in a convenient, easy and cheap way. Headphones, especially with a tracking system is of course still a product that we can't sell on a very low price, but we try to keep the costs as low as possible so we can sell the product to a 'low' price as well. Costs we make for the product: - Materials - Shipping of materials - Shipping of product to customer - Packaging - Advertising - Website		Revenue Streams The value we want to highlight, what makes us different than other people, is the fact we track your anxiety level, so you don't have to feel yourself when to use our tool, because if we would do that, it's usually too late. That's what makes our product a better product than other anxiety tools. It of course makes it more expensive, because it is combined with earphones. Earphones are on the market a lot these days, but not with the same calming, suiting results as ours. There's so much more that comes with our product then normal earphones. We think that people who struggle with anxiety would like Mild a lot, and are going to be willing to pay for it, because it helps their problem in a more flexible way than all of other fast calming methods.			

Figure 16: Screenshot of our Canvas Business Model, HQ version:
t5_dstrs_business-model-canvas.pdf

Afterwards we started building out our marketing strategy and took a look at the following topics: - the market analysis, who we are building our product for

- our SWOT analyse; what are the strengths, weaknesses, threats and opportunities in our product
- our strategic objectives, the big picture goals for the company
- the segmentation, how we can divide our users for promotion and reaching them
- our strategy and positioning in the market, where we will compare our product to existing products in our fields
- the adapted marketing mix, the 4 p's in marketing adapted to our project
- the budget
- the strategy control

After we discuss all these chapters we know where we are on the market, where we want to be and hopefully how we will try to become there.

4.2 Market Analysis

The Mild customers are people who struggle with anxiety in daily life. This may not seem like a big audience, but it is; 1/10 people struggle with anxious feelings in daily life, according to our own tests it may be even more. The need for a product like Mild is increasing a lot. As we all know the previous years were consumed by a pandemic called COVID-19. This pandemic triggers a 25% increase in prevalence of anxiety and depression worldwide [22]. Our market is growing.

By anxiety we mean big anxiety attacks, but we certainly also mean the normal anxious feeling that a lot of people deal with on a daily base: too busy metro's, stress for a presentation, car drives, air plane anxiety,... All these types of people struggling with anxiety can use Mild to calm themselves down. We narrowed our target audience down by creating Mild for the age group in between 18 and 30. Mild is consisting of headphones, a case for the headphones, a tracking-bracelet, and an app to control all its functions. These technological gadgets fit perfectly into the life of this target audience. We would reach out to them through their 'mental illnesses', although our product could also be used by people who don't struggle every day. We want our customers to be able to use our product in both states, anxious-period, or normal period. The tracker should be worn on the anxious days/periods, if you don't struggle for a while you can only use the earphones and case, without the tracking function.

The market DSTRS will try to conquer is very big, but small at the same time. There are a lot of anxiety tools on the market, as well as a lot of headphones. The combination is what makes our product, Mild, innovative. There's been focussed on de-stressing by the use of headphones before, but it usually comes down on having a good sound blocking system as well as a well working transparency mode. We will try to combine all these needs and extra's in Mild.

Our own findings from our survey in the following figures:

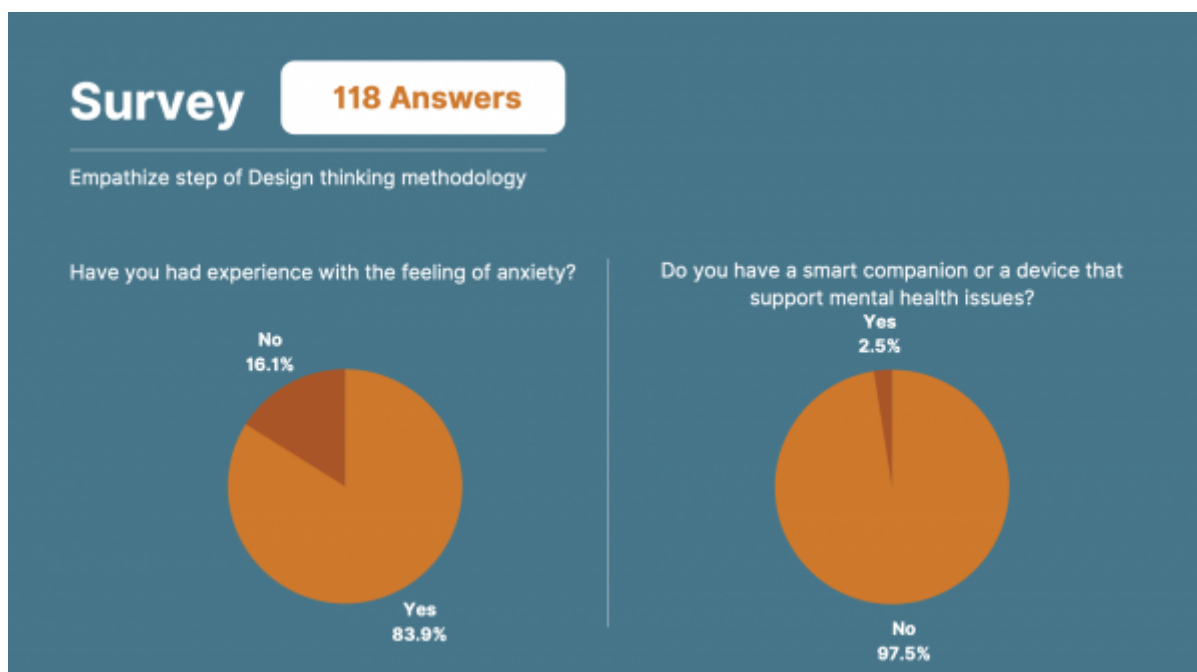


Figure 17: Findings of our own survey

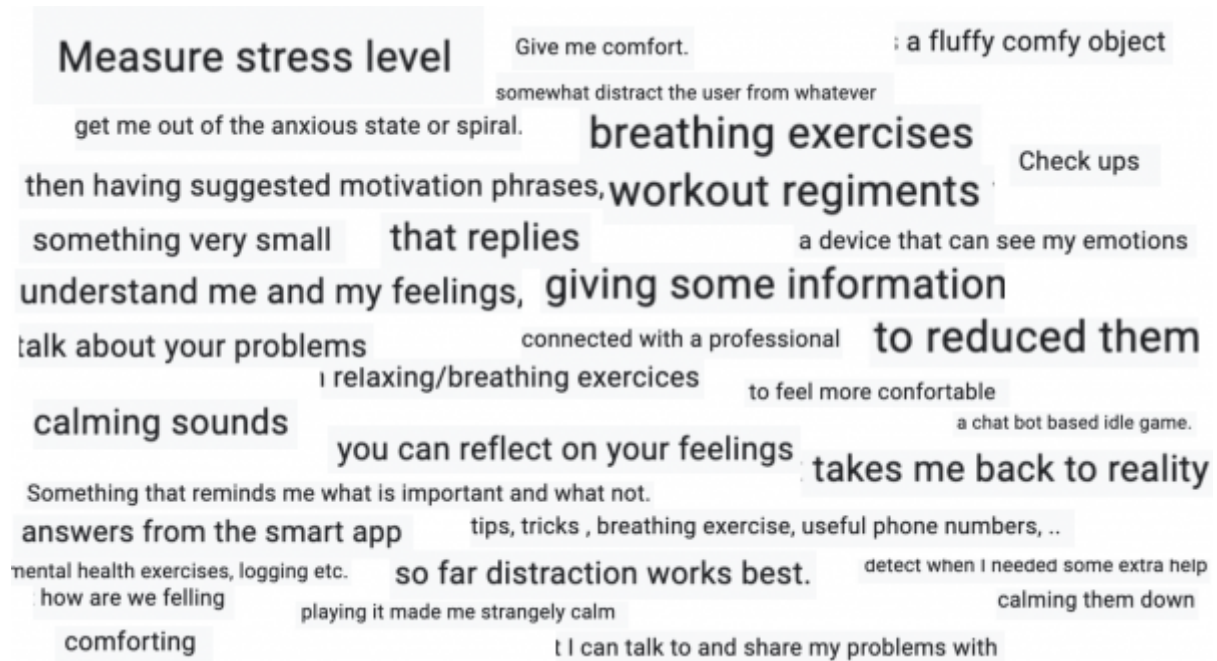


Figure 18: Findings of our own survey

4.3 SWOT Analysis

SWOT analyse Mild: Here you can see our strengths, weaknesses, opportunities and threats in our business DSTRS, more specific in our product: Mild. We concluded them in a clear table down below.



Figure 19: SWOT analysis Mild, HQ:
t5_dstrs_swot_analysis.pdf

4.4 Strategic Objectives

DSTRS is a start-up company who created Mild as their first product. The big picture goal for our company for now is to successfully launch our new product Mild, get a good position on the market

and help our target audience. For now DSTRS is focusing on researching the needs of the costumers, to find their place in the market. We want to approach our target audience through their illnesses, what makes our strategy different than other technological gadgets like ours. We will try to get through to some customers by recommendations from their psychologists,... Where DSTRS wants to be in the future would be to have a place in the market, be well known in our target audience and maybe collaborate with other companies who would see us as an addition to our company.

4.5 Segmentation

With DSTRS's market segmentation the target market got divided into smaller, more defined categories. DSTRS can make a difference in - Psychographic segmentation - Demographic segmentation - Behavioral segmentation The geographic segmentation is not applicable to our product Mild. If our product is on the market it would first ofcourse start in Porto, Portugal, but it wouldn't be designed only for them or specific to this geographic area. Earphones are something very generalized in most western countries.

Psychographic segmentation: This would mean for Mild that we can focus on different lifestyles and opinions in our target group. - We can focus on the busy, busy lifestyle. People who are always doing something, taking a busy metro in the morning, getting to work, presentations and meetings all day, busy family life afterwards,... We could target these people by the trait of Mild being able to calm them down in their busy lifestyle, on busy moments having a distractor/something to quickly react to their anxiety level.

- We could also focus on people living a more normal life, but get stressed over little things. Students living with their parents, and studying in their room. They get stressed from the school work or from conflicts with their parents, and they might need Mild to calm themselves down.

- ...

Demographic Segmentation: The things that could make a difference in this part: - Gender: We could target our product Mild for all genders, but we can advertise it more specific, which makes that we can make use of demographic segmentation. - Age Our age group is 18-30, which is still far away from each other. We could advertise more for students (18-24) in some way, for example talking about studying and stress that comes with that. And on the other hand we could be advertising for the young adults (25-30) that just start working and have to figure out how to live adult life. That comes with a lot of stress and anxiety as well. In all these age categories there's a lot of trigger points we can work on. - Family size Family size could even be a segmentation, we could advertise from the point of view that you're in a big family, never alone, can never find rest and peace, which gives you anxiety and stress. Or we could advertise on having a small family, for example just moving in an apartment by yourself, which comes with loneliness and stress.

- Income Lastly income can also play a part in the way we would advertise Mild. Because it is an electrical gadget it doesn't have a low price, but we will still try to advertise for both. We want our price to be reasonable also for less rich people.

4.6 Strategy/Positioning

STRATEGY

To position ourself into the market we need to know what our product is, we tried to make this more clear with an elevator pitch:



Figure 20: Elevator Pitch Mild

The elevator pitch gives us a clear view on our product and for who our product is meant. The 'for who' we tried to make more clear by creating a persona:

PERSONA

/// USER PROFILE

Client

Project

Date



DEMOGRAPHICS

Name Luka

Age 23

Gender Female

Status Single

Education Student Nutrition

Employment parttime intern and fulltime student

Income 500/month

Location Germany

Bio (Shorthand)

Luka lives alone, doesn't live in a residence or shared apartment. She has two close friends. She works all the time, for work or for school. She used to live with her dad, but she moved out. She struggles with anxiety because she works so much for her studies and money because she wants to get good grades, and can't contain a social life.

Needs/Frustrations

She can't relax and get's anxious about it, so she needs something that gives her more peace in those moments.

She needs to have more peace about money as well, her financial situation is not the greatest. She needs money from work and the government.

Motivations

Have good grades, work hard, earn more money than she's used to, and still have time for her friends or for making friends.

The most important thing is to stress less about these things, because it influences her life too much right now.

Brands

She cares about sustainability but she wants to save money a lot, so she never buys expensive things. She uses for example 'too good to go' and Vinted.

PSYCHOGRAPHICS

- She likes listening to music in the nature
- She likes being single
- She doesn't have contact with her mother
- She seems shy, so she doesn't talk a lot about her problems
- She thinks about having a cat, but she's afraid she doesn't have the time.
- She likes anime

BEHAVIOURISTICS

When she has free time she doesn't know who to call, because she doesn't have enough friends. She sometimes goes out for dinner with her colleagues but tries to be in bed early most of the time.

She is good at what she does in her internship.

Figure 21: Persona Mild

Because of these two things we have a better strategy on how to approach our target audience and to know who we're selling too. Our persona is only an example of a user, our target audience itself is way more broad.

Target audience summerized:



Figure 22: Target audience

POSITIONING

The positioning of Mild can be seen in two categories: - earphones - anxiety tools

Because it is a mix of both...

This could be a goal of the positioning of Mild:

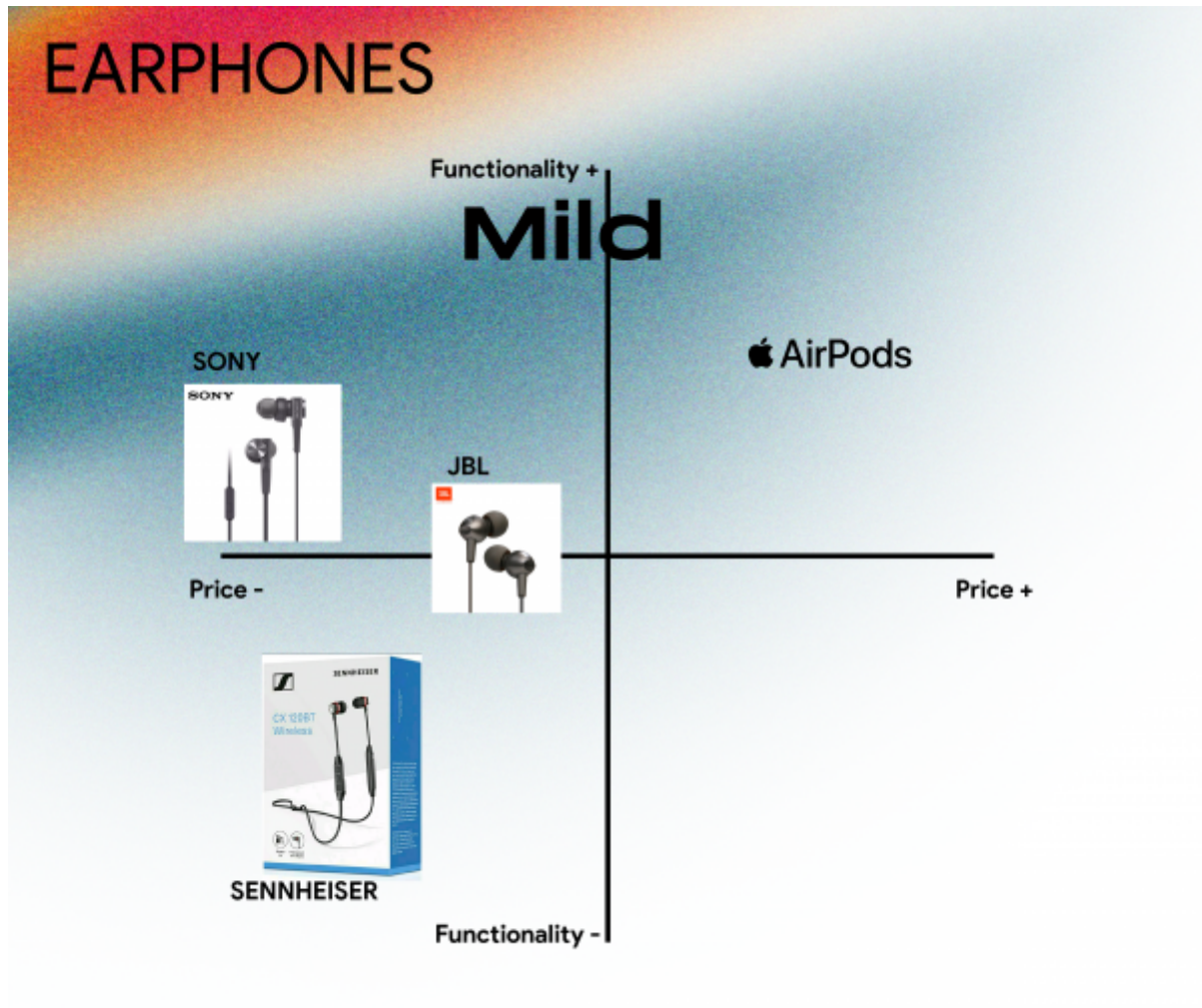


Figure 23: Positioning Mild in earphones-market

This could be our position for the most well-known anxiety tools that are used nowadays:

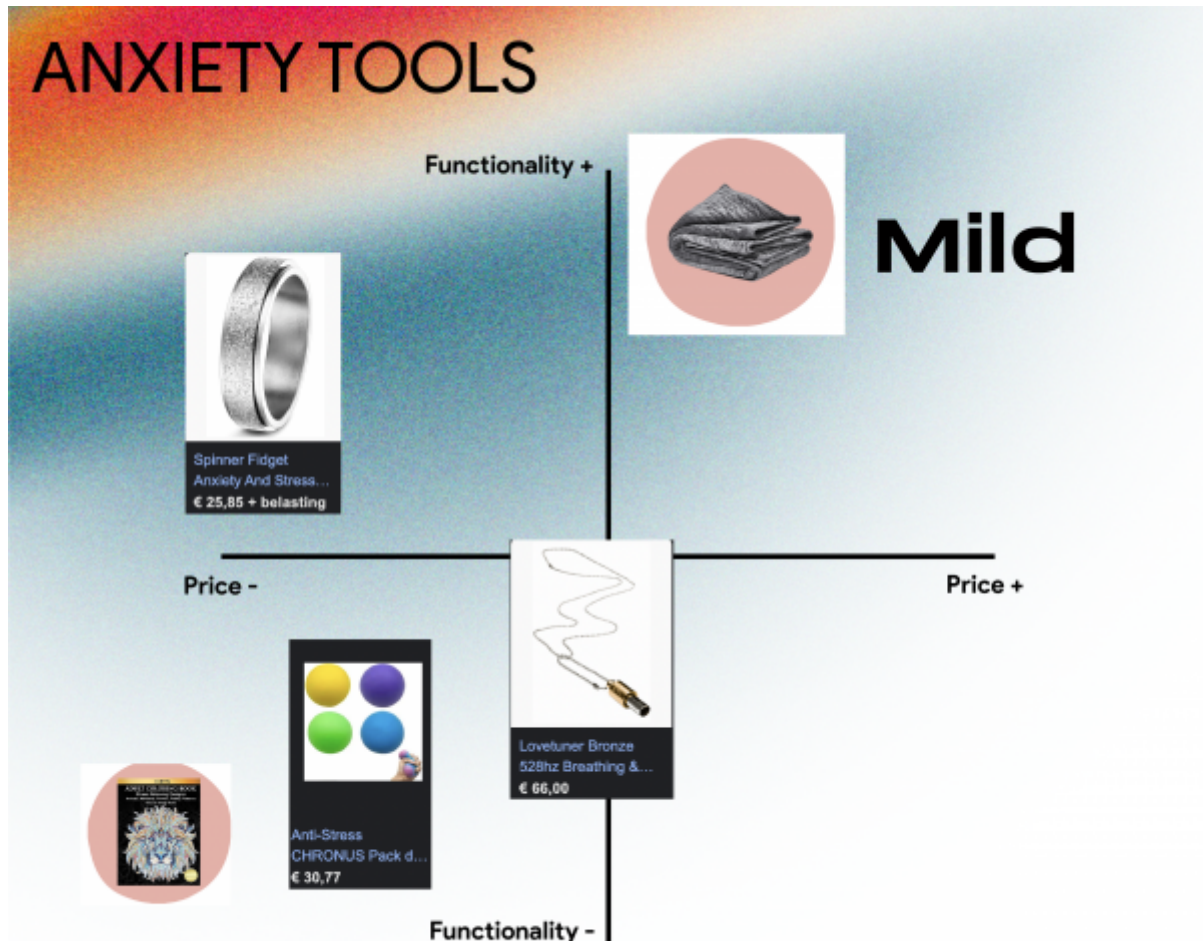


Figure 24: Positioning Mild in anxiety tool market

4.7 Adapted Marketing-Mix

Marketing mix – the 4 p's of marketing:

- **Product:** Mild. Earphones- case- tracker To calm you down when you need it. For people like you and me, struggling with anxiety. Mild tracks your mood and anxiety level constantly so you get help before you even need it. Mild tracks anxiety all day long by the use of a tracker on your wrist. Mild plays music, calming sounds or breathing pastes to your need. Mild includes a case that can be used to calm you down by vibrations, a distraction tool smell and a soft feel. Mild has perfect noise-cancelling and transparency mode. All to be controlled easily by an app on your phone.

- **Price** *How much do you charge and how does that impact how your customers view your brand?*

- **Place:** We will promote our tools as well on a website and social media, which is a cheap form of getting our product on the market. But we will also try to get our product on the market by psychologists that could sell/ recommend our product to their patients. We will have to put effort into this, by proving our concept works to these psychologists.

- **Promotion** As stated above, they would find out about the product throughout social media and a website. Or throughout their psychologist. Because people with a severe form of anxiety is not our only target audience is it important to also focus on the first two channels because those people are not all going to a psychologist.

4.8 Budget

4.9 Strategy Control

4.10 Conclusion

Provide here the conclusions of this chapter and introduce the next chapter.

Based on this market/economic analysis, the team decided to create <specify the type of product> intended for <specify the market niche> because ... Consequently, the team decided to create a product with <specify the features>.

5. Eco-efficiency Measures for Sustainability

5.1 Introduction

Provide here the summary of this chapter.

5.2 Environmental

Refers to the impacts that the company's activities generate on the environment and what measures are taken to avoid or mitigate the risks of this interference. There are countless ways to adapt the production chain by incorporating new manufacturing measures, other materials, or equipment that does not pollute. Technology has contributed immensely with innovative solutions to make industries less harmful to the ecosystem.

Today, global warming, like other environmental problems, is a widely discussed issue. Despite this, many companies compromise the environment on a daily basis with unsustainable and polluting practices.

In this sense, in the environmental field, it is possible to create actions to minimize the negative impacts caused by the activities, using raw materials, recycling, and renewable energy sources efficiently.

In addition, the reduction of the carbon footprint is also encouraged, such as the correct disposal of the product's packaging waste.

5.3 Economical

In the economic context, the focus is on profitability, but one must profit while the company sustains the use of natural resources and makes possible the quality of life of its employees.

In other words, the mistake many companies make is to have profit at all costs as their main goal. Adopting measures in favor of employees and the planet result in positive numbers at the end of the month. When the brand invests in the team and incorporates sustainable actions, it consequently improves productivity, competitiveness, and results.

Another fundamental point is the long-term vision, the “sweet spot”, in which customers perceive the brand's sustainable responsibility and see added value in its service, establishing a lasting partnership and identification between the interests of stakeholders and the corporation.

Therefore, the team's main goal is to focus above all on improving the quality of life of the product's users, viewing the brand and the product as adding value from sustainable responsibility.

5.4 Social

In the social field, its function is to provide quality of life for people directly or indirectly connected to the company, inside or outside the company.

Employees are a company's most important asset, and this is further proof of how essential it is to take care of the organizational culture. The treatment that employees receive and the working conditions are the main aspects that must be prioritized by sustainable organizations, from respect and compliance with labor standards.

Therefore, based on this, the company responsible for the product will aim to create a responsible and sustainable work environment, respecting human rights and privacy issues.

5.5 Life Cycle Analysis

Life Cycle Analysis is a technique developed to measure the potential environmental impacts caused as a result of the manufacture and use of a given product or service.

The life cycle of a product refers to all stages of production and use. In other words, the extraction of raw materials, through production, distribution to consumption and final disposal, also contemplating recycling and reuse when appropriate.

The ISO 14040 series of standards determine the structure, principles, requirements, and guidelines that should be included in a life cycle assessment study. Steps of a life cycle assessment study according to the standards:

1. **Definition of Objectives and Scope**
2. **Inventory Analysis**
3. **Impacts Evaluation**
4. **Interpretation**

5.6 Conclusion

Provide here the conclusions of this chapter and introduce the next chapter.

Based on this sustainability analysis, the team chose *<specify here the design, technique(s) material(s), component(s)>* for the following environmental reasons...

6. Ethical and Deontological Concerns

6.1 Introduction

Deontology is an ethical theory that says actions are good or bad according to a set of rules. Its name comes from the Greek word deon, which means duty. Actions that comply with these rules are ethical, others are not. This is associated with the German philosopher Immanuel Kant, who believed that the ability to use reason was what defined a person.

Kant's ethics is not the only example of deontology. Any system that involves a clear set of rules is a form of deontology, which is why some people call it a "rule-based ethics". Most deontologists say that there are two different types of ethical duties, perfect duties and imperfect duties. A perfect duty is inflexible. Imperfect duties allow for some middle ground. We must do our duty just because that it is the right thing to do.

Ethics is based on well-founded standards of right and wrong that prescribe what humans ought to do, usually in terms of rights, obligations, benefits to society, fairness, or specific virtues. Deontological ethics "in philosophy, ethical theories that place special emphasis on the relationship between duty and the morality of human actions. In deontological ethics, an action is considered morally good, not because the product of the action is good, but because of the characteristic of the action. Deontological ethics also raises awareness of the consequences of each individual's action"

6.2 Engineering Ethics

Engineering ethics is the branch of applied ethics that brings together the set of moral principles established for the practice of engineering. It examines and establishes the obligations of engineers to society, clients and the profession. It is linked to the ethics of technology and related to the philosophy of science and the philosophy of engineering.

Canon sets out the following principles:

- Engineers regard safety, health and public welfare as of paramount importance and shall strive to comply with the principles of sustainable development in the exercise of their professional functions.
- Engineers shall provide services only in areas of their competence.
- Engineers should make public statements only in an objective and truthful manner.
- Engineers should act in professional matters for each employer or client as faithful agents or

representatives, and should avoid conflicts of interest.

- Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
- Engineers shall act in such a manner as to maintain and enhance the honour, integrity and dignity of the engineering profession and shall act with zero tolerance for bribery, fraud and corruption.
- Engineers shall continue their professional development throughout their career, and shall provide opportunities for the professional development of engineers under their supervision.
- Engineers shall, in all matters relating to their profession, treat all persons fairly and encourage equal participation without regard to gender or gender identity, race, national origin, ethnicity, religion, age, sexual orientation, disability, political or family affiliation, marital or economic status.

Rules of practice

- Engineers shall consider the safety, health and welfare of the public to be of paramount importance.
- Engineers shall provide services only in the areas of their competence.
- Engineers shall make public statements only in an objective and truthful manner.
- Engineers shall act for each employer or client as loyal agents or fiduciaries.
- Engineers shall avoid misrepresentation.

Professional duties

- Engineers shall be guided in all their dealings by the highest standards of honesty and integrity.
- Engineers shall always strive to serve the public interest.
- Engineers shall avoid any conduct or practice that misleads the public.
- Engineers shall not disclose, without consent, confidential information relating to business matters or technical processes of any current or former client or employer, or of any public body in which they serve.
- Engineers shall not be influenced in their professional duties by conflicting interests.
- Engineers shall not attempt to obtain employment, promotion or professional commitments by mendacious criticism of other engineers, or by other improper or questionable methods.
- Engineers shall not seek to damage, by malice or misrepresentation, directly or indirectly, the professional reputation, prospects, practice or employment of other engineers. Engineers who believe that others are guilty of an illegal or unethical practice shall bring this information to the attention of the appropriate authority for appropriate action.
- Engineers shall accept personal responsibility for their professional activities, provided that they are able to seek compensation for services arising from their practice, except in situations of obvious negligence, in which case the engineer's interests cannot be protected.
- Engineers shall give credit for engineering work to those to whom credit should be given, and shall recognise the copyright interests of others.

6.3 Sales and Marketing Ethics

Ethical marketing is not a marketing strategy, but a philosophy that must reach all levels of the company. It consists of making morally correct marketing decisions. You have to make every marketing decision taking into account not only the business return or profit, but also the moral perspective: whether or not a decision is ethically correct.

This behaviour is in line with new consumer demands.

The effort a company makes to make its communications and marketing more ethical will have a positive impact on all areas of the business.

Applying ethical marketing to a company's strategy will bring about the following benefits:

- It gives prestige to the company and enhances its reputation.
- It adds value to your product.
- It favours business and improves sales.
- It avoids bad practices.
- It establishes long-term relationships with stakeholders and customers.
- Improves staff quality, team cohesion and commitment.
- Improves competitiveness.
- It facilitates the connection between consumers and the brand.

Unethical marketing is evolving and new forms are emerging, as with all forms of marketing. And most of them are not only unethical but also illegal.

The “Institute for Advertising Ethics” published a list with 8 basic principles of ethical marketing:

1. All marketing communications shall share the standard of truth.
2. Marketers will abide by the highest standards of personal ethics.
3. Advertising should be clearly differentiated from news and entertainment editorial content.
4. Marketers should clearly state who they pay to promote their products.
5. Consumers should be treated with their nature and characteristics in mind (e.g. marketing to children).
6. Consumer privacy will never be compromised.
7. Marketers will comply with laws and standards set by governmental or professional organisations.
8. Ethical issues will be discussed openly and honestly during marketing decision making.

In our team we will do an appropriate designs of labels, we will respect the laws and standards, we will sell efficient and beneficial products, we will try to be as clear and accurate as possible in order to have a good communication with customers and with all members of the project, we will establish transparency. We also will promote responsibility, fairness and honesty.

6.4 Environmental Ethics

Environmental ethics is the branch of philosophy that considers in particular the relationship between people and the environment in which they live, and is especially concerned with regulating the actions of human beings so that they do not threaten the development and evolution of the natural environment.

In the middle of the last century, the damage perpetrated on the environment by both industry and

people with little awareness of respect for the environment began to be publicly denounced.

This growing situation triggered the need for the creation of a specific space that would ensure the care of our nature and, if not, would punish those who do not act in this sense.

A scale of values that invites responsibility and care for the environment, i.e. environmental ethics proposes a moral standard that demands responsibility on the part of companies and people in terms of caring for our natural environment.

The fundamental proposal of this branch of ethics is to ensure the well-being of society and nature so that human beings can develop in a well-cared-for natural environment.

Environmental ethics, therefore, provides a set of arguments related to the conservation of the planet and directed at people's practices. These are fundamental considerations for environmental decision-making, setting priorities in research and studies, publishing results of environmental impacts, and setting policy.

Regarding our project in terms of environmental ethics, our team will reach the maximum product life as possible, we will use environmentally friendly materials to build our products, we will reuse components that are in good conditions, we will try to increase energy efficiency. And last but not least, we will try to reduce waste and packaging.

6.5 Liability

As human beings we perceive and are aware, to varying degrees, of existence and its conditions. And we respond to this fact, either through actions or omissions. Thus, if we are aware of the deterioration of the planet, this demands a personal and collective response, for example, by reducing our ecological footprint by not buying products that we know damage the environment, or perhaps by not driving a car on certain days of the week. This ethical responsibility arises from our very fact of existing and being aware of the world we live in.

Concerning the EPS project, our team must comply with the following EU Directives to avoid product liability issues:

- Machinery Directive
- Electromagnetic Compatibility Directive (EMC)
- Low Voltage Directive (LVD)
- Radio Equipment Directive (RED)
- Restriction of Hazardous Substances Directive (ROHS)

6.6 Conclusion

Provide here the conclusions of this chapter and introduce the next chapter.

Based on this ethical and deontological analysis, the team chose *<specify here the design, technique(s) material(s), component(s)>* for the following ethical reasons...

7. Project Development

7.1 Ideation

(blackbox diagram, structural sketches and cardboard model)

Taking the previous chapters into consideration, we will show the process of bringing our ideas to life and the creative process of creating the product from the first sketches to the final version.

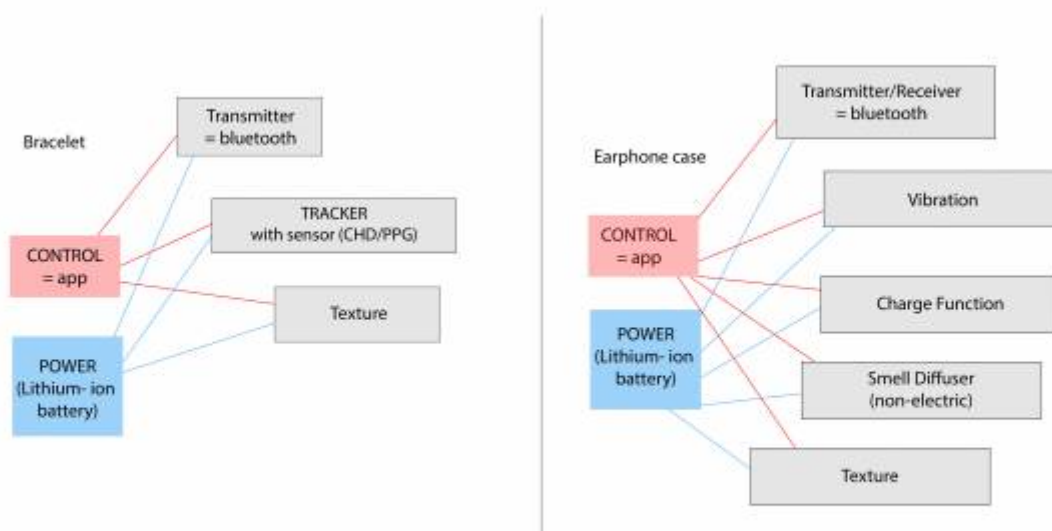


Figure 25: Blackbox

Structural sketches

This stage of ideation included brainstorming ideas, breaking conversations, building a fresh product from ground up, making free and abstract forms and shapes.

From the first sketches, shapes were defined for the final product design concept. In order to create a soft and mild concept, the team decided to adopt squishy shapes as the main concept.

Clay model

Clay model for initial ideation was done to understand the proportion of the earpods case.

7.2 Concept

(logo, elements, requirements, concerns and regulations)

Our company DSTRS, a mental health company focussing on electro gadgets. DSTRS.co logo:

The logo for DSTRS.CO is displayed in a large, bold, black, sans-serif font. The text is centered horizontally and vertically within the frame.

Figure 26: Logo DSTRS

Our first product: Mild. An anxiety companion. Mild logo:

The logo for Mild is displayed in a large, bold, black, sans-serif font. The text is centered horizontally and vertically within the frame.

Figure 27: Logo Mild

The elements in our product:

- Tracker

Function: tracks your anxiety level all day long, and sends information to the application that's connected.

- Application

Function: gets information from the tracker and tells the user when the anxiety level is too high. When this is the case the user can easily control its preferred solution for the problem. He/she can choose to play music according to your mood, play calming sounds, play breathing exercises or to use the earphone case to practice breathing exercises.

- Earphone case

Function: Mild's case has a soft surface, which makes the user able to feel that when anxious. It also has a distraction tool where the user can play with a button on the case to calm down, this button will also provide a smell-diffusion with calming effects.

- Earphones

Function: Play the commands of the application: music, sounds, exercises,...

Requirements for the user to be able to use our product would be a working smart phone and the will to wear our tracking bracelet all day long.

Our concerns would be the price of our product being too expensive for some people who need it, and as stated above, the will of the user to wear a bracelet everyday that tracks your anxiety level.

7.3 Structural Design

(selection of materials, detailed drawings, load and stress simulation tests)

Table 5: caption

bracelet			
name	description	materials needed	size
Plenthysmography (PPG) iHaospace MAX30102	measures heart rate variability (HRV) and blood pressure (bp)	Sensor chip	5.6mm x 3.3mm x 1.55mm

7.4 System Design

(choice of components, detailed schematics, simulation)

t5_dstrs_list_of_materials_official.xlsx

The current version of the list of materials is yet to be updated and implemented into the wiki.

7.5 Prototype

(in case it is a downsized version of the designed product)

7.6 Tests and Results

7.7 Conclusion

Provide here the conclusions of this chapter and introduce the next chapter.

8. Conclusions

8.1 Discussion

Provide here what was achieved (related with the initial objectives) and what is missing (related with the initial objectives) of the project.

8.2 Future Development

Provide here your recommendations for future work.

Bibliography

Will be added automatically by citing, in the body of the report, entries specified in BibTeX format and stored in the <http://www.epswiki.dee.isep.ipp.pt/doku.php?id=refnotes:bib> file

PS - If you have doubts on how to make citations, create captions, insert formulas, etc. visit this [page](#) with examples and select "Show pagesource" to see the source code.

[Holland K., 2020], [Holland K., 2020] Holland K., 2020. *Everything you need to know about anxiety*. [Accessed in March 2022].

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