THE ROBOTICS MARKET UNVEILED: GROWTH FORECASTS AND THE ROLE OF AI

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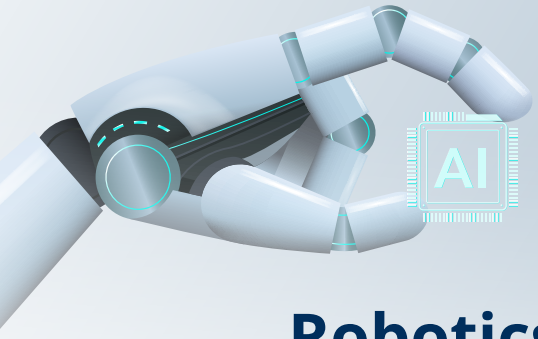


Robotics at a Global Inflection Point

The global robotics market is entering a high-growth phase as mobile, industrial, collaborative, humanoid, and exoskeleton robots reshape automation across industries. Fueled by AI integration, labor shortages, and reshoring initiatives, this transformation presents critical opportunities and strategic decisions for OEMs, technology vendors, and enterprises worldwide.

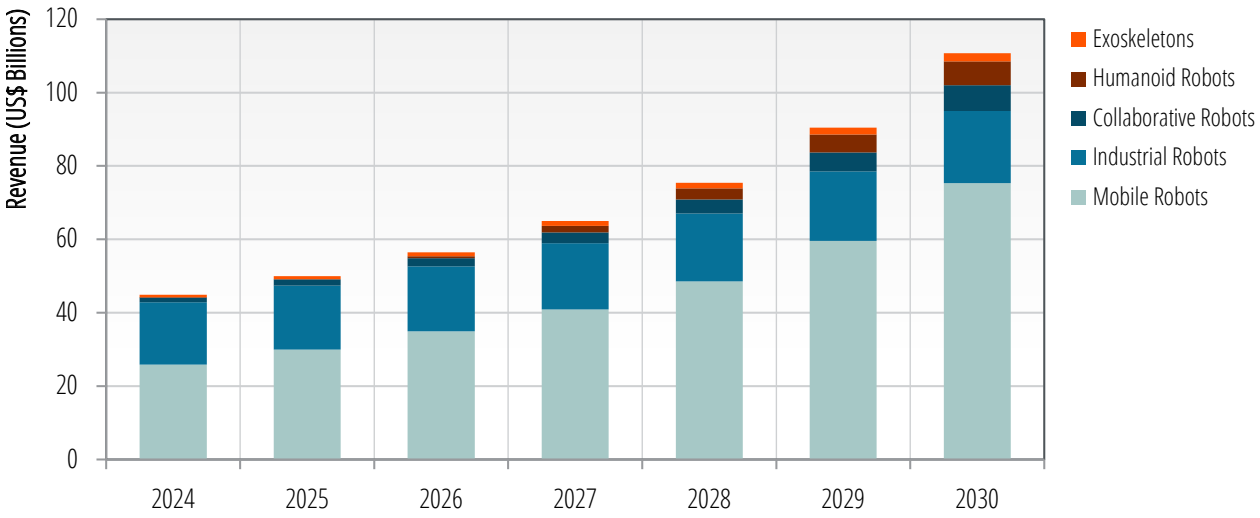
By 2030, nearly 13 million robots are expected to be in global circulation. While reshoring, labor shortages, and supply chain pressures continue to drive demand, robotics is evolving into a pillar of Industry 4.0 strategies across sectors.

ABI Research forecasts that the robotics hardware market will grow from US$50 billion in 2025 to nearly US$111 billion by 2030. The opportunities to innovate are ripe not only for robot Original Equipment Manufacturers (OEMs), but also Artificial Intelligence (AI) vendors, software providers, System Integrators (SIs), and connectivity players.

This whitepaper examines the market trends of the five major robot types, while also unpacking the transformative role of AI in next-gen automation.

Commercial and Industrial Robot Product Revenue, 2024 to 2030

(Source: ABI Research)



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Mobile Robots: Dominant and Fast-Expanding

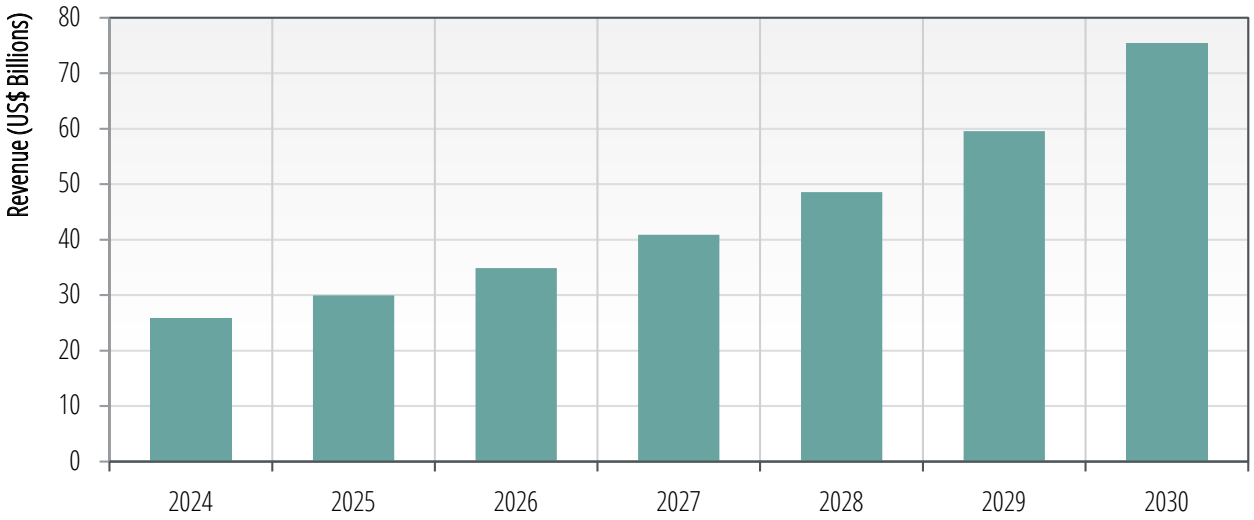
Mobile robots are the largest segment, generating US$30 billion in 2025 and increasing to US$75 billion by 2030 (a 16.5% Compound Annual Growth Rate (CAGR)). Material handling and Automated Storage and Retrieval System (AS/RS) use cases dominate logistics, warehousing, agriculture, and ports.

Key Trends:

- **Material Handling Boom:** Autonomous Mobile Robots (AMRs) enable goods-to-person, pallet transport, and truck unloading.
- **AS/RS Surge:** Rail-Mounted Robots (RMRs) are lowering costs, making AS/RS viable at scale.
- **Software-Centric Value:** 84% of all robotics software revenue by 2030 will come from mobile robot deployments.
- **Expanded Use Cases:** Growth in cleaning robots (retail), delivery bots (e-commerce), and AMRs (agriculture).
- **Labor Shortage Response:** Workforce gaps and fulfillment pressure drive automation adoption.

Mobile Robot Revenue, 2024 to 2030

(Source: ABI Research)



Industrial Robots: Mature and China-Dominated

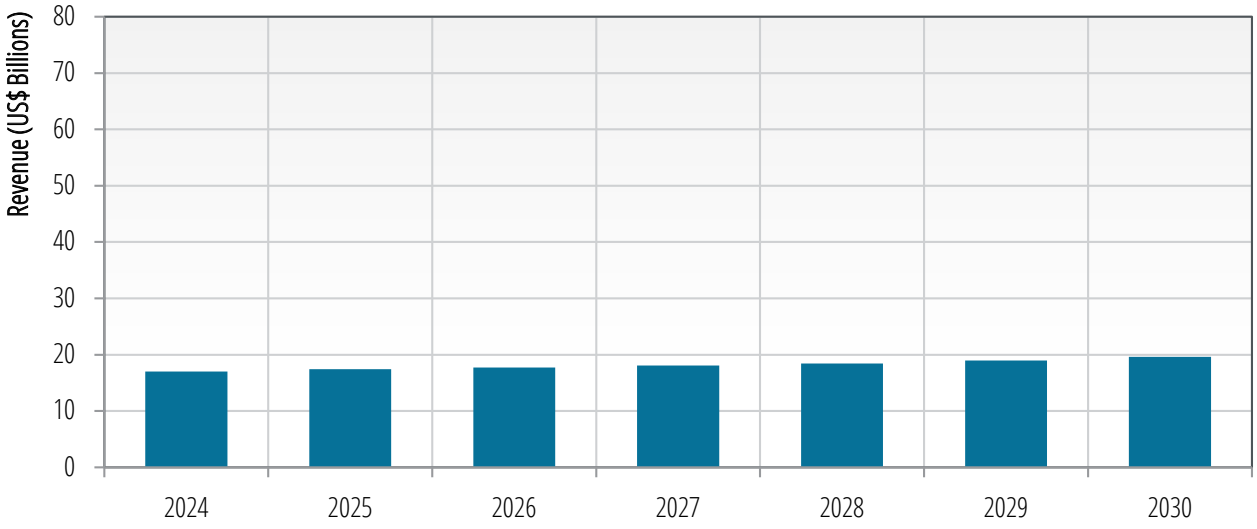
Industrial robots represent a foundational segment, valued at US$17.4 billion in 2025 and projected to reach US$19.6 billion by 2030. While this translates to a modest 2% CAGR, it reflects the maturity of this segment. Industrial robotic systems are deeply entrenched in high-volume manufacturing, especially automotive, electronics, and machinery.

Key Trends:

- **China Dominance:** Accounts for 42% of global industrial robot revenue, with Asia-Pacific leading overall robot installations.
- **Reshoring Catalysts:** U.S. and European firms increasingly deploy industrial robots to support nearshoring and digitalization.
- **AI-Augmented Automation:** Graphics Processing Unit (GPU)-enabled computing and vision systems are entering traditional assembly lines.
- **Software Standardization:** Growing use of offline programming, low-code tools, and standardized robotics software platforms.
- **Diverse Applications:** Welding, painting, material handling, and screwing remain popular use cases.

Industrial Robot Revenue, 2024 to 2030

(Source: ABI Research)



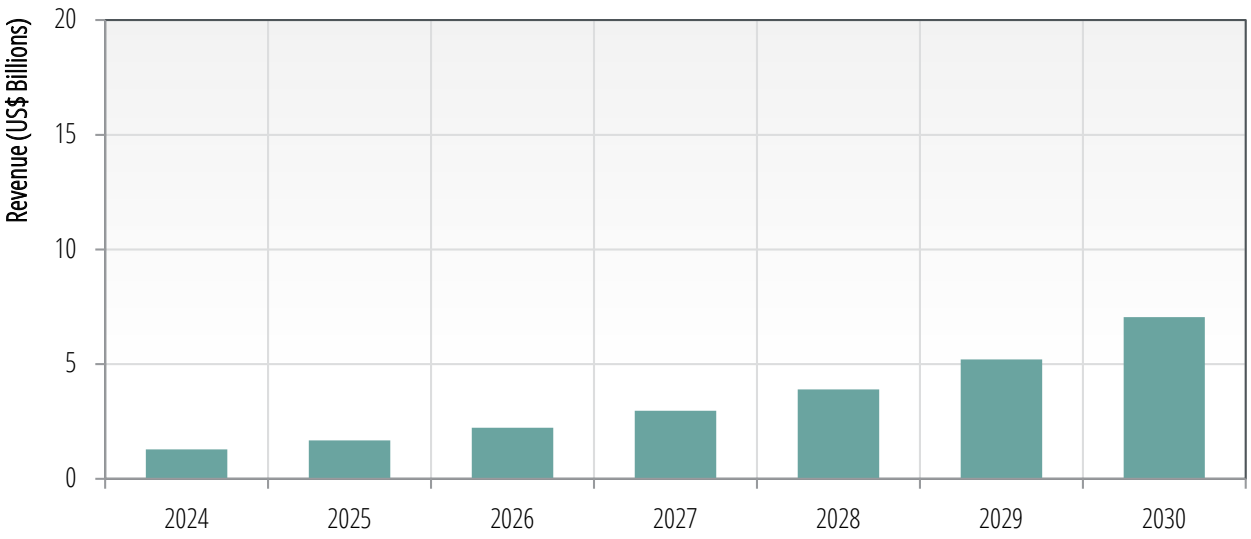
Collaborative Robots (Cobots): Safe, Flexible, and Ripe for AI

Cobots are projected to grow from US$1.3 billion in 2024 to US$7 billion by 2030 (27.5% CAGR). Market growth is driven by safety, flexibility, physical AI advancements, and accessibility in constrained environments.

Key Trends:

- **Even Application Distribution:** Palletizing, machine tending, inspection, picking, and welding all share similar revenue shares.
- **AI + Closed-Loop Control:** Vendors like Palladyne IQ embed real-time learning to adapt cobots to changing work environments.
- **Greenfield Penetration:** Small and Medium Enterprises (SMEs) and life sciences are adopting cobots for accessible automation.
- **Integration Challenges:** Lack of automation experience in target markets increases demand for vendor support and training.

Collaborative Robot Revenue, 2024 to 2030
(Source: ABI Research)



Humanoid Robots: High Growth, but Still Early Days

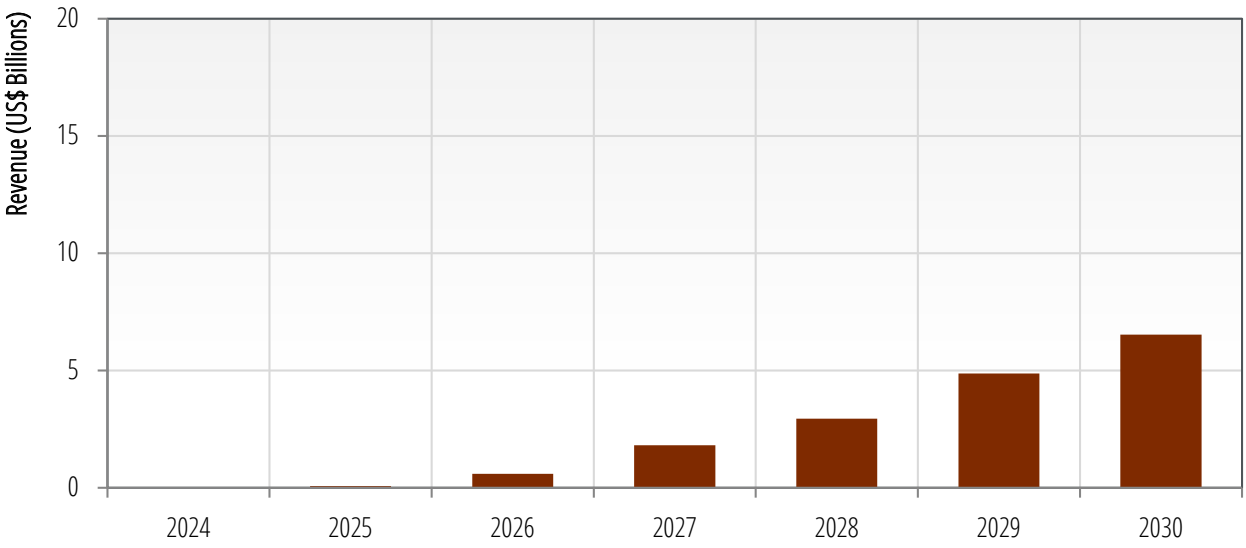
The humanoid robot market will grow from just US$70 million in 2025 to US$6.5 billion in 2030 (137.7% CAGR), although it currently makes up less than 2% of the robotics market.

Key Trends:

- **Investor Momentum:** Apptronik, EngineAI, and Figure AI have raised hundreds of millions in venture funding.
- **Early Use Cases:** Initial deployments focus on entertainment, concierge services, and marketing.
- **Industrial Promise:** Future roles in hazardous inspections (oil & gas) and medical support are anticipated.
- **Rapid Average Selling Price (ASP) Decline:** From US$158,000 in 2024 to US$38,000 by 2030, enabling mainstream adoption.
- **Research and Development (R&D) Focus:** Most players are still in the prototyping stage; market-readiness is expected later in the decade.

Humanoid Robot Revenue, 2024 to 2030

(Source: ABI Research)



Exoskeletons: Ergonomic Enhancers in Industry and Healthcare

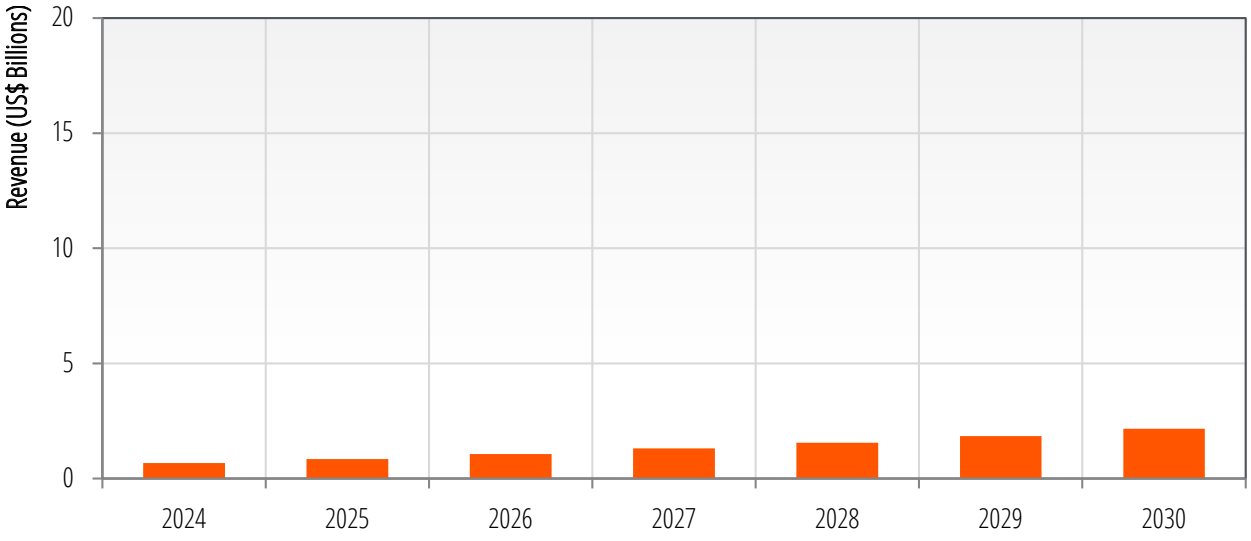
Expected to reach US$2.2 billion by 2030, exoskeletons are growing at a healthy 18.1% CAGR. Adoption growth is stimulated by industrial safety, logistics, and rehabilitation use cases.

Key Trends:

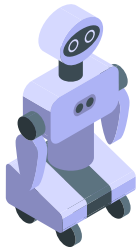
- **Industrial Safety:** Automotive and aerospace firms invest in powered suits to reduce workplace injuries.
- **Healthcare Rehabilitation:** Assistive motion for patients and aging populations.
- **Form Factor Differentiation:** Active (powered) exoskeletons dominate revenue; passive suits drive shipment volume.
- **Cost Stratification:** Full-body heavy-lift units can exceed US$100,000; light-lift passive models are under US$20,000 for lower and upper body exoskeletons.
- **Dual Sector Appeal:** Industrial and commercial segments account for 85% of global exoskeleton revenue. Military trails in third, with civil and consumer lagging behind.

Exoskeleton Revenue, 2024 to 2030

(Source: ABI Research)



The Growing Role of Artificial Intelligence in Robotics



Artificial Intelligence (AI) is becoming the central nervous system for next-generation robotics. As robots shift from rigid, rule-based systems toward more flexible and intelligent operations, AI is unlocking new levels of autonomy, perception, and adaptability across robotic form factors.

Closed-Loop Control and Perception

Physical AI is a major talking point within the robotics industry, driven by real-time sensor fusion, machine vision, and embedded inference. Physical AI enables robots to react dynamically to their environment. Cobots, for instance, now use closed-loop systems that continuously ingest and process sensor data to adapt movements on the fly. This enables them to function safely alongside humans in unpredictable settings.

AI Agents for Specialized Tasks

Lightweight, domain-specific agents are emerging to give robots skills such as palletizing, pick-and-place, or machine tending. These agents often live at the edge or within robot controllers and support seamless integration into workflows with minimal training data. As a result, end users can deploy robotic systems faster in greenfield environments like SME manufacturing, construction, or agriculture.

Robotics Foundation Models and World Models

The most transformative trend is the rise of robotics foundation models, which allow robots to generalize across unseen tasks, objects, and environments. Vendors like Dexterity, Skild AI, and NVIDIA have demonstrated early commercial traction, while players like Google DeepMind and Meta continue development in research labs.

These models combine reinforcement learning with diverse datasets to reduce time-to-deployment and scale robot capabilities across use cases.

Closely linked to foundation models are world models, a more advanced AI architecture that allows robots to simulate their environment, predict object behavior, and "think ahead." This is a clear upgrade from traditional robots that react blindly. World models bridge perception and planning, enabling model-based autonomy for complex robots like humanoids. Prominent initiatives such as NVIDIA's Cosmos and Google's Gemini are laying the groundwork for robots that can reason and act with human-like foresight.

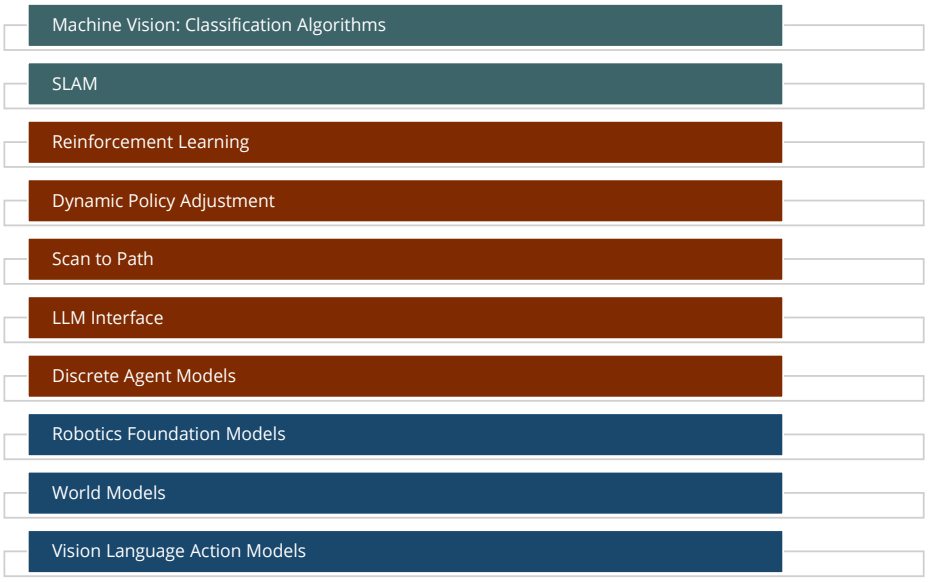
Maturity Index, AI in Robotics

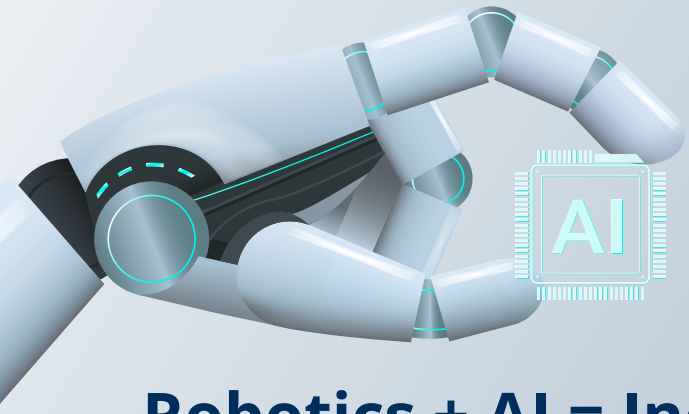
Commercially Mature*: Used extensively in commercial deployments today

Some Commercial Success: Some innovators have brought these technologies to market. Not common practice; Grappling with scale. Semi-mature.

Currently Confined to Research and Development (R&D): Success and repeatability below 99%

* *Mature being a performant product ready for handover to third parties (e.g., SIs, in house engineers); ready and able to scale.*





Robotics + AI = Industry 4.0 Foundation

The robotics market is on track to more than double by 2030, transforming how industries manage labor, logistics, and productivity. Mobile and industrial robots continue to attract the most investment, while collaborative robots are opening the door to automation in new areas. Humanoids and exoskeletons are also gaining momentum as they move closer to mass deployment.

AI is playing a critical role in this evolution. Technologies like agentic intelligence and robotics foundation models are making robots more adaptable, responsive, and capable across a wide range of tasks.

As robotics moves beyond basic automation toward true intelligent autonomy, success will depend on strong collaboration. OEMs, AI developers, systems integrators, and software partners must work together to build smarter, safer, and more scalable robotic solutions.

Partner with ABI Research to Accelerate Robotics Strategy

From mobile robots to humanoids, navigating today's robotics landscape requires more than forecasts—it demands actionable insight and trusted guidance. ABI Research supports robotics users, OEMs, AI developers, SIs, and investors with data-driven market intelligence, go-to-market strategies, and Return on Investment (ROI) modeling.

Contact Us to Schedule a Strategy Session

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157 Columbus Avenue
New York, NY 10023
Tel: +1 516-624-2500
www.abiresearch.com

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