CerebrAI-VorTX

Neural-Synthetic Hybrid Brain-Computer Interface (BCI)

NeuroFlow Project

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CerebrAI-VorTX

Think, Innovation, Transform

We are developing a local language supported brain-computer

Communication and Mobility Barriers

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15%

of global population has disabilities

€30.000+

cost of existing systems

%60-70

accuracy rates of current solutions

According to WHO data, patients with ALS, cerebral palsy, and spinal cord injuries face serious communication challenges.

Cost: Systems €30,000+ (import-dependent)

Accuracy: Existing BCI systems offer only 60-70% accuracy

Language: Lack of native language support lim

Removing Communication Barriers

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Over one billion people worldwide face communication barriers. One in seven people experience difficulty with speech or comprehension. CerebrAI-VorTX aims to overcome these barriers through brain-computer interfaces.

NeuroFlow Edge Computing Device:

- Real-time signal processing
- Native language support
- Low cost
- Compact and user-friendly design
- High accuracy

Benefits:

- Enhances communication abilities for individuals with disabilities
- Suitable for clinical, rehabilitation centers, and home environments
- 8+ hours battery life for uninterrupted use
- Continuous usage possible with power supply

Breaking Barriers

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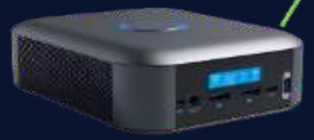
Disabled Individual

EEG Header

Raw Signal Data



NeuroFlow Edge IoT Device

Signal Processing

1. Noise Filtering

2. Feature Extraction

3.Adaptive Learning

Thought Analysis

Native Language Module

Text/Command Generation

ENTRY **PROCESSING** **NATİVE LANGUAGE PROCESSING**

Output Routing

Mobile App → Mobil Uygulama → **Remote Access Patient Relative**

Web Panel → Web Arayüzü → **Reporting Clinical Follow-up**

Display → LCD Panel → **Local Control Instant Use**

INTERFACES

NeuroFlow: Gateway to Mental Freedom

Safe and Comfortable

Non-invasive EEG technology provides painless and secure usage with user comfort as the priority.

Speed and Accuracy Champion

98% accuracy with <50ms response time, offering near-instant solution av

Native Language Support

Our local language support and adaptive learning capabilities respond instantly to user needs.

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A World Without Barriers: For Everyone!

NeuroVR: Beyond Limits Rehabilitation

1. **Daily Living Activities**
   Develop independent living skills in realistic virtual environments.

2. **Motor Skill Development**
   Strengthen movement abilities through gamified exercises.

3. **Cognitive Rehabilitation**
   Enhance mental capabilities through interactive simulations.

4. **Social Interaction**
   Practice social skills in safe virtual environments.

Our Training Modes Break Boundaries

NeuroVR, offers flexible, comprehensive rehabilitation solutions:

- **Individual Training** - Personalized programs tailored to specific needs
- **Group Therapy** - Interactive rehabilitation experiences with peers
- **Remote Rehabilitation** - Location-independent, continuous treatment

NeuroFlow's Technological Power

4x

Processing speed compared to competitors

Edge Computing Architecture

- Data processing at source
- <2ms latency
- Server-independent operation
- 99.9% data security

%40

Cost advantage

Deep Learning Models

- 95% accuracy rate
- Adaptive learning system

%95+

Signal processing success

Special Signal Processing

- 24-bit precision
- Custom noise filtering
- 32 channel support

7/24

Local technical support

Native Language Processing

- Local language support
- 150ms response time
- Natural language understanding
- Personalized output

Market Analysis

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$2.4B

2024

Global BCI Market

Largest Segment - Rehabilitation Centers (40%)

Constitutes the largest market share. Institutions providing direct service to end users. Continuous and regular usage potential.

Total Potential: 2,500+ centers

$3.2B

2025

Projected Market Size

Second Largest Segment - Research Laboratories (35%)

High technology adaptation.
R&D focused usage.
High academic reference value.

Active Laboratory Potential: 25+

%15.8

CAGR

Annual Growth Rate

Technology Companies (15%)

Integration and development potential. API and SDK usage. Cap

Active Company Potential: 50+

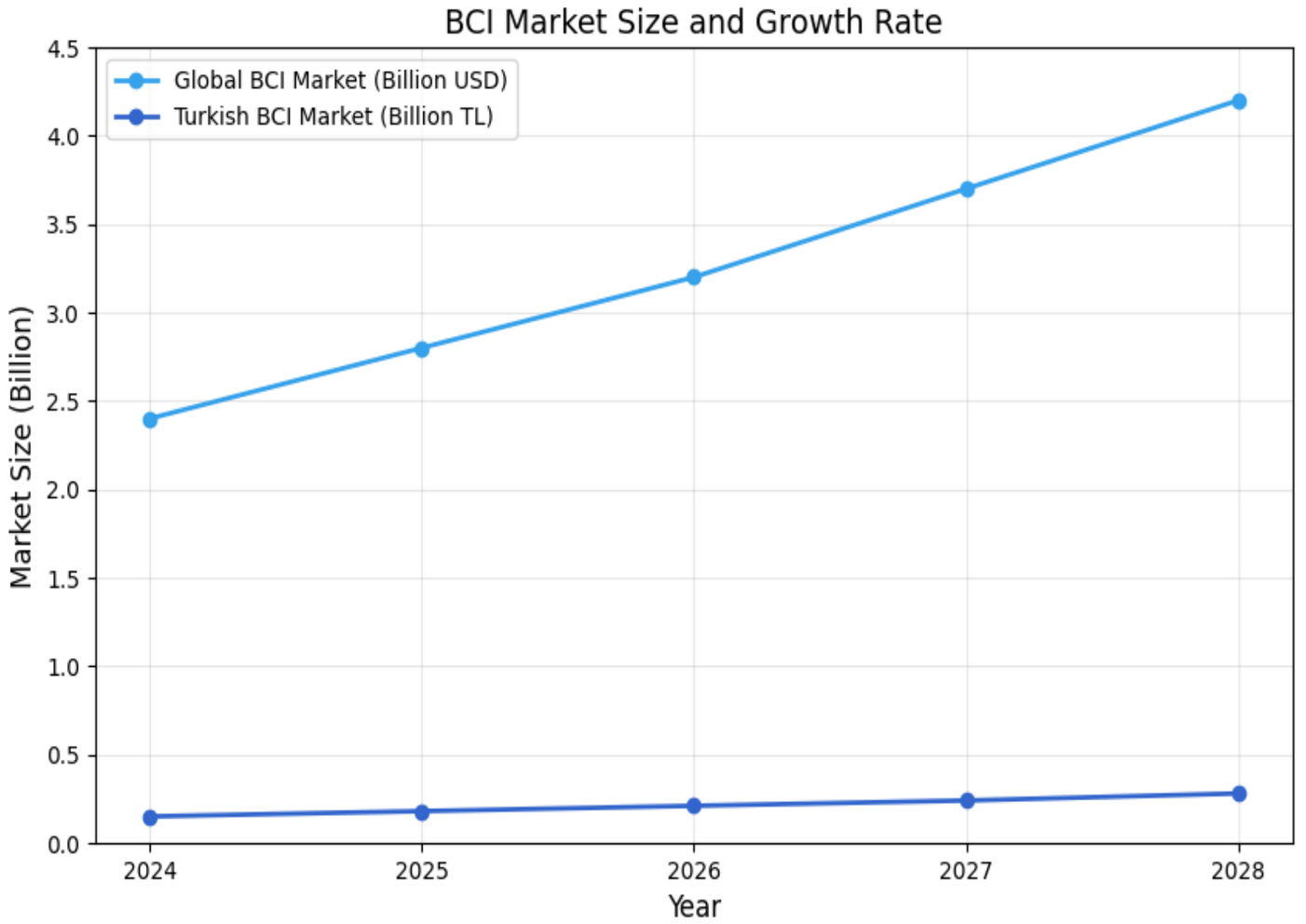
%10

Disability Associations Segment

Social impact potential.
Access to wide user networks.
Awareness creation capacity.

Institution Potential: 500+

$2.4B, 2024 -Global BCI Market



The graph shows:

Global BCI Market (Billion USD) -

represented by the blue line trending upward from approximately $2.4B in 2024 to over $4.0B by 2028

Turkish BCI Market (Billion TL) - represented by the dark blue line showing more modest but steady growth

X-axis shows years from 2024.0 to 2028.0 Y-axis shows market size in billions

The graph illustrates the significant growth trajectory of the global BCI (Brain-Computer Interface) market, projected to nearly double in size over the next four years, while also showing the relative scale and growth of the Turkish market segment.

Us and Our Rivals

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✓ Edge Computing IoT
✓ Edge AI Processing
✓ <2ms latency
✓ 32 Chanell
✓ Native Language Support
✓ Local technical support

OpenBCI

✓ DIY Kit
✓ Open source
× 50ms delay
× 8-16 channels
× Forum support

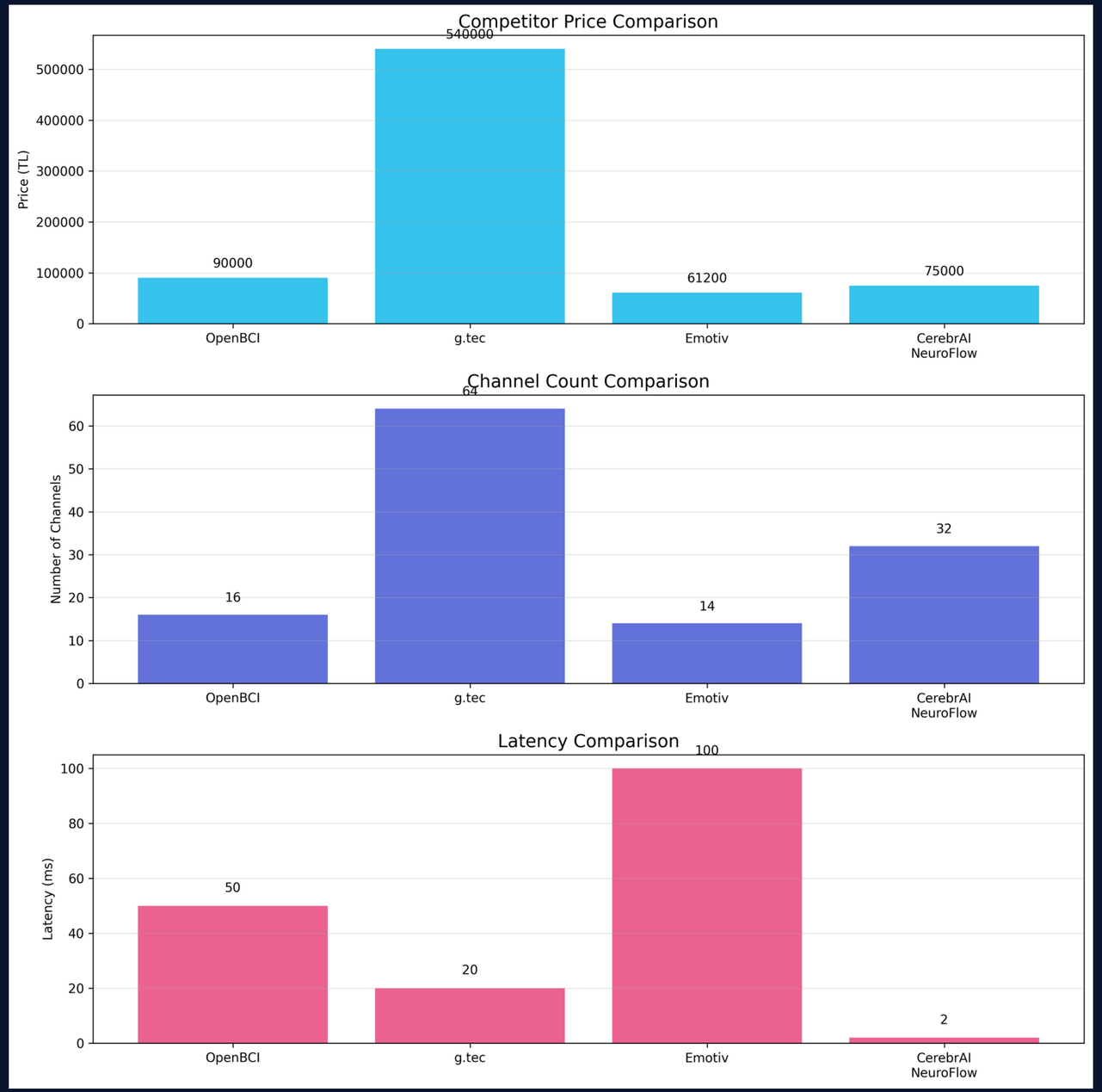
g.tec

✓ Medical device
✓ 16-64 channels
× 20ms delay
× High cost
× Complex Installation

Emotiv

✓ Consumer orientated
✓ Mobile app
× 100ms delay
× 14 channels
× Cloud dependent

We stand out from the competition by offering non-invasive, low cost, native language support and high accuracy.

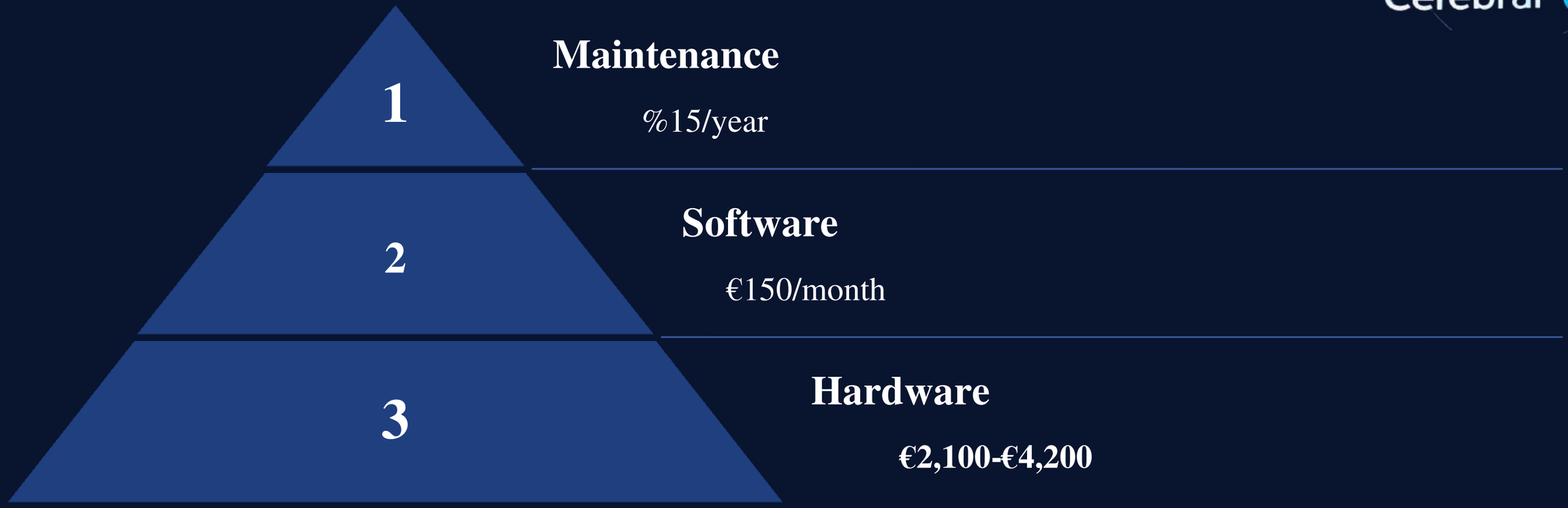


The charts will clearly highlight your competitive advantages, particularly your extremely low latency (2ms) compared to competitors (20-100ms), and your balanced approach to channel count and pricing.

When presenting to European investors and partners, your value proposition becomes even stronger. While g.tec offers more channels, it comes at a significantly higher price point (€15,000), making CerebrAI NeuroFlow a much better value proposition with 32 channels at only €2,100. This positions your solution in the mid-range price segment but with advanced features typically found only in premium systems.

The revolutionary 2ms latency (compared to competitors' 20-100ms) represents a technological breakthrough that enables real-time neural feedback impossible with other systems. This key differentiator is particularly valuable in European markets where advanced healthcare technologies and rehabilitation solutions command premium value when backed by clear performance advantages.

Business Model



With a target of 45 unit sales and 12 customers in 2025, we aim for €290K revenue and 45% profit margin. We have letters of intent and support from specific institutions. We offer a scalable business model with national expansion and new product lines.

Financial Projections

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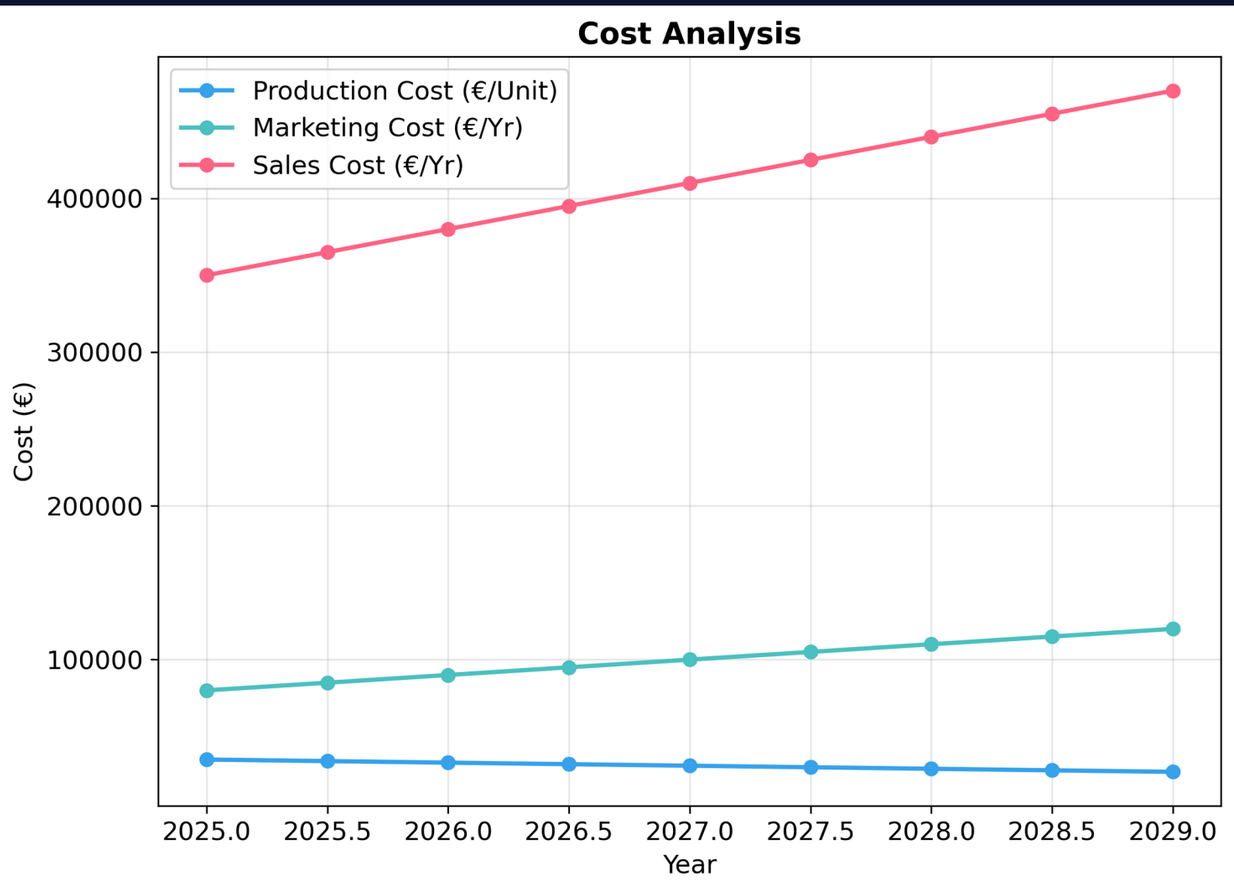
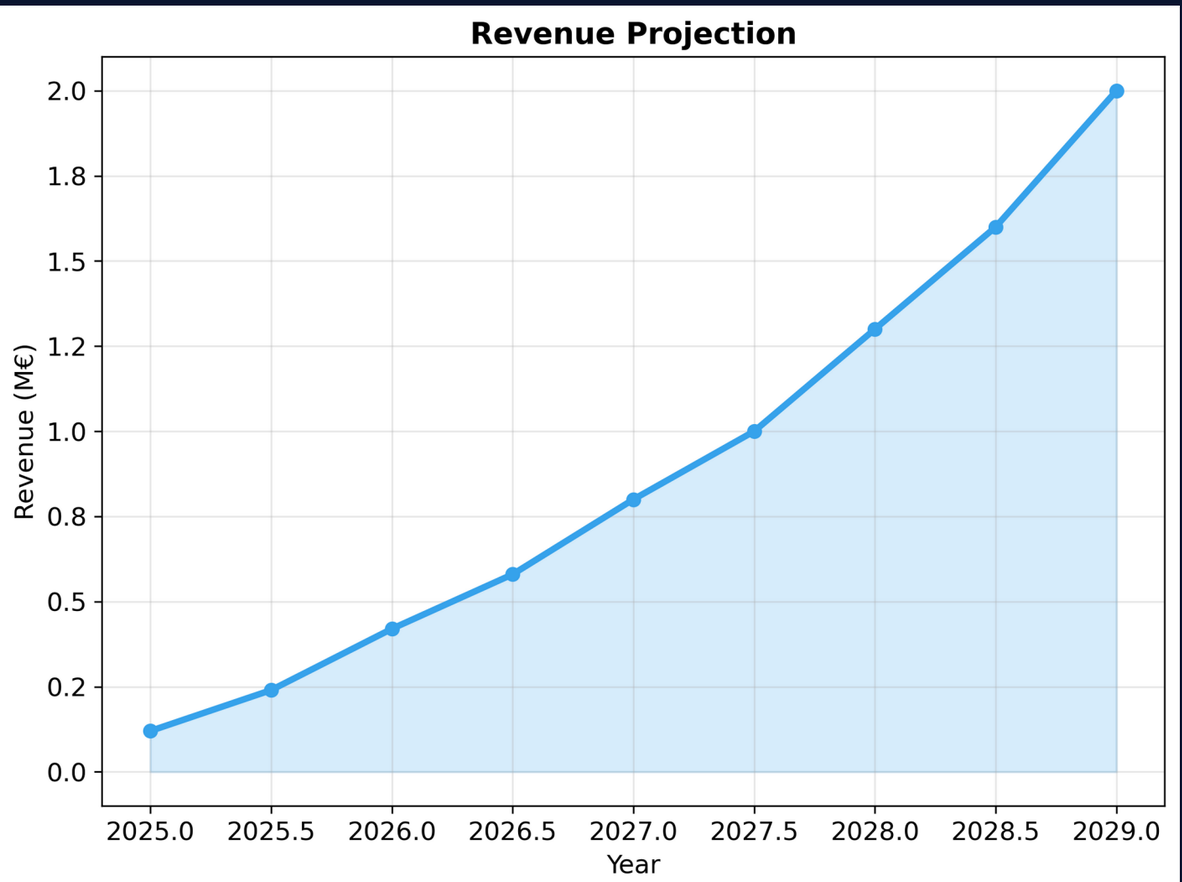
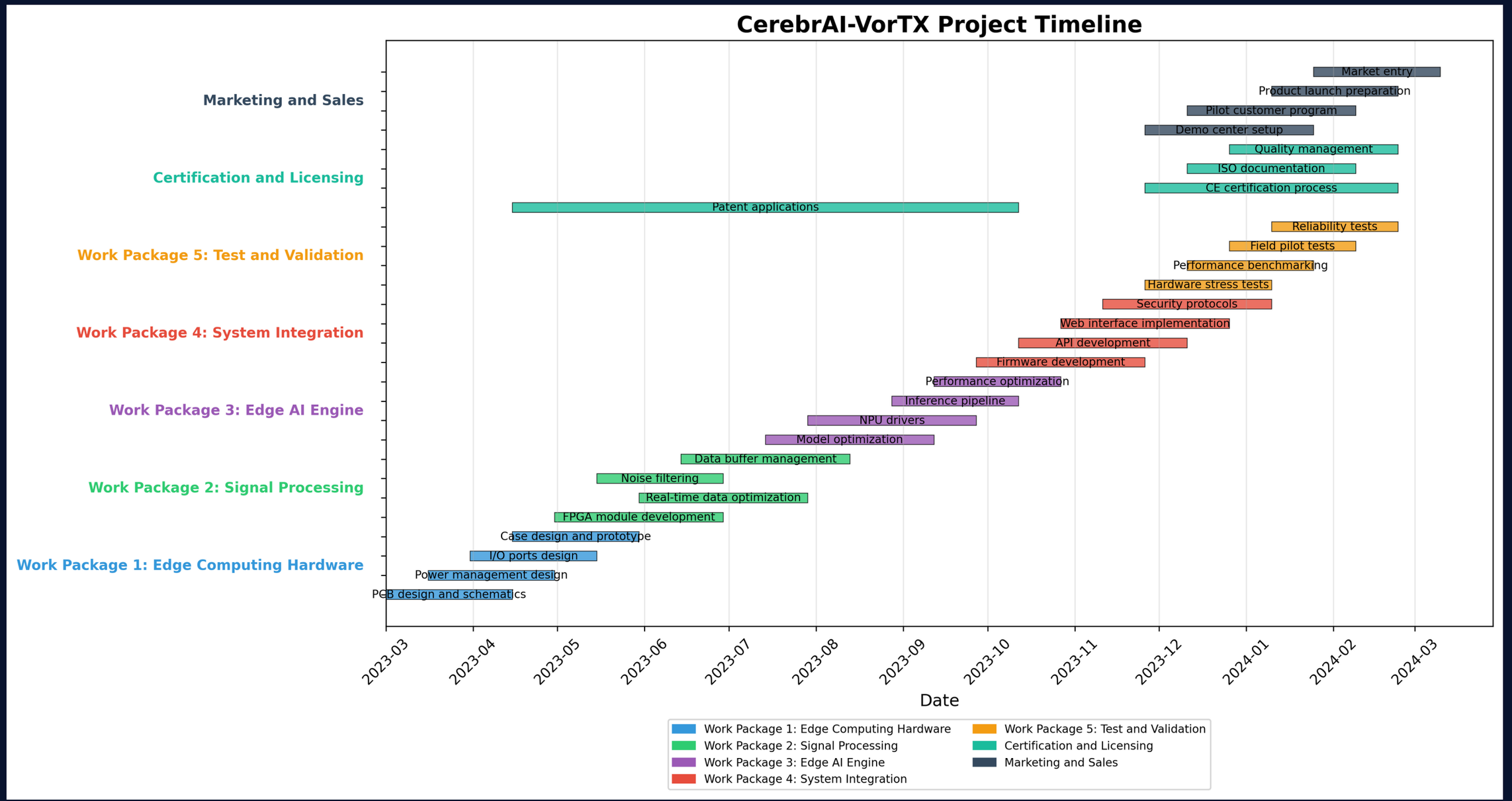




Project Flow



Main Product - NeuroFlow Edge Computing

Basic Model

• Price: €2,100
- Basic hardware package
- 1 year basic support
-Standard API access

NeuroFlow V.1.0

Pro Model

- Price: €3,500

- Advanced hardware + VOICE PACKAGE

- 2 year premium support

NeuroFlow V.2.0

Enterprise

- Custom pricing

- Customized solutions (voice + chat + thematic simulations)

-24/7 dedicated support
• Full API access

NeuroFlow V.3.0

1

Initial Contact - 2-3 weeks

2

Demo - 2-3 weeks

3

PoC - 2-3 weeks

4

Proposal - 2-3 weeks

5

Contract - 2-3 weeks

6

Installation - 2-3 weeks

Sales Process Timeline

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Technological Validation and Approval

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Our technological validation process consists of 4 main phases:

1

Hardware Design (TRL 3-4)

PCB and hardware design, cooling system optimization

Initial prototype production

Validation of basic components

2

Signal Processing (TRL 4-5)

Filtering algorithms, FPGA implementation

Real-time performance tests, <2ms latency goal validation

3

Edge AI Engine (TRL 5-6)

Model optimization

Lightweight and fast models, >95% accuracy target

Adaptive learning system

4

System Integration (TRL 6-7)

Integration of all components, end-to-end tests

Pilot applications, clinical validation

Critical Test Parameters

Performance Metrics:	Reliability Tests:	Clinical Validation:
Latency: <2ms	72 hour continuous operation	Pilot study with 20 volunteers
Accuracy: >95%	Thermal stress (0-70°C)	Testing in 3 different clinical environments
Power consumption: <45W	EMC/EMI compliance	1000+ hours total test time
Uptime: >99.9%	Data security tests	

Validation Timeline:

Months 1-3

Hardware development

Months 3-6:

Edge AI Engine Development

Months 6-7:

Language NLP and System Integration

Months 6-9:

Language NLP and System Integration

Months 9-12:

Testing, Validation and Pilot Applications

This technological validation process is designed to test and validate our performance goals, reliability criteria and suitability for clinical use.

Roadmap 2025-2026

1

2025 Q3

MVP launch, first 5 pilot hospitals and Technology Hub establishment.

2

2025 Q4

MVP Launch: MVP officially launched.

Initial Pilot Applications: System setup and user training begins at first 5 pilot

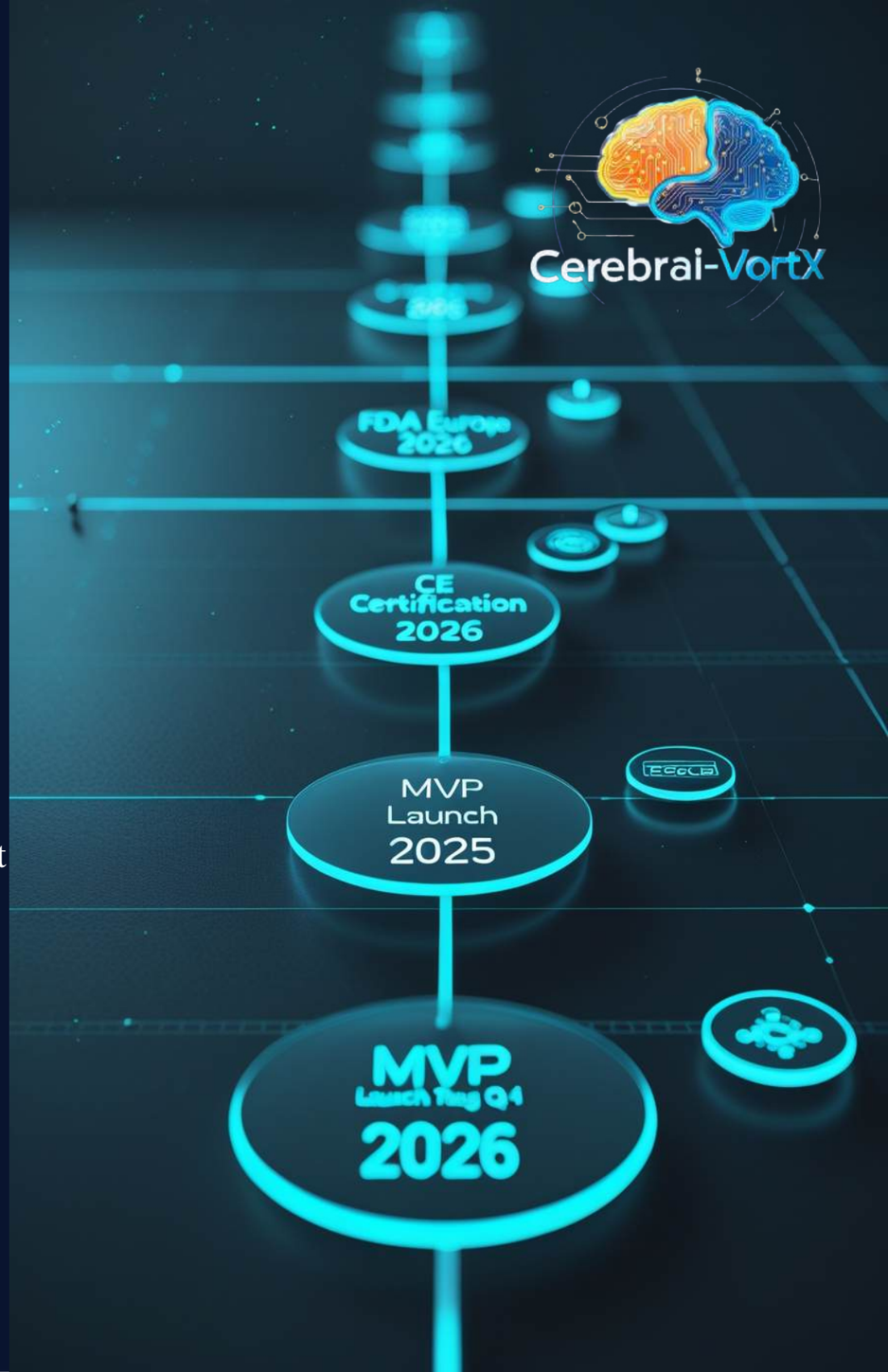
3

2026 Q2

CE Certification: CE certification obtained.

Hospital Integration: Integration with 25 hospitals completed.

MENA Market Entry: Entry into Middle East and North Africa market.



Our Strong Team

Our team consists of experts in ML engineering, signal processing, and UI/UX design with experienced advisors.

Yasin TANIŞ

Founder & CEO

3+ years Data Science & ML

3+ years BCI system development

T3 Entrepreneurship Participant

NLP Finalist

Currently active in the field of artificial intelligence.

Muhammet Emin POLAT

Co-Founder & CSO/CIO

Founder of METADER (Metaverse Application and Development Association)

AR-GE experience

NLP and artificial intelligence model development expertise

Cybersecurity specialist

Strategic partnerships and R&D management

Currently active in cybersecurity, and artificial intelligence sectors.

Keziban TOPAL

R&D Director

5+ years Nanotechnology Researcher

T3 Trainer & Nanologist

Experience with Research Projects

Academic Research Background

Currently active in nanotechnology and artificial intelligence research.

Sefa KABATAŞ

Senior VR/Game Development

2+ years medical VR simulation development

3+ years C# and Unity VR/AR development

2+ years multiplayer VR systems

Currently active in VR 3D game simulation design.

CerebrAI-VorTX

Think, Innovation, Transform

"Your thoughts are now your voice!"

Our Goal: Not just a product, but creating an ecosystem that will transform the lives of disabled individuals and reconnect them with society. Every successful application will open a new page in someone's life, becoming a new hope.

With respect, CerebrAI-VorTX Team

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