Patient Case

- Maria is a 7 year from a Greek island
- Presented with symptoms of chronic anemia
- Complete Blood Count tests (CBC's)were performed, but the cause of the anemia was initially unclear.
- Blood smear showed spherocytes
- Diagnosis confirmed as hereditary spherocytosis

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Underutilization of Blood Smear Analysis

More than 5 billion complete blood counts (CBCs) are performed annually worldwide

84% of the blood counts are not evaluated by blood smear

1 in 4 people are diagnosed with anemia

Blood smear reviews provide up to 46% additional clinical value

Early diagnosis of:
- Anemia
- Myelodysplastic Syndromes
- Cases of Leukemia
- Bacterial Vs Viral infections
- Malaria

Lack of blood smear testing leads to over 1.5 billion undiagnosed or delayed-diagnosis cases

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References:
1. Shen, J. Z., et al. (2019). Optimization of laboratory ordering practices for complete blood count with differential. *Am J Clin Pathol*, 151(3), 306-315.
2. McPhedran, P., & Hall, R. B. (2005). Usefulness of Peripheral Blood Smears in Identifying the Causes of Anemia in Adults
3. Lee, A. C. W. (2018). Case Report Diagnosing Infections from the Peripheral Blood Smear. *HK J Paediatr (new series)*, 23(1), 25-28.
4. Novis, D. A., et al. (2006). Laboratory productivity and the rate of manual peripheral blood smear review. *Arch Pathol Lab Med*, 130(5), 596-601.

Our Goal & Vision

The aim is to identify the blood cells and detect any abnormalities
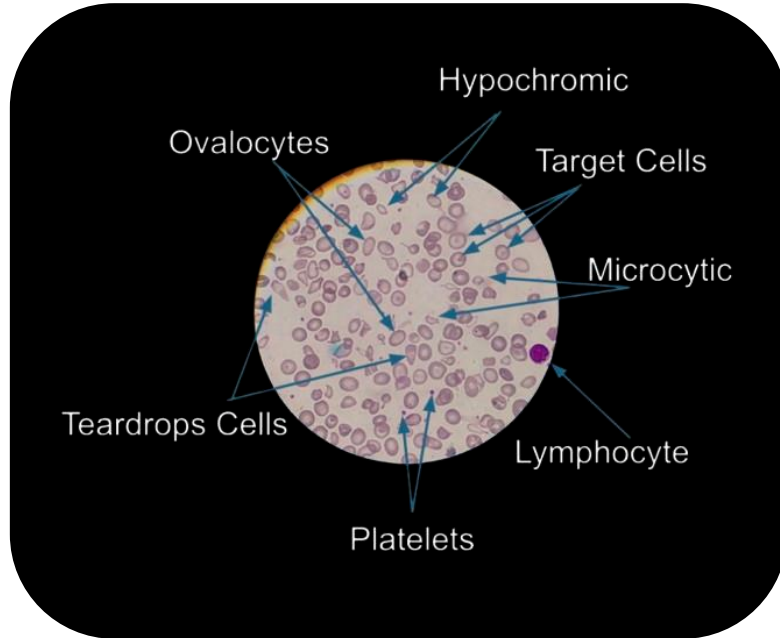
Peripheral Blood Smear

Our vision is to make automated blood smear analysis a seamless and standard part of every Complete Blood Count.

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Industry Challenges

Manual Recognition

Manual identification of blood cells in peripheral blood smears is **time-consuming and prone to human error.**

Precision

Accurate identification of specific types is crucial for diagnosing various hematological conditions.

Limited Analysis Details

85% of blood counts are not evaluated by blood smear, highlighting a significant gap in detailed analysis[1].

Time Frame

Turnaround time for blood film reports can vary significantly, ranging from **12 to 72 hours** in NHS labs

Average Duration of Examination

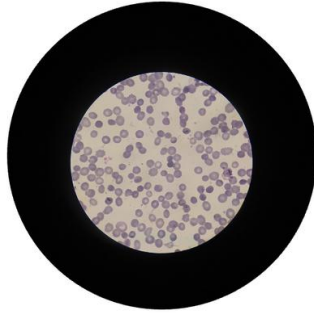The average examination time for a blood film is **10–20 minutes**

Possible Misdiagnosis

High workload and time constraints can lead to **potential misdiagnoses and delays** in patient care

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Our Solution

We developed a system that receives an image as input and provides a diagnosis with the help of an AI model.

Image Capture

Obtain a microscopic image of the peripheral blood film.

Model Input

Input the image into the AI model.

Analysis & Results

Cell Count: number of different types of red blood cells.

Diagnostic Insights: Provide potential diagnoses.

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AI Driven Blood Film Analysis

Accuracy & Precision

Cost-Effectiveness

Speed & Efficiency

Remote Analysis

Automated Detection

Integration & Scalability

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Model Characteristics

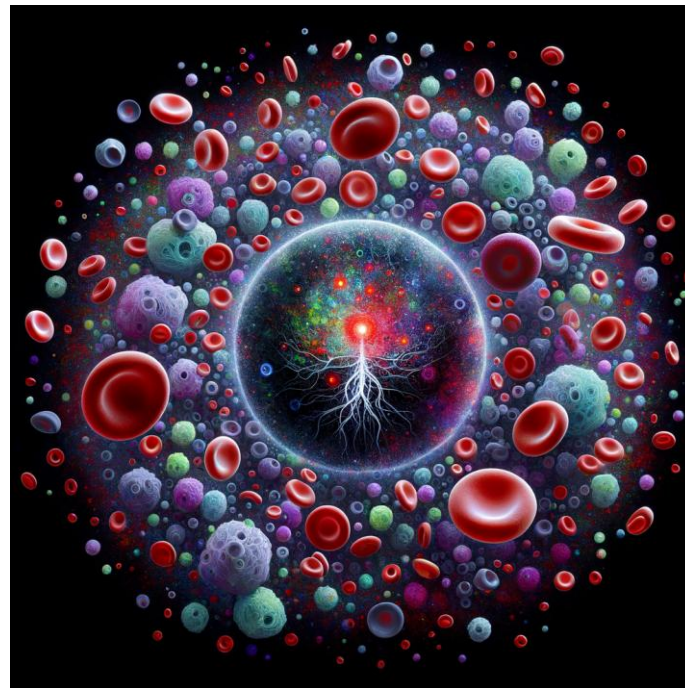- Multi-Year Blood Smear Collection

- Expert Hematologist-Verified Data

- Multi-Modal Analysis Framework

- Expert Clinical Oversight & Validation

- Mobile-optimized Platform & Laboratory Software Integration

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The Results of Our Model

Identification of cells of different morphologies
The AimaLabs demo powerfully demonstrates advanced AI capabilities

Spherocytes	Accuracy: **0.99**, Precision: **0.98**
Acanthocytes/Spherocytes	Accuracy: **0.99**, Precision: **0.99**

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Target Sectors

Hospitals & Clinics

- Leading hospital networks
- Major healthcare systems and clinics
- For routine blood analysis.

Research Institutions

- Medical research institutes
- Academic laboratories specializing in hematology, pharmacology, infection
- For advanced studies in hematology.

Diagnostic Laboratories

- Leading Diagnostic Laboratories
- For specialized hematological testing.

Pharmaceutical Companies

- Producers of blood disorder therapeutics
- Developers of diagnostic reagents and kits.
- For drug development and clinical trials.

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Potential Partners

- **Microscopy Companies**
- **Cell Analyzer Companies**
- **Diagnostic Equipment Manufacturers**
- **Laboratory Information Systems (LIS) Providers**
- **Healthcare Providers and Hospitals**
- **Research Institutions and Universities**
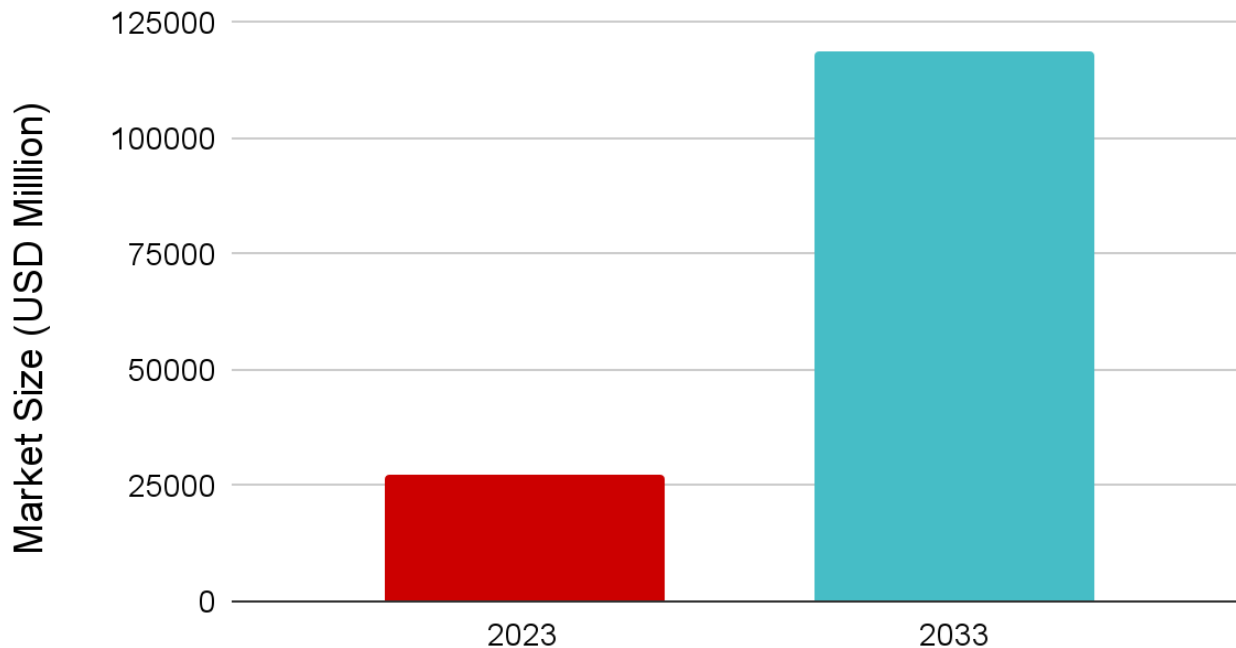- **Pharmaceutical Companies**
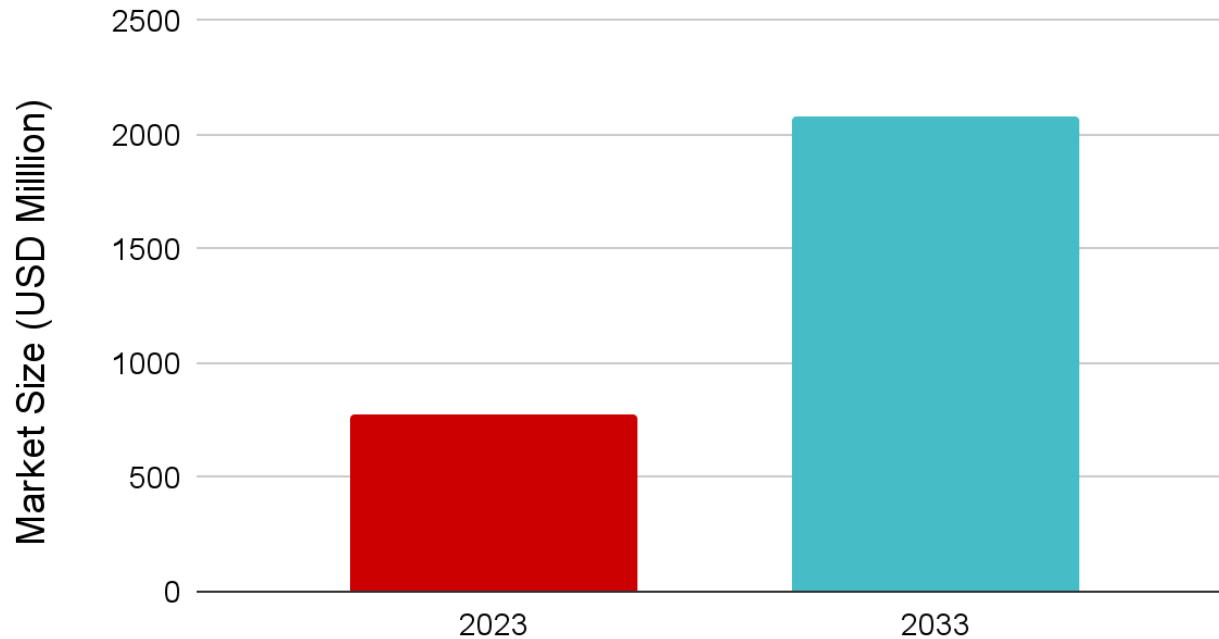- **Health Tech Companies**

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Market Analysis

AI in Pathology Market Size

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Market Analysis

Hematology Diagnostics Market Size

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Competitive Analysis

Features	CellaVision	Scopio Labs	AimaLabs
Parametric Classification	✖	✖	✔
Software focus	✖	✖	✔
Complete-Cell Classification	✖	✔	✔
Accuracy	96.2%	95.7%–96.8%	**97–99%**

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Digital Microscopy: Significant room for growth

79% of large labs remain unpenetrated
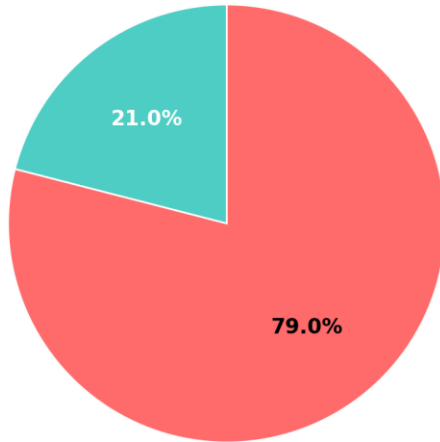
100% of small/medium labs remain unpenetrated

21.0%

79.0%

100.0%

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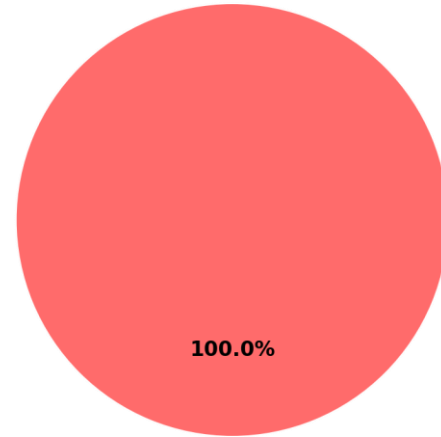
Business Model

We have 2 interdependent revenue streams

License fee

- This fee depends on whether an advanced or basic platform is used
  E.g. Basic platform:
  Platform Fee: €15,000/year

Per CBC cost

- This fee depends on whether an advanced or basic platform is used
  E.g. Basic platform:
  Per CBC Fee: €2.00

Fixed cost

- Integration & Testing:
  €10,000 (one-time)

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Financial Overview

Year 1 Costs

Total Year 1 Costs: €220,000

- **Product Development** 80%
- **Marketing & Sales:** 5%
- **Operational:** 15%

Year 2 Costs

Total Year 2 Costs: €425,000

- **Product Development:** 75%
- **Marketing & Sales:** 10%
- **Operational::** 15%

Year 3 Costs

Total year 3 Costs: € 780,00

- **Product development** 55%
- **Marketing & Sales:** 15%
- **Operational(Regulatory approvals):** 30%

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Comments:
1. **Product Development includes: R&D(Generation of evidence): –Staffing**

Funding & Financial Projections

Total Funding Required: €1425,000

• **Year 3 Revenue(second half):**
€ 1,600,000
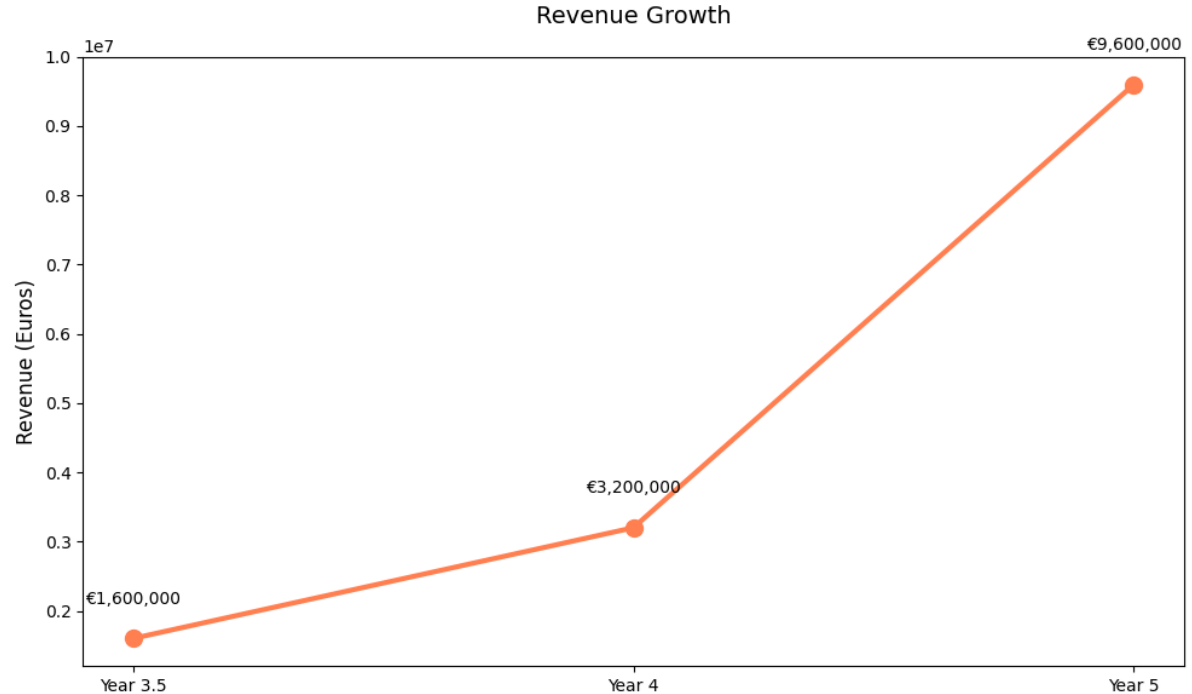   Target: 20 hospitals, 20 labs
    (various sizes)
    (medium-sized hospital: €
    50,000/year
    medium size lab: € 30,000

Growth Targets:
• **Year 4: 100% client increase
(year 3)**
• **Year 5 : 200% client increase
(year 4)**

Revenue Growth

AimaLabs Revenue Example

Features	Hospital with 300 beds	Hospital with 300 beds
Yearly CBCs (inpatients and outpatients)	60,000	60,000
Number of blood smear analysis by AimaLabs	18,000 (30%- blood smears)	30,000 (50% blood smears)
AimaLabs yearly revenue(2€ /Blood smear)	36,000	60,000
Licence fee of AimaLabs	15,000	15,000
Total Revenue(€)	50,000	75,000

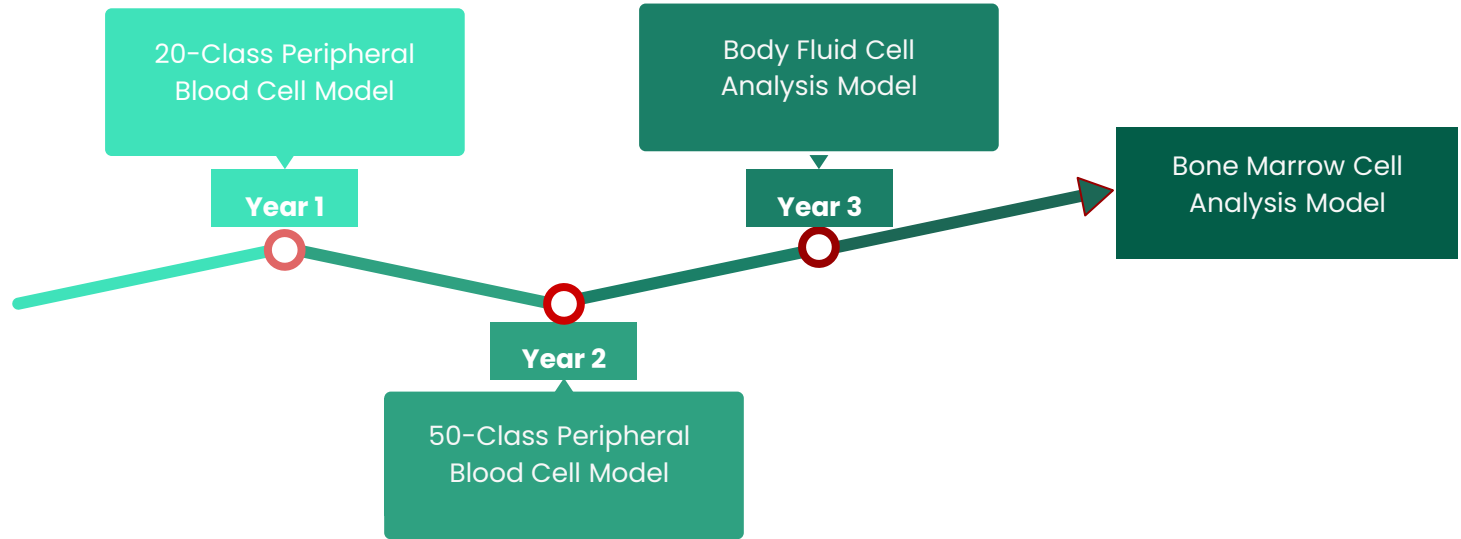7,165 hospitals in the European Union (Eurostat, 2021).

1,257 hospitals in UK (NHS Confederation, 2021).

6,093 hospitals in USA (American Hospital Association, 2021

45% of the hospitals have 200-400 beds.

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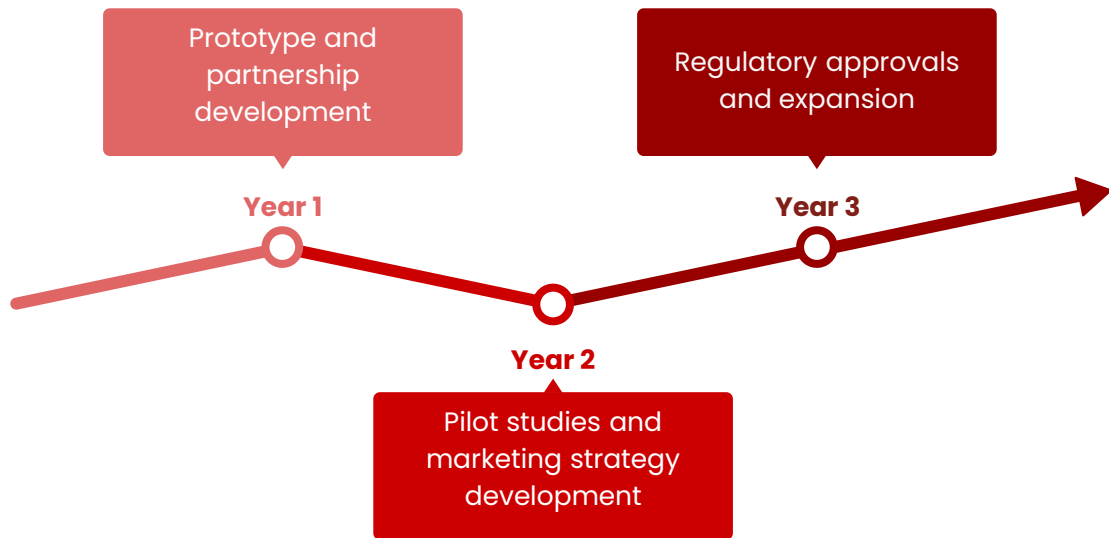# Development Milestones

20-Class Peripheral Blood Cell Model

Year 1

Body Fluid Cell Analysis Model

Year 3

Bone Marrow Cell Analysis Model

Year 2

50-Class Peripheral Blood Cell Model

The AimaLabs Roadmap to Healthcare Excellence

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Aimalabs Development Timeline

Prototype and partnership development

Regulatory approvals and expansion

Year 1

Year 3

Year 2

Pilot studies and marketing strategy development

AimaLabs' timeline demonstrates a healthier future for millions

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Class II Medical Software Regulatory Pathway

CE MARK (Class IIa)

Timeline: 3-6 months
Cost: €170K-430K
Requirements:
- Notified Body Review
- Technical Documentation
- ISO 13485 Certification
- Clinical Evaluation
- Risk Management File
- Post-market Surveillance

FDA 510(k)

Timeline: 90 days review
Cost: $300K-1.5M
Requirements:
- Predicate Device Identification
- Software Documentation
- Verification & Validation
- Clinical Evidence
- Cybersecurity Documentation
- Quality System (21 CFR 820)

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Awards-Presentations

Pfizer-Start4Health Acceleration lab: **2nd Award-10/2024 (Thessaloniki)**

10th Greek Pediatric Hematology Oncology Conference: **Presentation-11/2024 (Athens)**

AI Visionaries- Leading Health Inovation for Women 2025:   **P. Perivolaropoulou- 1/2025 (London)**

Nvidia inception program   **1/25-7/25**   **NVIDIA | Inception Program**

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About Us

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Founder & CEO

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35+ years experience in pediatric hematology

Angelos Perivolaropoulos, MSc

Software Engineering Advisor

Software Engineering at Glasgow University

Persefoni Perivolaropoulou, MEng

Product Advisor

University of Edinburgh (MEng)–Cambridge University (MRes)

Daniel Tikhomirov, BSc

Biomedical Advisor

University of Edinburgh(BSc)–University of Cambridge(PhD)

Leandros Perivolaropoulos, PhD

R&D Coordinator /Prof. University of Ioannina

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