

Neuromodulation and BCI





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PART 01



Executive Summary





01

To revolutionize neuromodulation and BCI by leveraging China's advanced, cost effective, and full industry chain technologies, offering a novel, effective, and personalized therapeutic approach to addiction, Parkinson's, epilepsy, and other neurological disorders.



Mission

01

Develop and commercialize advanced neurostimulation and BCI solutions tailored for addiction, Parkinson's, epilepsy, and other neurological disorders treatment, backed by rigorous scientific research and clinical validation, aiming to address the unmet needs in traditional solutions and provide a scalable and sustainable treatment model.



Goals

01

Develop core technologies for neuromodulation and brain - computer interfaces, for the treatment of addiction, Parkinson's, and other neurological disorders.

02

Develop the production processes for neuromodulation, build production lines, establish quality control systems, and deliver reliable products

03

Collaborate with enterprises around the world to develop customized products that meet and match local needs, and export technology and production processes.

04

Provide comprehensive supporting services for patients with addiction-related diseases, Parkinson's, paralysis, and for doctors.



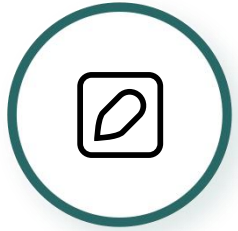


PART 02

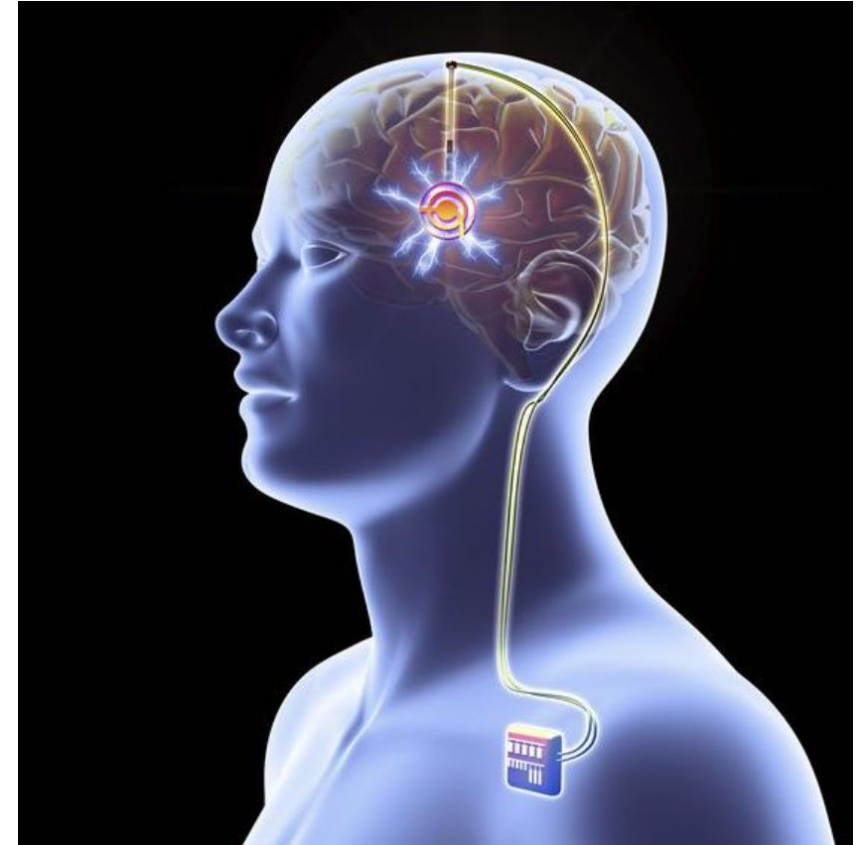


Market Analysis

Target Market



Our target market is individuals suffering from addiction, Parkinson's disease, epilepsy, and other neurological disorders who have not responded adequately to traditional treatments and medications. This market is characterized by a significant unmet need for innovative and effective therapeutic solutions. We aim to provide a novel, effective, and personalized therapeutic approach through our advanced neuromodulation technology, improving patients' quality of life and functional outcomes.





Market Overview:

Disease	Global Market Size	Prevalence	Population Impact
Addiction	Part of \$721B neuroscience market by 2026	8M annual deaths	184M DALYs annually
Parkinson's Disease	\$7.57B by 2034	6M+ cases, doubling by 2040	High disability and caregiver burden
Epilepsy	\$5.75B by 2033	50M cases globally	Significant DALYs, high demand for treatments
Neurological Disorders	\$149.17B by 2032	1 in 3 people affected globally	41,204.1 prevalence cases per 100,000, major cause of disability



Benchmark company revenue neuromodulation



	Year Revenue	Market and Indications	IPO
Medtronic	\$4.7 billion	Chronic pain, Parkinson's disease, essential tremor, refractory epilepsy.	Nasdaq listed
Boston Scientific	\$970 million	Chronic pain, Parkinson's disease, tremor, refractory primary and secondary dystonia.	Nasdaq listed
Abbott	\$890 million	Chronic pain; Movement disorders.	Nasdaq listed
Axonics	\$366 million	Urinary incontinence, frequent urination, fecal incontinence, stress urinary incontinence	Acquired by Boston Scientific
Pinsmedical	~RMB 1.6 billion	Parkinson's disease, epilepsy, pain, urinary incontinence.	IPO in progress
SceneRay	~RMB 300 million	Parkinson's disease, Addiction, OCD	IPO in progress



Revenue of benchmark company in neuromodulation



Benchmark company: BCI

Company Name	Country	Latest Valuation	Latest Funding (USD)	Clinical Progress	Indications
Neuralink	USA	Over \$50 billion	\$7.51 billion	First human implant in January 2024, ongoing trials	Neurological diseases, paralysis, vision restoration
Synchron	USA	Not disclosed	Not disclosed	First chronic implant in 2023, FDA approval pending	Spinal cord injuries, paralysis
Precision Neuroscience	USA	~\$500 million	\$102 million	27 clinical surgeries, micro-invasive technology	Sleep disorders, visual restoration
NeuroXess	China	Not disclosed	RMB x00 million	First human trial in China for focal epilepsy treatment	Focal epilepsy
BoRuiKang Technology	China	Not disclosed	RMB x00 million	Ongoing clinical trials for neurological disorders	Neurological diseases, paralysis
Ladder	China	Not disclosed	RMB 350 million (B round)	Over 50 IITs completed, largest flexible electrode dataset globally	Various neurological diseases



Benchmark company in BCI

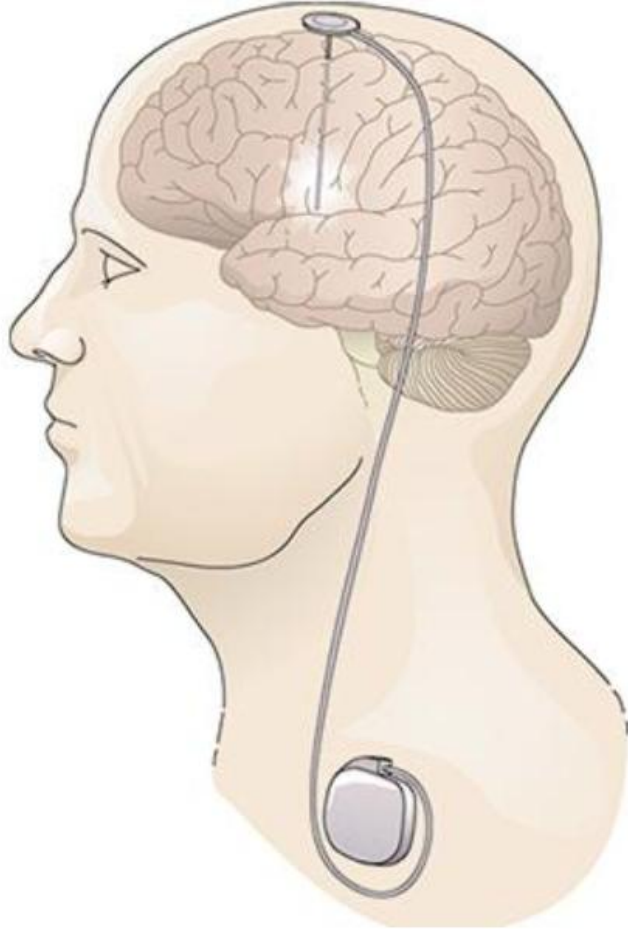
PART 03



Product and Service Offering



Core Technology



■ **1: Implantable Stimulator Production Process**

Our company excels in the complete production process of implantable stimulators. We utilize advanced fabrication techniques and biocompatible materials to create high-quality devices.

■ **2: Core Algorithm Capabilities**

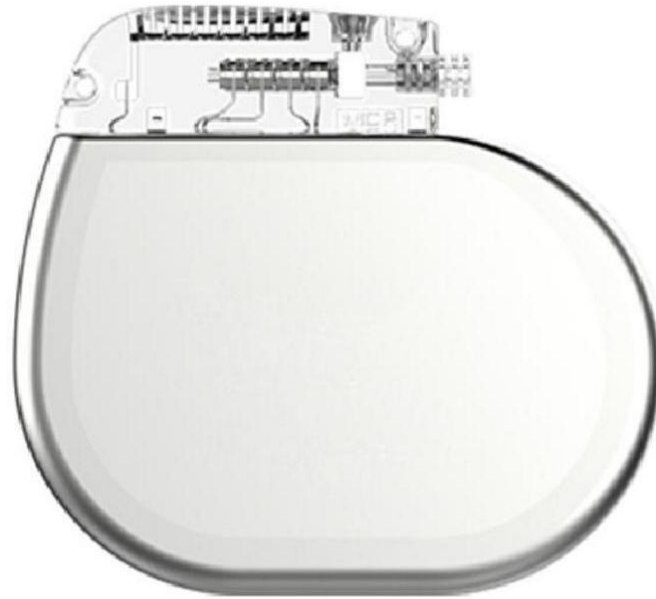
We have developed advanced core algorithms that can process complex brain signals and translate them into actionable commands for various applications, such as controlling prosthetic limbs or restoring sensory functions. Our algorithms are adaptable to different brain activities and can be customized for specific neurological disorders, providing tailored solutions for a wide range of patients.

■ **3: Closed-Loop Regulation System**

Our closed-loop regulation system is a cutting-edge technology that sets us apart. This system integrates real-time feedback from the brain to dynamically adjust stimulation parameters. By continuously monitoring the brain's response, our closed-loop system optimizes the neuromodulation process, ensuring maximum therapeutic benefits and minimizing potential side effects.



Products: neuromodulation



IPG: Chronic pain, Parkinson's disease, Addiction




Products: BCI

Application of different brain-computer interfaces in medical scenarios


Input BCI

Machine→→Brain


Application cases



Cochlear implant:
one of the most successful and widely used neuroengineering achievements currently.




Deep brain stimulation: a neurosurgery method commonly used to treat Parkinson's disease




Transcranial magnetic stimulation: using electromagnetic coils to deliver magnetic pulses to induce neural potentials

Output type BCI

Brain→→Machine



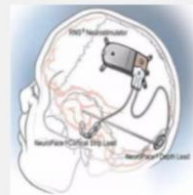
Restoring the ability to communicate in patients with total paralysis



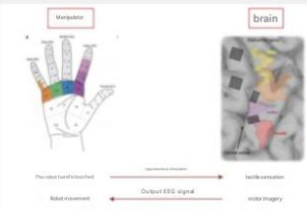
Functional electrical stimulation of the patient's limbs or allowing the patient to control robotic limbs through a brain-computer interface can restore motor function to quadriplegics or amputees.

Interactive BCI

Brain→→Machine→→Brain



The autonomous epilepsy treatment system developed by Neupace: Determines the timing and parameters of output electrical stimulation based on the abnormal brain discharges detected, achieving more accurate and effective treatment



Robotic arm with tactile feedback: In addition to realizing the control of the robotic arm by brain signals, it also provides tactile feedback to the brain to restore the communication mode of its own neural pathways.

BCI: Paralysis, Vision restoration, Neurological diseases