



Building the Safety OS for Healthcare Robotics

Enabling the 'Humanoid 100' to unlock the high-value Healthcare market segment with regulatory-grade compliance infrastructure



\$5Trillion

Total Humanoid Market by 2050

\$1 Trillion is Healthcare

The Problem

A Ticking Liability Time Bomb waiting for Patients & Manufacturers



Patient Safety Risk

Humanoids in healthcare lacks safety standards and real-world validation



Catastrophic Manufacturer Liability

OEMs face existential legal exposure without regulatory compliance frameworks



Regulation Gap

e.g. Unitree R1 @\$5,900
soon in Homes

Technology is advancing faster than regulatory frameworks can keep pace

The Market Catalyst: Morgan Stanley "Humanoid 100"

A global list of 100 public companies identified by Morgan Stanley as the key players shaping the multi-trillion dollar humanoid robot value chain



The BRAIN

Semiconductors & Software

Companies providing the chips (e.g., NVIDIA), AI models, and software that enable perception, learning, and decision-making.



The BODY

Industrial Components

Companies that manufacture the physical hardware: actuators, sensors, motors, gears, and batteries.



The INTEGRATORS

Full Humanoid Developers

The companies assembling and deploying the complete humanoid robots (e.g., Tesla, Boston Dynamics, Unitree).

Why It Matters for HumanoidHealthcare.AI

This framework validates our entire business model. The ecosystem is fragmented, and no single company does it all.

- It identifies our target customers: **The Integrators** who need a fast, compliant path to the lucrative healthcare market.

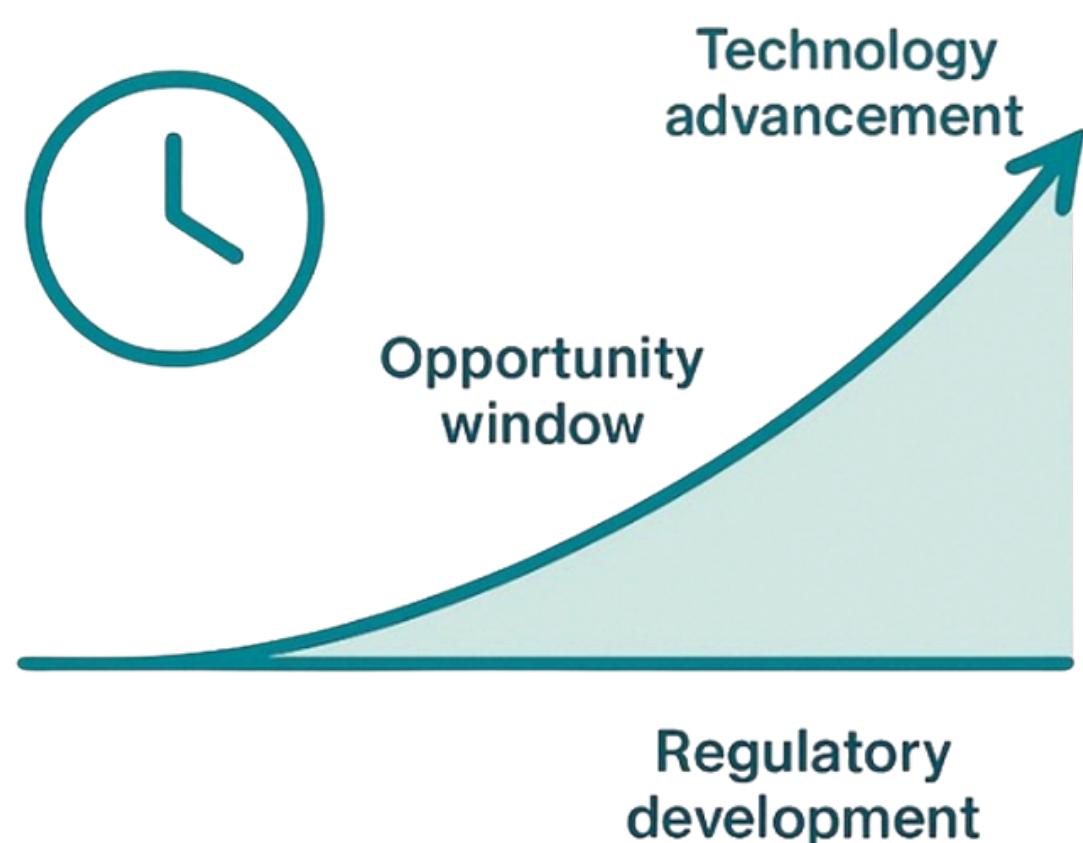
Why Now?

Technology is here. Regulation hasn't caught up.

**1.6B people
aged 65+ by 2050**

-  Aging populations & caregiver shortages
-  Explosion of humanoid R&D & falling prices
-  **SaMD** Software as a Medical Device

Regulated in US by FDA, and
in EU under **MDR** Medical Device Regulations



Market Opportunity: The Long-Term Vision

Morgan Stanley projects Humanoid Robotics to reach \$5 trillion by 2050 (industrial, customer service, home + other)

KEY TAKEAWAYS

\$5 Trillion

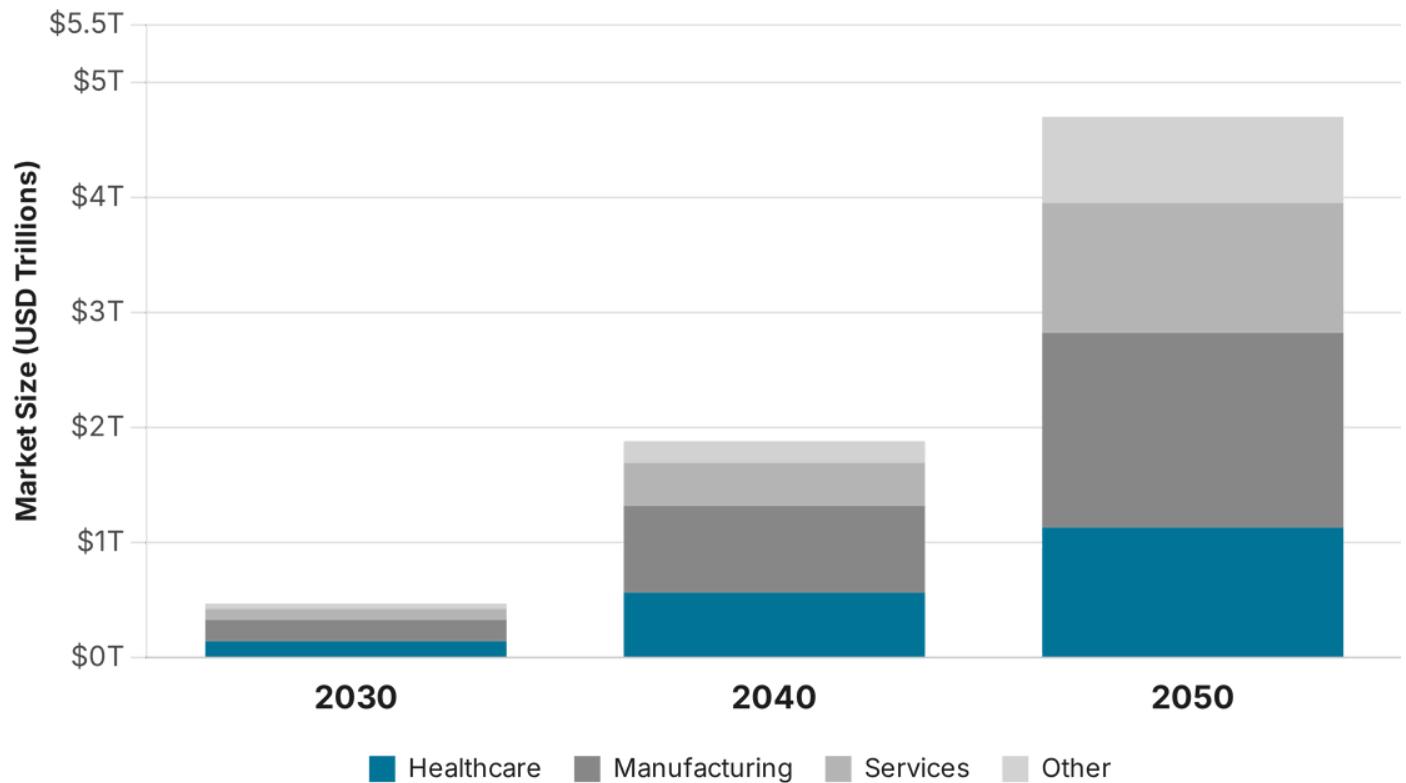
Total humanoid robot market by 2050
across all sectors

\$1 Trillion+

Healthcare segment - the high-value segment
requiring safety SaMD certification

Late 2030s

Inflection point when regulatory frameworks
mature and mass adoption begins



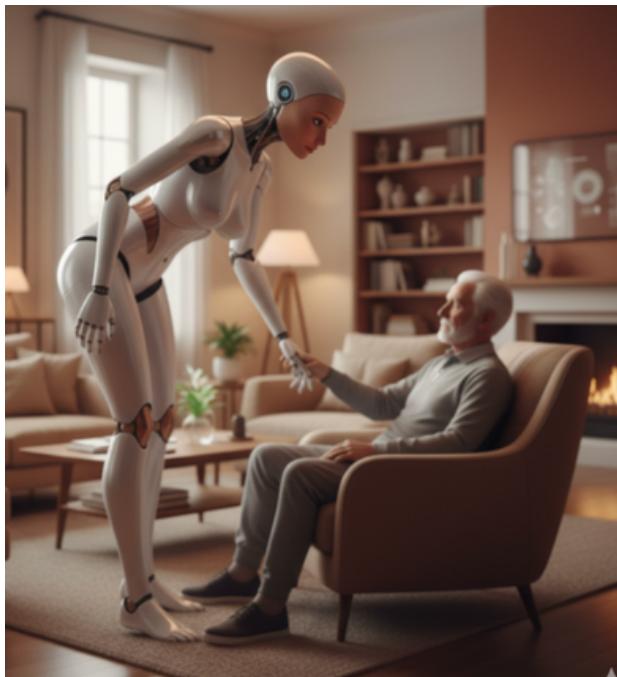
Sources:

Morgan Stanley Research, "The Humanoid Robot Market Could Reach \$5 Trillion by 2050" (April 29, 2025);

Morgan Stanley Research, "The Humanoid 100: Mapping the Humanoid Robot Value Chain" (February 6, 2025)

The \$1T+ Healthcare Prize

Healthcare emerges as the highest-value segment requiring safety certification



\$1T +

Healthcare
Robotics
Market
by 2050

1 High-Value Healthcare Segment

Healthcare represents a **high-value segment** of the \$5T humanoid market, requiring regulatory compliance and safety certification.

2 Mid-late 2030s Inflection Point

Regulatory frameworks mature and mass adoption begins when **certification becomes mandatory** for healthcare deployment.

3 Our Core Competency

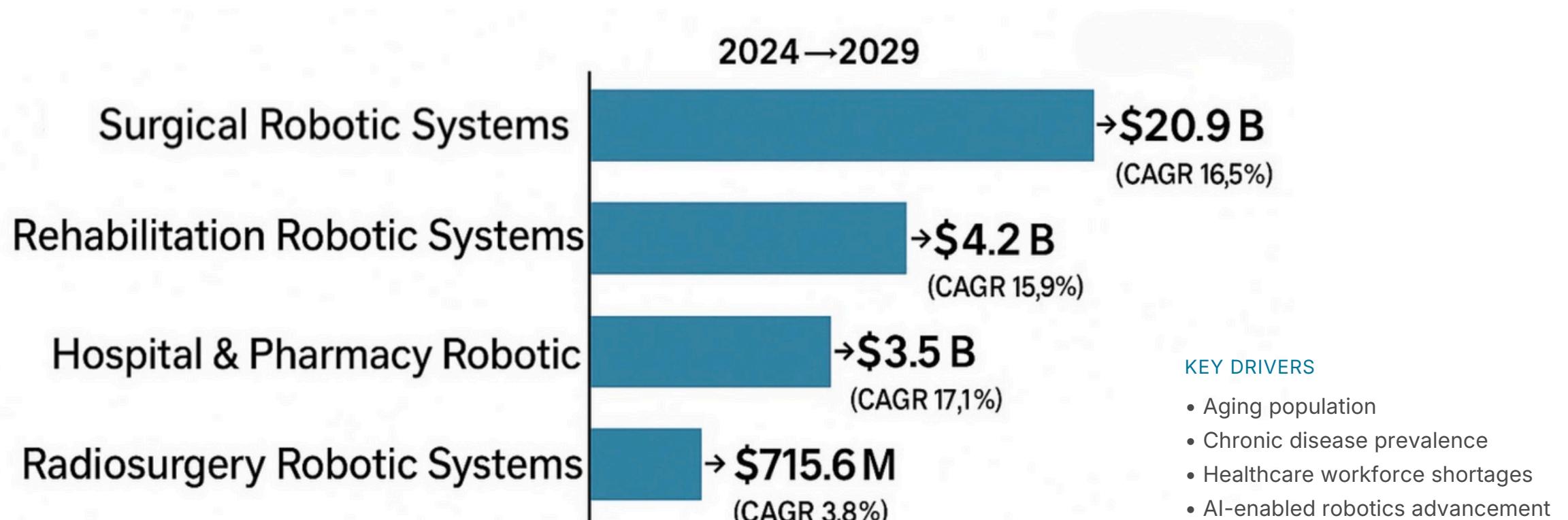
Regulatory compliance is not a barrier - it's our **competitive moat** and the key to unlocking this trillion-dollar opportunity.

Broader Economic Impact:

The physical embodiment of AI touches a \$60 Trillion TAM (total addressable market) across global GDP, representing the full, knock-on economic impact of humanoid robotics across all sectors.

Reality: \$33.8B Medical Robots Market by 2029

Our vision of Robot Caregivers in the Home falls within the Rehabilitation Robots segment



Source: MarketsandMarkets, March 2025

Our Solution: The SaMD Safety OS

Software-as-a-Medical-Device 'Brain' Plug-in:



PROTECT
PATIENTS



SHIELD
OEMs



INDUSTRY
STANDARD



OEM = Original Equipment Manufacturer

How It Works: The Modular Architecture

A modular SaMD layer that integrates with any humanoid platform

03

Healthcare Applications

Patient monitoring, elder care assistance, rehabilitation support, and clinical workflows that leverage the certified safety layer below. Foundational HITL - Human (Doctor) in the Loop

Examples: Medication reminders, fall detection, physical & emotional therapy guidance, vital signs monitoring

02

CORE

Our SaMD Safety OS

Modular safety and compliance layer with real-time monitoring, risk mitigation, and regulatory-grade logging. This is the missing piece that enables healthcare deployment.

FDA SaMD Class II certified • EU MDR compliant • Real-time safety monitoring • Incident response protocols

01

OEM Hardware Platform

Any humanoid robot from the "Humanoid100" ecosystem. Our hardware-agnostic architecture integrates with any platform via standardized APIs.

Examples: Unitree, Boston Dynamics, Unitree, emerging players from the Morgan Stanley Humanoid 100

Technical Features & Integration

1

Hardware-Agnostic Integration

Works with any humanoid platform via standardized APIs and middleware. Proven integration with an existing Rehabilitation Robot demonstrates compatibility across diverse hardware architectures.

2

Real-Time Safety Monitoring

Continuous risk assessment and intervention protocols validated through academic partnerships with key Universities. Active monitoring ensures patient safety at every interaction point.

3

Regulatory-Grade Logging

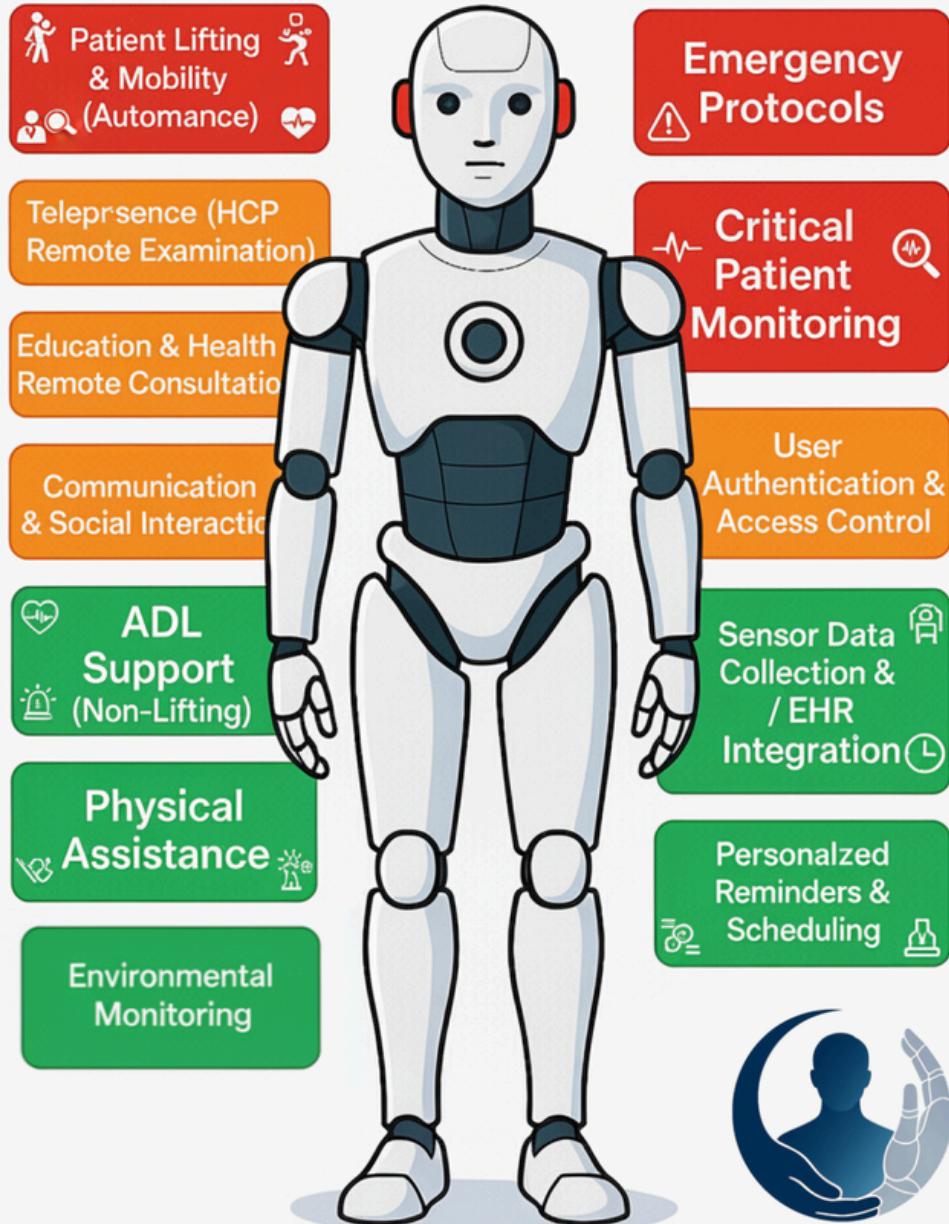
Full audit trails and data capture designed to meet FDA SaMD Class II and EU MDR requirements. Every action, decision, and intervention is logged for regulatory compliance and post-market surveillance.

4

Modular Architecture

OEMs can license the complete safety stack or select specific modules based on their deployment needs. Flexible integration allows compliant customisation. Important to follow [TOGAF](#) AI Enterprise Architecture and for Sensor / EHR data - [HL7 FHIR](#)

Humanoid Healthcare SaMD Features



Software as a Medical (SaMD)

Risk Levels Red = High, Orange = Medium, Green = Low

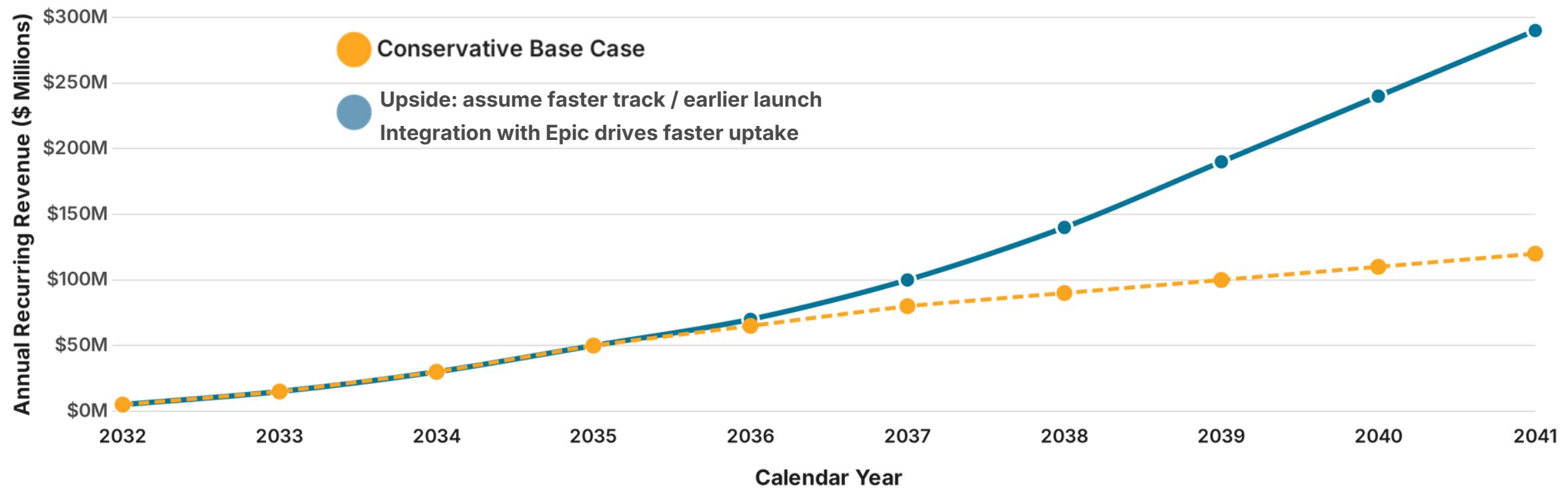
Regulation is not a barrier. It's our moat.

- ⚠️ Competitors avoid regulation → exposed
- ✓ We turn compliance into defensibility

Full Regulatory Plan at HumanoidHealthcare.AI



Financial Projections: Two Paths to Market Leadership



Our conservative base case delivers strong, venture-scale returns. Our strategic catalysts (regulatory fast-tracking, US market advantage) are designed to unlock the accelerated upside case, creating a generational investment opportunity.

The Investment Thesis: A Generational Financial Return

NET PRESENT VALUE (NPV)

\$279M

Demonstrates strong profitability, discounted at 15%

RETURN ON INVESTMENT (ROI)

x 49

4,900% return on total invested capital over the 20-year horizon

PAYBACK PERIOD

Year 4 (2035)

Capital-efficient model achieves payback just as competitors enter

TOTAL NET PROFIT (20-YEAR)

\$3.7B

Highlights the long-term potential for market dominance

Financial metrics are calculated based on our 20-year Accelerated Upside Case model.

Our Core Financial Assumptions

| Category | Assumption / Rationale |
|--------------------------|---|
| Launch Timeline | US Launch: 2032 (Year 1); EU Launch: 2033 (Year 2) |
| Unit Price | \$15 - 25 K per SaMD unit annual recurring license (Tiered pricing via Insurance) |
| Cost of Revenue (COGS) | 5% of Total Revenue (high-margin SaaS model) |
| Operating Expense (OpEx) | \$20M fixed annual cost + 10% of variable revenue |
| Discount Rate (WACC) | 15% (reflecting high-risk, high-growth technology) |
| Competition | Arrives Year 4 (2035), leading to slower growth post-Year 10 |
| Initial Investment | \$6M for pre-launch R&D, pilots, and regulatory prep |

Our model is built on standard, defensible assumptions for a high-margin SaaS business entering a regulated market. The extraordinary returns are driven by the sheer scale of the market opportunity and our unique regulatory moat.

\$15 - 25 K price per SaMD installation, should be compared to \$100 K for a live in Human nurse (& Hospitalisations avoidance)



Go-to-Market Strategy: Phased Plan for Leadership

01

2025 - 2026

Foundation: Pilot & Rapid Validation

- Initial Pilots in Geriatric Care Home UK, US - acontrolled environment
- After initial tests, expand to Chronic Cancer Patients rehabilitating at home
- Engage with Regulators Early. Lobby for fast-track. Celebrity Advocates

02

2027 - 2028

Real-World Evidence & Submit SaMD Dossier

- First OEM partnerships from "Humanoid 100" ecosystem
- Real-world evidence generation from deployed fleet
- Achieve dual-track SaMD / EU MDR Dossier Submission, with priority functions

03

2029 - 2032

SaMD / MDR Review: Launch US 2032

- Build up Marketing machine for launch and make Patients aware
- Secure first US Launch customers patient with OEM partnership
- Build the 3rd Party App Store and prepare all licensing agreements
- Expand the Scaling team for Educations, training & change management
- Connect EHR data via Epic in US, and Robot Sensors with Consent, I&AM

04

2033 - 2040

Launch EU & Scale via The "App Store" Model

- License our SaMD platform (B2B) to OEMs who then deploy humanoids to healthcare providers and eldercare facilities (B2C).
- Scale network effects via API licensing to 3rd-party developers, insurers, Pharma
- Real-world evidence learnings across fleet, establish "Hive Mind" Data Moat

Business Model: A Multi-Layered Revenue Strategy

We generate revenue at every layer of the ecosystem, from one-time integration fees to high-margin, recurring software & data licences

Partnership & Platform Revenue

PRODUCT

Co-Developed Solutions & API Licensing

CUSTOMER

Major OEMs, Pharma, App Developers

LAYER 4

REVENUE

\$5M+ per joint venture + API fees

The highest-margin revenue, leveraging our position as the industry's central nervous system

DaaS - Data & Analytics

PRODUCT

RWE Platform & Advanced Analytics Suite

CUSTOMER

Pharma, Payers, Healthcare Systems

LAYER 3

REVENUE

\$10k add-on per unit/year + \$1M+ enterprise contracts

Tiered pricing: The \$25k/year license includes this full data stack, creating a powerful upsell from the core Safety OS

SaMD Licensing

PRODUCT

The Core Safety OS License

CUSTOMER

OEMs

LAYER 2

REVENUE

\$15 - \$25 K per unit annual licensing (Tiered pricing) via Health Insurance

Professional Services

PRODUCT

OEM & EHR Integration Services

CUSTOMER

OEMs and Healthcare Systems

LAYER 1

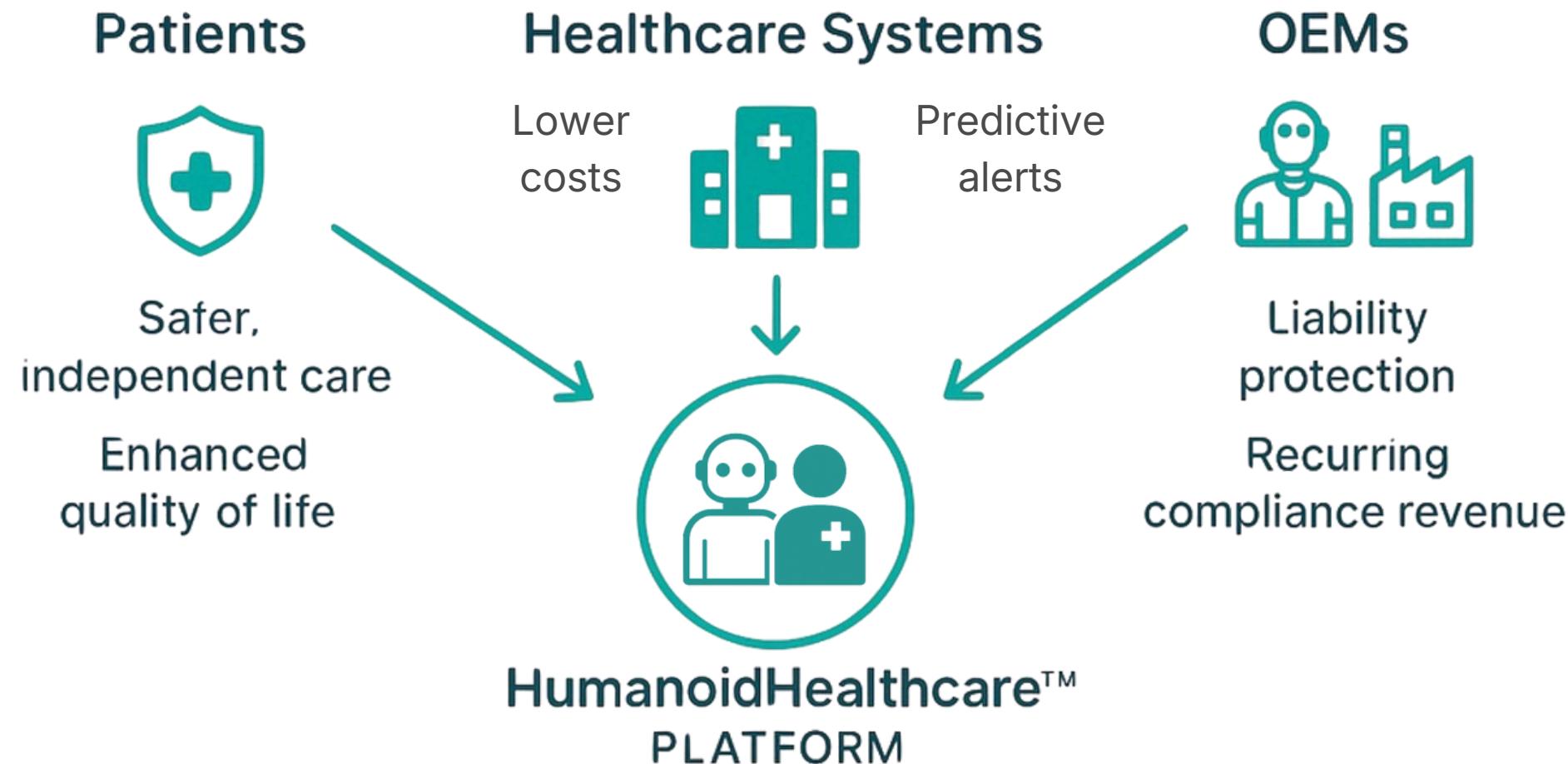
REVENUE

\$100k - \$500k+ per engagement

Covers the upfront cost of hardware integration and bespoke EHR connectivity, de-risking our SaaS model

Humanoid Healthcare: Triple Win Value for Ecosystem

The **Orchestrator** that empowers patient independence, saves on hospitalisations, protects Manufacturers & generates recurring revenues



The Industry's Central Nervous System

As more OEMs adopt our Safety OS, we become the **central nervous system** of the healthcare robotics industry

NETWORK EFFECTS

- 1 Real-World Evidence Generation
Each deployment generates data that improves safety protocols for all users. The more robots deployed, the safer and more effective the entire system becomes.
- 2 Data Network Effects
More users lead to better protocols, which attract more users. This creates switching costs and competitive moat that compounds over time.
- 3 Infrastructure Layer
We're not just selling software — we're building the foundational infrastructure layer that the entire healthcare robotics industry will depend on.

\$6.0M Seed Round

\$3M EU & \$3M in US, & dual-track preparation of SaMD/MDR Dossiers

Milestones Achieved

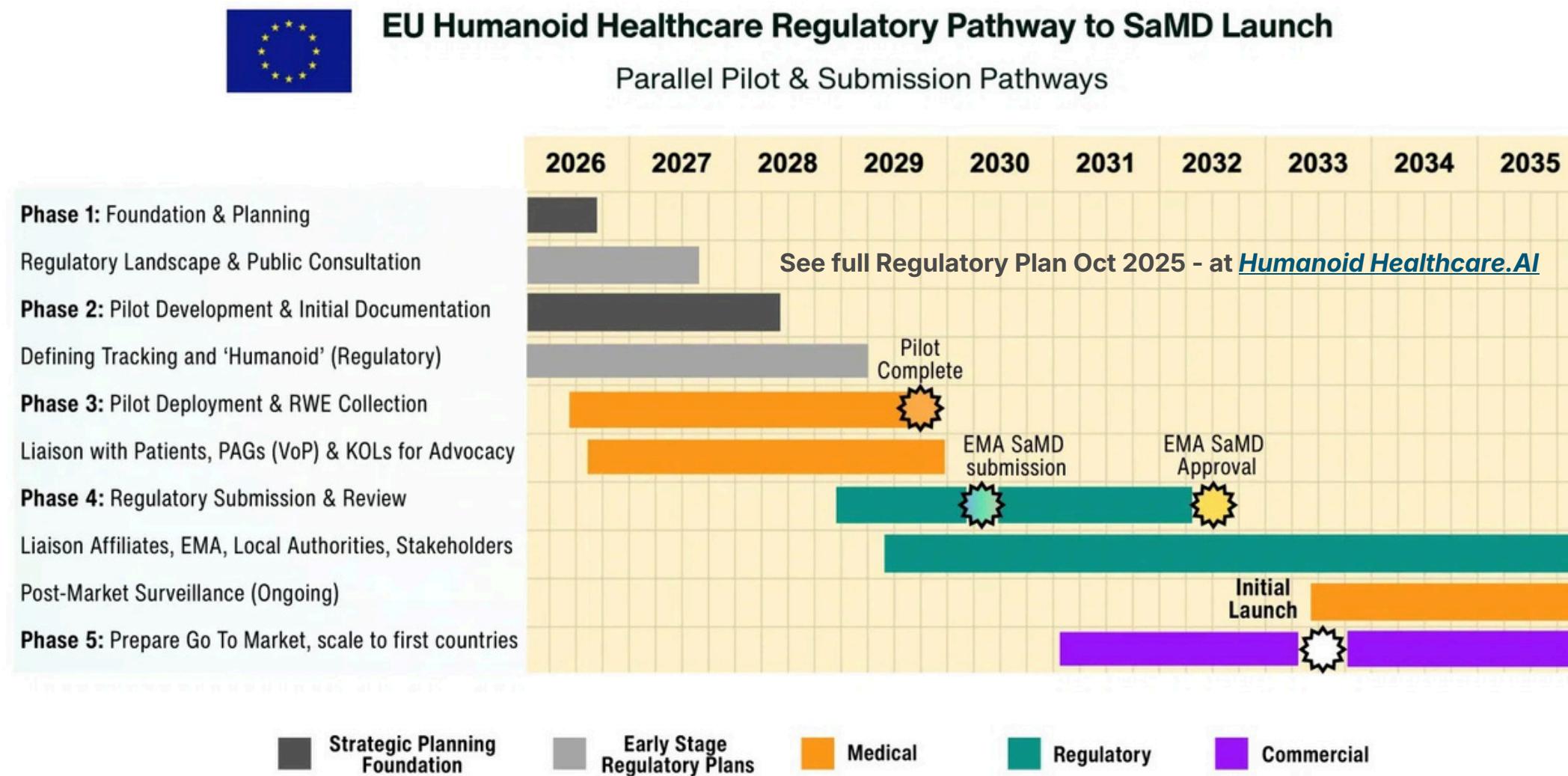
- ✓ Pilot Geriatric Care Homes
- ✓ Expand to cancer patients rehabilitating at home
- ✓ First RWE read
- ✓ Prepare SaMD / MDR Dossiers
- ✓ Partnerships with Robotic Hardware Go2Market

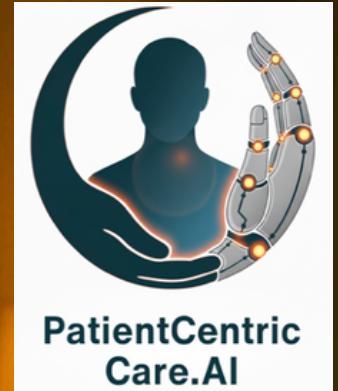
Use of Funds

- 55%** Clinical Pilot & RWE Analysis Development (MVP)
Rapid prototyping, completing MVP SaMD software, pilot deployment with EU hospitals
- 20%** Regulatory Affairs & Quality Systems
FDA/EU MDR certification, ISO 13485, IEC 62304 compliance infrastructure
- 25%** Development, IT, Operations & Legal
Team expansion, engineering infrastructure, legal entity setup

Appendix: EU Regulatory Pathway

Gantt chart showing a detailed path to Launch in EU in 2033. Expect slightly faster in US





PatientCentric
Care.AI

**Humanoid
Healthcare.AI**

