NEUROFEEDBACK VIRTUAL REALITY

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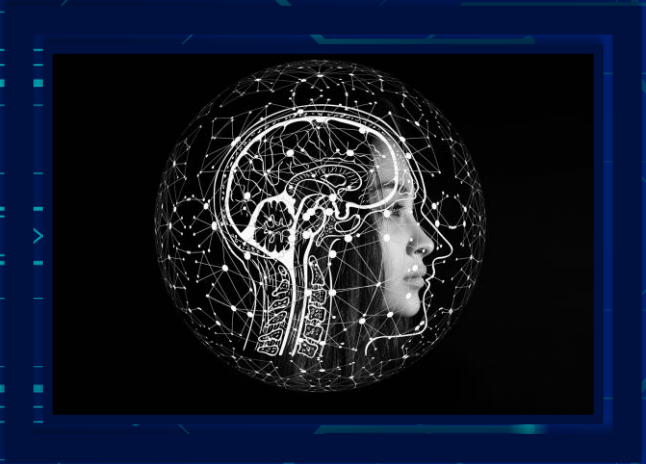
01 Introduction



The main role of the brain is learning. Brain plasticity, also known as neuroplasticity, is a term that refers to the brain's ability to change and adapt as a result of experience. Thanks to neuroplasticity, the brain has the ability to improve its own performance.

Neurofeedback

Common conditions like depression, ADHD, anxiety, concussions, and more occur when brain waves aren't working together in perfect balance. The brain won't work efficiently until all of its regions are working in alignment. This is where neurofeedback comes into play.

Compared to medication, neurofeedback has been shown to create long-term changes in the brain/behavior when the treatment is stopped, as neurofeedback is based upon changing the brain directly through neuroplasticity and learning. It aims to actually treat the core problem rather than simply masking symptoms.

Whilst stimulant medications can be effective for up to 12 hours benefit, completing a program of neurofeedback is found to have long term benefits (with current research showing benefits present after 5-10 years post treatment).

02 Neurofeedback Virtual Reality

In order to establish the presence of a certain cognitive disorder, the user goes through a series of tests, interactive simulation tests which are created on existing tests and method, where a team of experts further evaluates and makes a plan about the program and the intensity of further treatment.

Requirements:

- Sensors for measuring biophysical signals (SpO2, blood pressure and electrical activity of the brain in real time)
- VR headset
- Team of professionals(psychologists, psychiatrists, neurologists, electrical engineers, biomedical engineers.)

Neurofeedback Virtual Reality

After discovering the condition that needs to be improved, the user starts with the program.

The processor unit extracts significant data and uses them to generate control values of the simulation unit. It also stores all incoming data in a permanent database from where it can be used as needed for analysis, research or as data to improve the system that generates and manages simulations.
Simulation unit communicates with the processor unit in real-time and provides users with an experience that can trick our brains to believe that we are somewhere else entirely, in interesting and sometimes unexpected ways.

For example: If the user has a fear of public speaking, the simulation would require that the user needs to improve the ability of public speaking. The simulation would be adapted based on the users performance and biophysical measurements taken in real time.

Market Problem/ Proposed Solution

03

Although many psychological disorders have a significant basis in neurobiological dysfunction, most approach treatment either ignore the biological aspects of the problem or the dysfunction is approached only by pharmacological treatment, which can expose individuals to negative side effects.

The goal is to improve cognitive conditions and train the respondent's reaction in a given situation. The system is based on the principle of presenting cognitive conditions and functions to the user in order to teach the mind how to manage brain functions.

04 Target Market

Everyone who deals with conditions (either as a patient or a physician), like depression, ADHD, anxiety, concussions, seizures, recovery from addiction, sleep disorders, disruptive behavioral disorders / bipolar disorder, ADHD / ADD, autism, and so on represents a targeted group.

Project Development Plan

PROJECT QUARTER	PLANNED MILESTONE(S) IN THIS QUARTER
Q1	1. Development of technical project with complete documentation for prototyping 2. Prototyping of the system
Q2	1. Preparation of a study for equipping the laboratory for installation and testing of systems and equipment 2. Selection of devices and equipment for the laboratory 3. Purchase of devices and equipment for the laboratory
Q3	1. Setting up the production plant 2. Selection and training of production workers 3. Selection and procurement of raw materials and semi-finished products 4. Organization of serial production
Q4	1. Registration of products on the market and obtaining permits for use on the market of Serbia and the EU 2. Marketing market processing 3. Business negotiations with product buyers 4. Concluding a Product Placement Agreement 5. Product placement

06 Risk Management

Technology risk

There is a risk of timely procurement of equipment, devices and semi-finished products that must be used.

It is necessary to provide more suppliers for equipment, devices and semi-finished products. Plan production and procure the required quantities in a timely manner.

Rating of risk: Medium

Timing, milestones and results

There is a possibility that for objective reasons the plan will not be realized as it was done by quarters.

It is necessary to strictly adhere to the plan and realization by quarters. If the plan is not achieved, more professional staff should be hired to make up for the delay and continue with the plan.

Rating of risk: Low

Employees and partners

Insufficient time for training and coordination between employees.

Hiring instructors with experience for staff training. Conduct training for individuals and as a team work. Emphasize cooperation between staff and team spirit.

Rating of risk: Medium

Procurement

Procurement of devices, equipment and semi-finished products is difficult, because most of them are procured from imports.. Untimely delivery.

Establish cooperation with several suppliers. Conclude long-term cooperation agreements.

Procurement according to the production plan in a timely manner and take into account the time of potential delay.

Rating of risk: Low

Budgetary issues

Insufficient funds for the purchase of equipment, devices and semi-finished products in the required quantities..

Enter into business agreements with banks that are ready to monitor production with a loan program.

Conclude Contracts with renowned insurance companies and eliminate the resulting disturbances as soon as possible

Rating of risk: Medium

Market risks

New product still unknown to the market.

With a well-designed marketing campaign and a developed product placement service, to bring closer to the customer all the benefits that he achieves by purchasing such a product, as well as the necessity of preventive health care for people .

Rating of risk: Low

Environmental and social risks

From the point of view of ecology and social protection of the population, this product makes absolute contributions, because it represents a great improvement and accessibility to the health system for all users. No compounds or products that pollute the environment are used.

Rating of risk: Medium

Excellence

- Briefly describe your knowledge transfer experiment, attract attention with your idea

- Compare to your competition and clarify the advantage of your project, otherwise it will look like you are not well prepared

- Provide information about the level of innovation

- Provide information on how the partners will interact

Impact

- Describe the sensitive social groups the KTE is focusing on
- Staff member career- how the KTE will impact future career of the staff member participating in the project (cooperate with other institutions in the region, lifelong partnerships, learning, improving the quality of scientific research work, professional and career development)
- Benefits of the collaboration- how the collaboration between the partners will benefit each of them (development of new research methods in the study of brain functions, treatments and the improvement of mental health, improvement of the quality of life, improving the performance of the technology that will be applied, mutual learning)
- Market opportunity - describe the market potential, do market research, analyse, be precise, define the target group, growth potentials, global impact

Implementation

- Work Plan - clearly described and fully aligned with the objectives. The time plan should be realistic and achievable
- Team - competences, experience, commitment to the project (professions of team and partner members, years of experience, scientific research, potential)
- Resources – budget distribution, how the lump sum received by the leading partner will be allocated among eligible costs and among partners (salaries for the staff member, travel costs, accommodation costs…)

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Team

Thank you for your attention!

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