

F R O S T & S U L L I V A N



Market
Engineering

Independent Market Study on Global and China Intelligent Intralogistics Robotics Industry

Presented to

GALAXIS

March 2026

Confidential

©2025 Frost & Sullivan. All the information contained herein (including without limitation data, words, charts and pictures) is the sole property of Frost & Sullivan, treated as highly confidential document, unless otherwise expressly indicated the sources in the report. Should no one copy, reproduce, diffuse, publish, quote, adapt, compile all or any part of the report without the written consent of Frost & Sullivan. In the event of the violation of the above stipulation, Frost & Sullivan reserve the right of lodging claim against the relevant persons for all the losses and damages incurred.

Research Scope

Independent Market Study on Global and China's Intelligent Intralogistics Robotics Market

Research Period

- Base year: 2024
- Historical: 2020 to 2024
- Forecasting: 2025E to 2030E

Service Market Scope

- Intelligent Intralogistics
- Intelligent Intralogistics Robotics

Geographical Scope

- Global
- China

Assumptions and Methodology

Assumptions:

The market size and forecasts were modeled by Frost & Sullivan based on the following assumptions.

- the social, economic and political conditions in global and China markets discussed will remain stable during the forecast period.
- government policies on global and China markets will remain consistent during the forecast period.
- global and China markets will be driven by the factors which are stated in the report.

Methodology:

In preparing the report, Frost & Sullivan has relied on the statistics and information obtained through primary and secondary research.

- primary research includes interviewing industry participants, competitors, downstream customers and recognized third-party industry associations.
- secondary research includes reviewing corporate annual reports, databases of relevant official authorities, as well as the exclusive database established over the past decades.

Source: Frost & Sullivan

Terms and Glossaries (1/3)

Glossaries:

Shenzhen Galaxis Energy	New	Shenzhen Galaxis New Energy Technology Co., Ltd. (深圳凱樂仕新能源科技有限公司), a limited liability company established under the laws of the PRC on January 23, 2024, and a wholly-owned subsidiary of the Company	Single Largest Group of Shareholders	Dr. GU, Dr. YANG, Mr. SHEN Lu, Ms. MA Lan, Jiaxing Jiumai, Jiaxing Huige, Jiaxing Rongming and Jiaxing Gaile
STA		the State Taxation Administration (中華人民共和國國家稅務總局)	depth camera	cameras that capture 3D information by measuring the distance between the camera and surrounding objects, enabling spatial awareness for robots
State Council		the State Council of the PRC (中華人民共和國國務院)	“Stock Exchange” or “Hong Kong Stock Exchange”	The Stock Exchange of Hong Kong Limited, a wholly owned subsidiary of Hong Kong Exchanges and Clearing Limited
subsidiary(ies)		has the meaning ascribed thereto under the Listing Rules the Codes on Takeovers and Mergers and Share Buybacks	substantial shareholder(s)	has the meaning ascribed thereto under the Listing Rules
Takeovers Code		issued by the SFC, as amended, supplemented or otherwise modified from time to time	Track Record Period	the three years ended December 31, 2022, 2023 and 2024 and the six months ended June 30, 2025
“U.S. dollars,” “US\$” or “USD”		United States dollars, the lawful currency of the United States	U.S. Securities Act	the United States Securities Act of 1933, as amended and supplemented or otherwise modified from time to time, and the rules and regulations promulgated thereunder
Underwriters		the Hong Kong Underwriters and the International Underwriters	Underwriting Agreements	the Hong Kong Underwriting Agreement and the International Underwriting Agreement

Source: Frost & Sullivan

Terms and Glossaries (2/3)

Glossaries:

3C electronics	collective term for three major categories of electronic products: computer, communication, and consumer electronics AGV	automated guided vehicles, which are vehicles that follow predefined paths or markers to transport materials within a facility
AI	artificial intelligence AMR	autonomous mobile robots, which are robots designed to navigate environments without human intervention using advanced sensors and algorithms
blue-chip customer	customers that are well-established, financially stable, and highly regarded in its industry CAGR	compound annual growth rate
CE	Conformité Européenne, a regulatory standard that verifies certain products are safe for sale and use in the European Economic Area CSR	conveying and sorting robots, which are robots used for handling various materials to achieve rapid and accurate sorting and conveying functions
embodied AI	a form of AI that learns and makes decisions through physical interaction with its environment, integrating perception, decision-making and execution capabilities to operate autonomously in real-world settings Galaxis CI	Galaxis Computational Intelligence, our computational intelligence platform that optimizes the scheduling and operational efficiency of robotic systems through sophisticated algorithms
Galaxis CT	Galaxis Control Technology, our innovative control technology in adaptive motion control, remote data monitoring and debugging to ensure efficient and accurate execution of robotic components and modules Galaxis low-code fusion development platform	our custom-built platform for efficient and flexible software development, which enables efficient integration of multi-sensor data with minimal coding
Galaxis PI	Galaxis Perception Intelligence, our advanced sensing system integrating radar and vision technologies that enables our intelligent robots to perceive and understand environments, goods, and the physical world with precision goods-to-person	process of automatically transporting goods to the operator through an automated system, reducing the walking and searching time of the operator and improving picking efficiency
high-bay facility	a structure designed to maximize vertical storage capacity in a single expansive space, with a clear height of up to 36 meters heavy pallet operations	the handling of heavy pallets, each with a payload of up to 1.5 tons

Source: Frost & Sullivan

Terms and Glossaries (3/3)

IMU	inertial measurement unit, an electronic device that measures and reports a body's specific force, ISO angular rate, and sometimes the orientation	the International Organization for Standardization, a worldwide federation of national standards bodies
intralogistics	the movement, storage, and management of materials and goods within a company's facility, such as a warehouse, distribution center, or manufacturing plant LiDAR	light detection and ranging, a remote sensing method that uses light to measure the distance or range of objects
lightweight handling	tote the movement of lightweight containers or totes, each with a payload of up to 50 kilograms MSR	multi-directional shuttle robots, a type of material handling robot designed to move in multiple directions within storage racks
multi-story warehouse	a structure with multiple operational stories designed for storage and logistics, typically featuring a clear height of approximately 3 to 7 meters per story QR code	quick response code, a machine-readable optical label containing information about the item to which it is attached
R&D	research and development VNA AMR	very-narrow-aisle autonomous mobile robots, a type of AMR specifically designed for warehouse environments with very narrow aisles, typically less than 1.8 meters in width
RCS	robot control system, which is a software system that controls and coordinates the movements of robots SKU	stock keeping unit
VFR	very-narrow-aisle forklift robots, which are forklift robots capable of operating efficiently in very narrow aisles, suitable for high-density storage scenarios SLAM	simultaneous localization and mapping, a computational technique used by robots to build a map of an environment while simultaneously determining their location within it
WCS	warehouse control system, which is a system that controls and coordinates the operations of a warehouse WMS	warehouse management system, which is a system that manages the storage and movement of goods within a warehouse
Stabilization Manager		

Source: Frost & Sullivan

1. Analysis of Global and China's Intelligent Intralogistics Robotics Industry

Overview of Intralogistics Industry

- Intralogistics refers to the movement, storage, and management of materials and goods within a facility, such as a warehouse, distribution center, or production plant. Depending on business requirements, logistics models, operational processes, and technical demands, intralogistics can be broadly categorized into two application scenarios: distribution and production.
- While certain industries may predominantly align with one scenario, such as e-commerce and retail having a stronger focus on distribution, or automotive and electronics emphasizing production, most businesses actually encounter both scenarios to varying degrees. For instance, automotive manufacturers not only manage production logistics but also operate sophisticated distribution networks for spare parts and finished vehicles. Similarly, major retailers may have production or assembly operations alongside their primary distribution activities. Understanding both scenarios ensures comprehensive coverage of intralogistics needs across all industries. While the specific context differs, both scenarios share fundamental objectives: minimizing operational downtime, ensuring continuous flow of materials, and optimizing logistics efficiency.
- Although certain industries predominantly align with one scenario — such as e-commerce and retail focusing on distribution, or automotive and electronics emphasizing production — most businesses operate across both domains to varying degrees. This dual presence is exemplified in automotive production, where production logistics coexist with comprehensive distribution networks for spare parts and finished vehicles. Similarly, major retail operations may integrate production or assembly capabilities alongside their distribution infrastructure. A thorough understanding of both scenarios ensures comprehensive coverage of intralogistics requirements across all industries.

Comparison between Distribution Scenario and Production Scenario

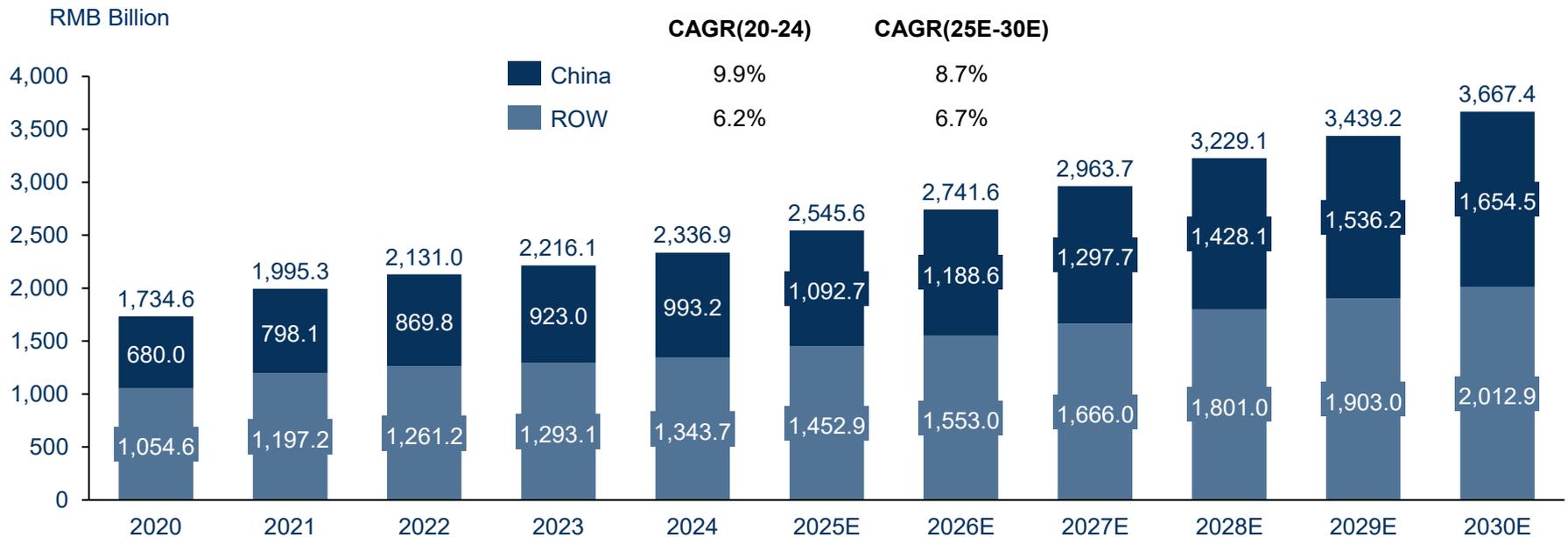
	Distribution	Production
Logistics Focus	Finished goods / merchandise	Raw materials, WIP, finished goods
Main Flow	Inbound → picking → packing → outbound	Warehouse → p production lines → storage
Core Objective	Fast order response, fulfillment speed	Continuous production, minimal line stops
Automation Focus	Picking, sorting, packing, outbound	Feeding, transport, WIP tracking, storing
Key Technologies	WMS, sorting systems, conveyors, shuttles, AMR/AGV, etc.	WMS, conveyors, AMR/AGV, shuttles, line-side storage, MES Integration etc.

Source: Frost & Sullivan

Market Size of Global and China's Intralogistics Industry

- The intralogistics industry is a crucial component of the modern supply chain, playing a key role in enhancing distribution efficiency, improving industrial productivity, and reducing operational costs. From 2020 to 2024, the global intralogistics market expanded steadily from RMB1,734.6 billion in 2020 to RMB2,336.9 billion in 2024, and is projected to reach RMB3,667.4 billion by 2030. China holds a significant share of the global intralogistics market. From 2020 to 2024, the market size in China increased from RMB680.0 billion to RMB993.2 billion, representing a CAGR of 9.9%. It is expected to reach RMB1,654.5 billion by 2030, with a CAGR of 8.7% between 2025 and 2030.

Market Size of Intralogistics Industry, Global and China, 2020-2030E

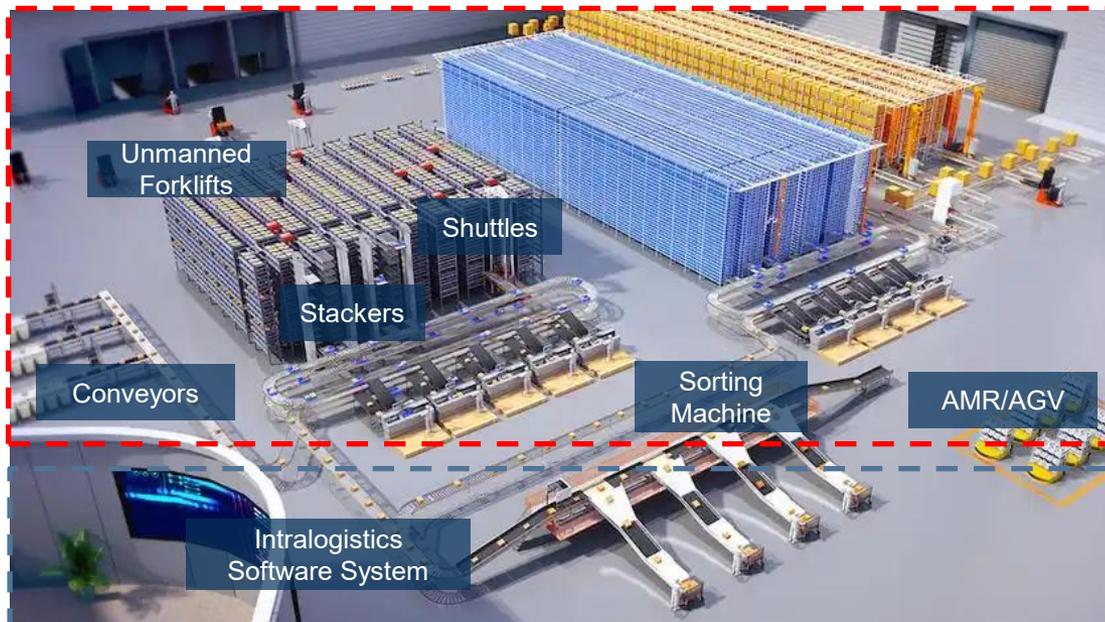


Source: Frost & Sullivan

Overview of Intelligent Intralogistics Robotics Industry

- A complete intelligent intralogistics robotics system integrates advanced hardware with intelligent software systems to transform material handling operations. The hardware suite includes shuttles for high-density storage, flexible AMR/AGV for intelligent material transportation, high-performance stacker cranes and other fixed robots, as well as RGVs that transfer goods via fixed tracks. These robotic components are seamlessly coordinated by sophisticated software platforms, such as Warehouse Management Systems (WMS) and Logistics Execution Systems (LES), to achieve real-time inventory tracking, dynamic route optimization, and data-driven workflow automation. This integrated solution collectively significantly enhances operational efficiency, accuracy, and throughput in manufacturing and distribution center environments, while providing the scalability needed to meet evolving business demands.

Overview of Intelligent Intralogistics Robotics



- The intelligent intralogistics robotics system constitutes the physical backbone of the intelligent intralogistics robotics. In this system, shuttles, AMR/AGV, fixed robots, and RGV work seamlessly together to achieve the automation of material transportation, storage, and distribution, thereby creating a unified and efficient intralogistics network.

- The intelligent software suite serves as the central nervous system of our solution, integrating WMS, real-time monitoring, and AI-driven scheduling to orchestrate robotic operations, optimize workflows, and enable data-driven decision-making across the entire logistics chain.

Source: Frost & Sullivan

Future Evolution of Intralogistics Industry: Intelligent & AI Driven Transformation

- The intralogistics industry is undergoing a radical transformation to become increasingly intelligent. The transformation is primarily driven by continuous innovations in hardware (especially shuttles and AMRs) and comprehensive software systems (WMS, WCS and RCS), boosting efficiency across core functions of intralogistics including storage, sorting and transport, and multi-sector applications.
- In recent years, with the rapid advancement of AI and its deeper application in the intralogistics industry, the intelligent transformation in intralogistics has been further accelerating. Robots in intralogistics are now progressing toward embodied AI, while software platforms leverage cloud-edge synergy and swarm intelligence to enable seamless multi-robot coordination. As a result, next-generation intralogistics solutions will demonstrate high generalization capabilities — performing novel tasks in unfamiliar scenarios.
 - Robot: At the perception level, robots leverage multimodal environmental perception technologies, such as image recognition, voice recognition, and stereoscopic vision, to perceive and understand their 3D surroundings, enabling them to identify and adapt to different objects and dynamic environments. At the decision-making level, reinforcement learning allows robots to continuously optimize their decisions through trial-and-error and feedback mechanisms, integrating real-time data into the learning process. At the control level, embodied AI technologies are now enabling robots to self-adjust and refine their motion paths through machine learning algorithms, achieving more precise motion planning and execution.
 - Software: Continuous advancements in AI algorithms and computing power are significantly enhancing the cloud-edge collaboration and swarm intelligence capabilities of software systems. Large-scale simulations and model training can be executed in the cloud to dynamically support the edge with real-time data, enabling efficient multi-robot coordination and smarter, more agile operational scheduling.
 - Solution: AI-empowered solutions are evolving toward greater generalization. These solutions will be increasingly capable of being deployed efficiently across a wide range of new application scenarios, facilitating rapid adaptation to diverse and complex working environments.

Source: Frost & Sullivan

Introduction of Intelligent Intralogistics Robots (1/3)

- The evolution of intelligent intralogistics is fundamentally linked to advances in robotic systems, which have become the key enabling technology for modern facility automation. At their core, intelligent intralogistics robots combine advanced technologies including navigation and localization, motion control, autonomous driving, multi-robot coordination, and AI to automate critical tasks such as material storage and retrieval, transport, and sorting within facilities. Major types of intelligent intralogistics robots primarily include:
 - **Shuttles:** Shuttles comprise specialized robots for tote and pallet handling operations. These robots primarily consist of two types: four-way shuttles enabling omnidirectional movement (forward, backward, left, right), and two-way shuttles restricted to linear reciprocating motion. Supported by high-speed lifts, shuttles are predominantly deployed in high-bay warehousing and stereoscopic storage, where their compact size and agile movement capabilities facilitate high-density inventory handling within racks.
 - **Mobile Robots (AMR/AGVs):** AMRs usually utilize SLAM and QR code technologies for navigation, and are enhancing their dynamic path planning capabilities through the application of AI to offer flexible transportation of materials such as pallets and totes. AGVs, on the other hand, follow predefined routes for reliable transportation of these materials. Very-narrow-aisle AMR (VNAAMR) is a type of AMR specifically designed for warehouse environments with very narrow aisles, typically less than 1.8 meters in width. VNA AMRs utilize high-precision positioning and navigation technologies to autonomously transport and pick items between shelves within limited spaces. Equipped with lifting systems, they can also access goods stored on multiple vertical levels. By contrast, other AMRs emphasize flexibility and are more suitable for open space and logistics centers or production workshops that undergo frequent changes. VFRs are a subset of VNAs, which are in turn a subset of AMRs.
 - **Conveying and Sorting Robots (CSRs):** CSRs are designed to handle a wide range of materials, enabling continuous movement of the materials while executing high-speed transportation, precise picking and sorting operations. Equipped with sensors, machine vision cameras and other intelligent recognition systems, they can identify the shapes of items through the image recognition system, sort the items with robotic arms or other sorting devices, such as cross belt, and then convey and place those items in designated locations, thereby achieving rapid conveying and sorting of goods.
 - **Other Robots:** Other robots are composed of RGVs and stacker cranes. RGVs are material handling vehicles that operate on rails in warehouses and manufacturing facilities. Stacker cranes, equipped with forks or poles as handling devices, are specialized to grasp and stack or retrieve unitized goods from high-level shelves in industrial settings such as warehouses and workshops.
- Intelligent intralogistics robots represent a paradigm shift in modern facility operations, emerging as an indispensable solution to address critical operational challenges in an increasingly complex and demanding business environment. They transform operational capabilities by dramatically enhancing efficiency, significantly reducing labor dependency, and virtually eliminating human error. Operating continuously 24/7 while maintaining precise performance and workplace safety, these robots and systems establish new benchmarks for operational excellence.
- Acting as modular building blocks, these robots can be combined and configured to create customized systems that address diverse operational needs. These systems offer unprecedented flexibility to scale operations and adapt to evolving business requirements without extensive infrastructure modifications—a critical advantage in today's rapidly changing market conditions.

Source: Frost & Sullivan

Introduction of Intelligent Intralogistics Robots (2/3)

Category of Intelligent Intralogistics Robots

Robot Type	Core Function	Key Technology	Load Capacity & Moving Speed
Shuttle 	<ul style="list-style-type: none"> High-density storage/retrieval in racks 	<ul style="list-style-type: none"> Multi-directional running mechanism; Multi-robot scheduling; Intelligent dispatching system 	<ul style="list-style-type: none"> Moderate capacity:50-1,000kg 1.0-4.0 m/s
AMR/AGV 	<ul style="list-style-type: none"> Material transport (pallets, carts, goods) 	<ul style="list-style-type: none"> AMR: SLAM, AI path planning AGV: Magnetic tape/laser guidance; 	<ul style="list-style-type: none"> Moderate capacity:100-1,500kg Speed:0.5-2.0 m/s
Conveying and sorting robot 	<ul style="list-style-type: none"> High-speed sorting at fixed locations 	<ul style="list-style-type: none"> High-speed actuators; precision control systems 	<ul style="list-style-type: none"> High capacity:500-2,000kg Very low flexibility

Source: Frost & Sullivan

Introduction of Intelligent Intralogistics Robots (3/3)

Performance Profile of Intelligent Intralogistics Robots

Robot Type	Storage Capability	Sorting Capability	Transport Capability	Flexibility	Scalability
Shuttle	●	◐	◑	◐	◐
AMR/AGV	◑	◑	●	●	●
Conveying and sorting robot	◑	●	●	◑	◐

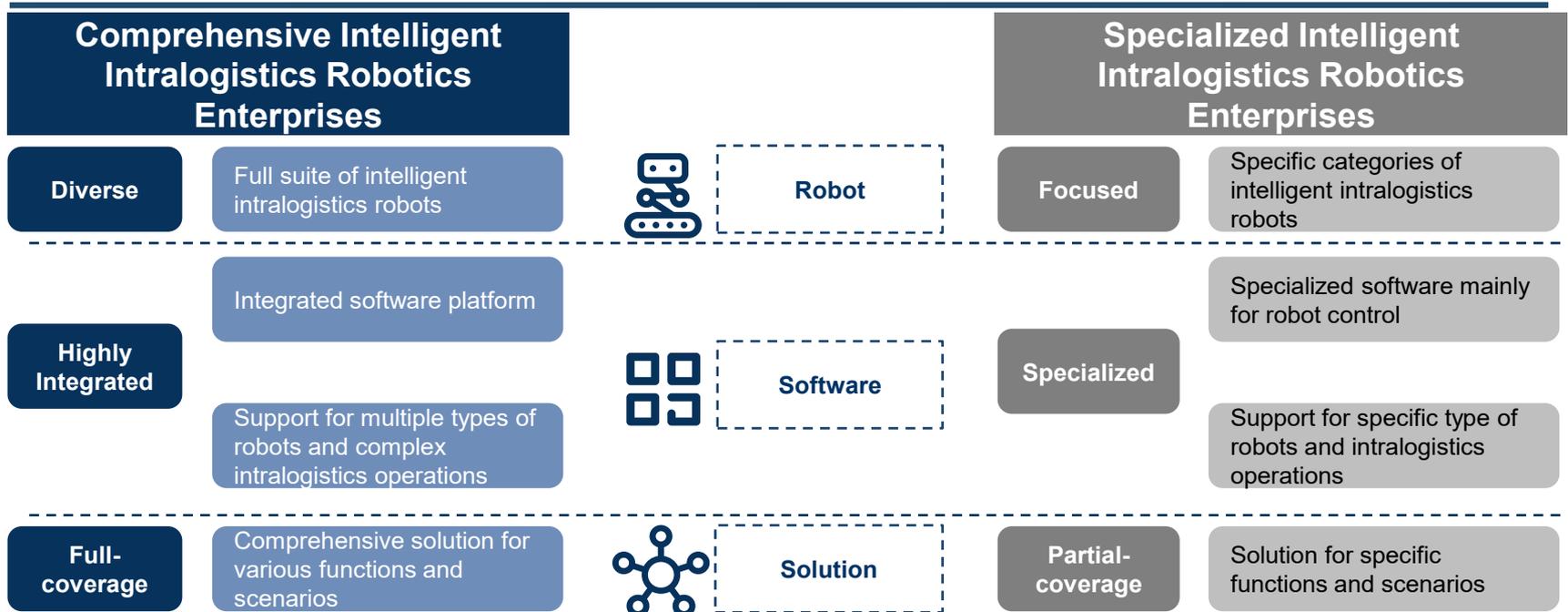
* The Harvey Balls, ranging from full moon to new moon, represent the varying capabilities of different types of intelligent intralogistics robots, from low to high.

Source: Frost & Sullivan

Business Model of Intelligent Intralogistics Robotics Industry

- The enterprises in the intelligent intralogistics robotics industry can be generally divided into two types of business models: specialized intelligent intralogistics robotics enterprises and comprehensive intelligent intralogistics robotics enterprises. Specialized intelligent intralogistics robotics enterprises focus on delivering specific categories of robots and adopt specialization and scale-driven strategies to expand their market share. Comprehensive intelligent intralogistics robotics enterprises enhance their competitiveness by building diversified robotic product portfolios with integrated software and solution capabilities, covering of key intralogistics processes to meet diverse user needs across various scenarios.
- In terms of robotics solution application scenarios, they can be categorized into multi-function comprehensive systems and single-function robot deployment. Multi-function comprehensive systems encompass various types of robots, covering the complete intelligent intralogistics scenarios of storage and retrieval, handling, and sorting. Single-function robot deployment focuses on a specific scenario within storage and retrieval, handling, or sorting, typically utilizing a limited variety of robots. Generally, comprehensive intelligent intralogistics robotics enterprises are capable of providing both multi-function comprehensive systems and single-function robot deployment. In contrast, specialized intelligent intralogistics robotics enterprises primarily offer single-function robot deployment.

Business Model of Intelligent Intralogistics Robotics Industry

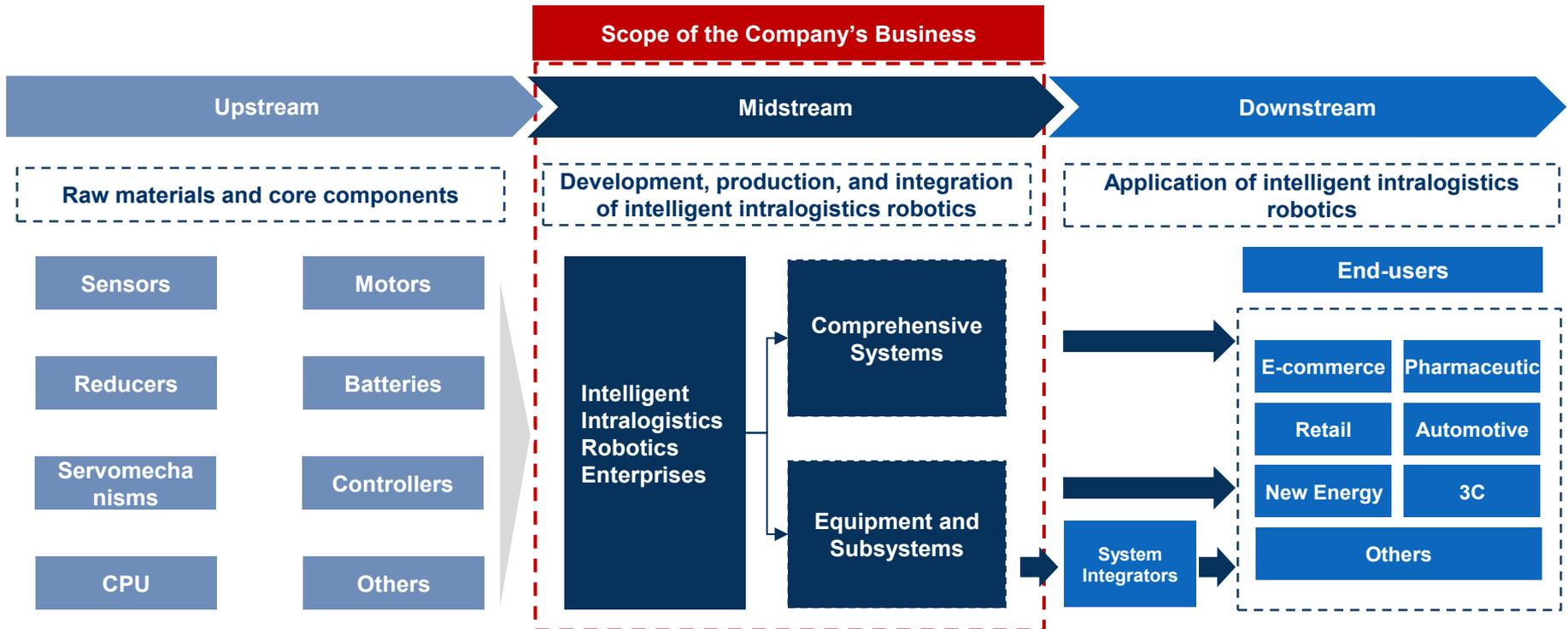


Source: Frost & Sullivan

Value Chain of Intelligent Intralogistics Robotics Industry

- The intelligent intralogistics robotics value chain consists of three segments: upstream component manufacturers supplying essential hardware (sensors, motors, reducers, and other mechanical/electronic parts), midstream solution providers, and downstream deployment. The midstream segment, where the highest value creation occurs, focuses on three core activities: proprietary technology R&D, hardware production, and robotics deployment and system design. The seamless integration of hardware, software, and such design capabilities enables downstream deployment at varying scales, from smaller scale robot deployment to large-scale comprehensive systems. Intelligent intralogistics robotics enterprises can sell products and services directly to customers including integrators, who purchase robots to integrate into their broader warehousing solutions. Enterprise customers who require complete end-to-end intralogistics solutions typically opt for multi-function comprehensive systems.

Value Chain of Intelligent Intralogistics Robotics Industry



Source: Frost & Sullivan

Key Value of the Intelligent Intralogistics Robots in China and Globally

- In today's competitive business environment, traditional intralogistics operations face critical challenges that limit organizational performance and growth. These challenges span across operational efficiency, cost management, system complexity, and adaptability to change. Intelligent intralogistics robots have emerged as a transformative solution, delivering comprehensive improvements across these fundamental pain points while enabling organizations to achieve new levels of operational excellence.

Key Pain Points in Intralogistics and Value Proposition of Intelligent Intralogistics Robots

	Key Pain Points in Intralogistics	Value Proposition of Intelligent Intralogistics Robots
Efficiency Bottlenecks	<ul style="list-style-type: none"> • Storage: relying on manual allocation of storage locations, time-consuming retrieval and lack of real-time inventory tracking • Sorting: depending on manual operations, which are slow and prone to errors • Transport: relying on manual forklifts or hand carts, with limited speed and a higher risk of goods damage 	<ul style="list-style-type: none"> • Storage: utilizing AS/RS and shuttle systems to automatically allocate and manage storage locations • Sorting: employing CSRs to increase sorting speed and accuracy • Transport: allowing for transportation along optimal routes, enhancing efficiency and flexibility while minimizing goods damage risk with various AMR/AGVs and conveying systems
Cost Pressures	<ul style="list-style-type: none"> • Labor Cost: representing labor-intensive, leading to high labor costs • Land Cost: requiring more space, resulting in higher land costs 	<ul style="list-style-type: none"> • Labor Cost: cutting labor costs by employing intelligent intralogistics robots • Land Cost: optimizing space utilization and increasing storage capacity manifold with high-bay warehouse, thereby reducing overall land requirements and costs
Management Complexity	<ul style="list-style-type: none"> • lacking real-time monitoring and traceability, leading to stockouts, overstocking, and reduced efficiency 	<ul style="list-style-type: none"> • offering real-time monitoring and traceability with WMS/WCS, enhancing inventory accuracy and process optimization
Limited Flexibility	<ul style="list-style-type: none"> • relying on fixed processes and manual operations, making it difficult to adapt to dynamic business needs 	<ul style="list-style-type: none"> • boosting efficiency and flexibility through autonomous route planning, dynamic task adjustment, and real-time layout adaptation

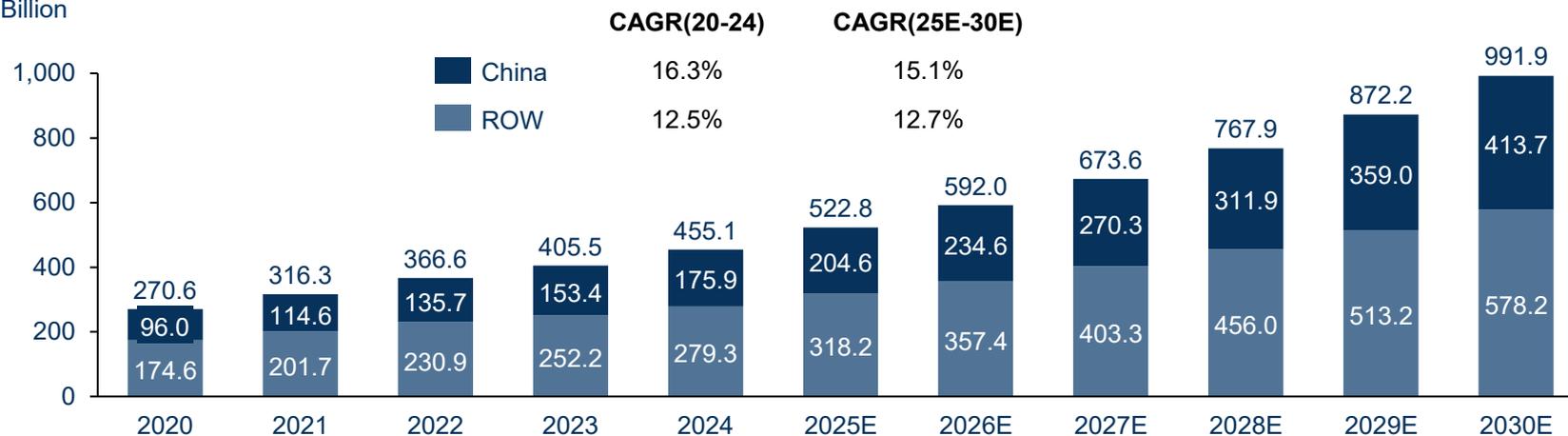
Source: Frost & Sullivan

Market Size of Global and China's Intelligent Intralogistics Industry

- Intelligent intralogistics refers to the modernization of internal logistics operations through the integration of advanced equipment systems, such as shuttles, AMR/AGVs, conveying and sorting robots, combined with software architecture and IoT technologies. This integrated approach enables efficient and precise planning, execution, and control of intralogistics. Compared to non-intelligent intralogistics solutions, intelligent intralogistics solutions offer enhanced flexibility and adaptability, allowing for real-time adjustments and optimization in dynamic environments, and significantly improving operational efficiency and reducing in labor cost. Intelligent intralogistics solutions are estimated to offer 30% to 50% higher operational efficiency and 40% to 60% lower labor costs compared with non-intelligent intralogistics solutions. These advantages have driven steady growth in the penetration rate of the intelligent intralogistics market, which is projected to grow globally from 19.5% in 2024 to 27.0% by 2030. In China, the market penetration rate is projected to grow from 17.7% to 25.0% over the same period.
- Driven by increasing labor costs, rising operational complexity, and growing demand for efficiency, the global intelligent intralogistics market grew steadily from RMB270.6 billion in 2020 to RMB455.1 billion in 2024, and is projected to reach RMB991.9 billion by 2030, representing a CAGR of 13.7% from 2025 to 2030. China is a major player in the intelligent intralogistics market, with its market size increasing from RMB96.0 billion in 2020 to RMB175.9 billion in 2024, representing a CAGR of 16.3%. By 2030, the market is expected to reach RMB413.7 billion, with a projected CAGR of 15.1% from 2025 to 2030.

Market Size of Intelligent Intralogistics Industry, Global and China, 2020-2030E

RMB Billion



China's Intelligent Intralogistics Penetration Rate	14.1%	14.4%	15.6%	16.6%	17.7%	18.7%	19.7%	20.8%	21.8%	23.4%	25.0%
Global Intelligent Intralogistics Penetration Rate	15.6%	15.9%	17.2%	18.3%	19.5%	20.5%	21.6%	22.7%	23.8%	25.4%	27.0%

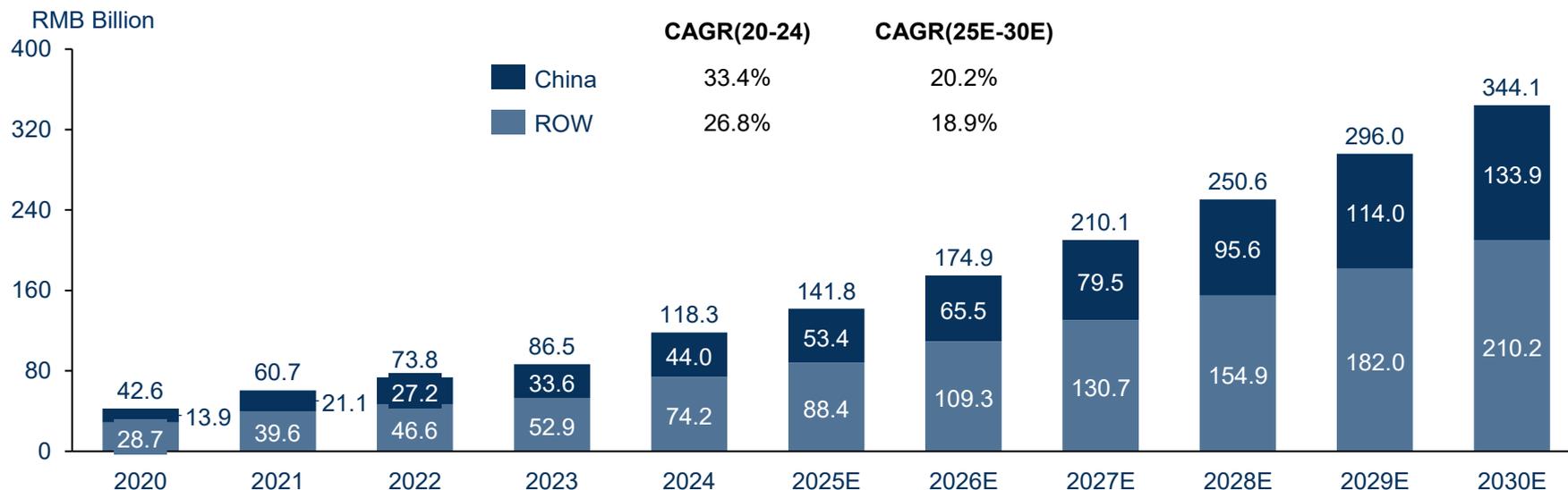
* The penetration rate, calculated by dividing the market size of intelligent intralogistics by that of intralogistics, indicates the prevalence and saturation of intelligent intralogistics systems. China's and the global intelligent intralogistics penetration rates are based on historical intralogistics market sizes.

Source: Frost & Sullivan

Market Size of Global and China's Intelligent Intralogistics Robotics Industry (1/6)

- The global intelligent intralogistics robotics industry is primarily driven by the increasing demand for operational efficiency and automation in logistics operations, as companies seek to enhance productivity, reduce labor costs, and improve accuracy in their supply chains. In this context, the global intelligent intralogistics robotics market grew steadily from RMB42.6 billion in 2020 to RMB118.3 billion in 2024, and is projected to reach RMB344.1 billion by 2030, representing a CAGR of 19.4% from 2025 to 2030. China's role in this market has become increasingly prominent, driven by its massive production base, rapid e-commerce growth, and strong government support for industrial automation. The Chinese market expanded from RMB13.9 billion in 2020 to RMB44.0 billion in 2024, representing 37.2% of the global market. By 2030, China's market is expected to reach RMB133.9 billion, with a CAGR of 20.2% from 2025 to 2030, reflecting the country's accelerating transition toward intelligent production and logistics. Specifically, Southeast Asia and the Middle East are key growth regions in the global intelligent intralogistics robotics industry. In 2024, the market size in Southeast Asia was approximately RMB3.0 billion and is projected to reach RMB11.9 billion by 2030, representing a CAGR of 25.1% from 2025 to 2030. Meanwhile, the Middle East market is expected to grow from RMB5.3 billion in 2024 to RMB19.6 billion in 2030, with a CAGR of 23.7% from 2025 to 2030. This strong growth in both regions is primarily driven by the rapid expansion of e-commerce and the active implementation of advanced manufacturing development plans.

Market Size of Intelligent Intralogistics Robotics Industry, Global and China, 2020-2030E

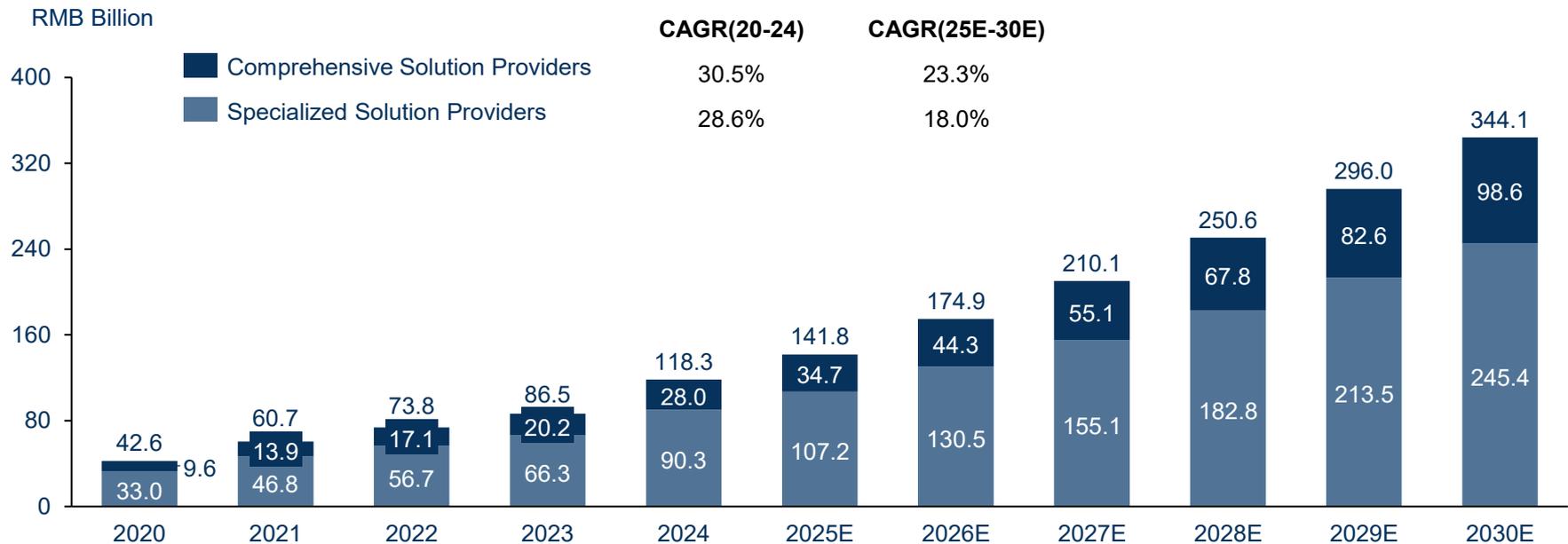


Source: Mobile Robot and AGV/AMR Industry Alliance, Frost & Sullivan

Market Size of Global and China's Intelligent Intralogistics Robotics Industry (2/6)

- The intelligent intralogistics robotics market is primarily composed of two types of companies: comprehensive solution providers and specialized solution providers. Comprehensive solution providers integrate various robotic systems, including storage/retrieval, material transport and conveying, and picking and sorting operations, to offer end-to-end solutions. In contrast, specialized solution providers differentiate themselves through in-depth expertise in specific robotic categories. In 2024, comprehensive solution providers generated revenues of RMB28.0 billion globally, accounting for 23.7% of the total market income. This share is projected to increase steadily over the forecast period, reaching an estimated 28.7% by 2030

Market Size of Intelligent Intralogistics Robotics Industry (by enterprise types), Global, 2020-2030E

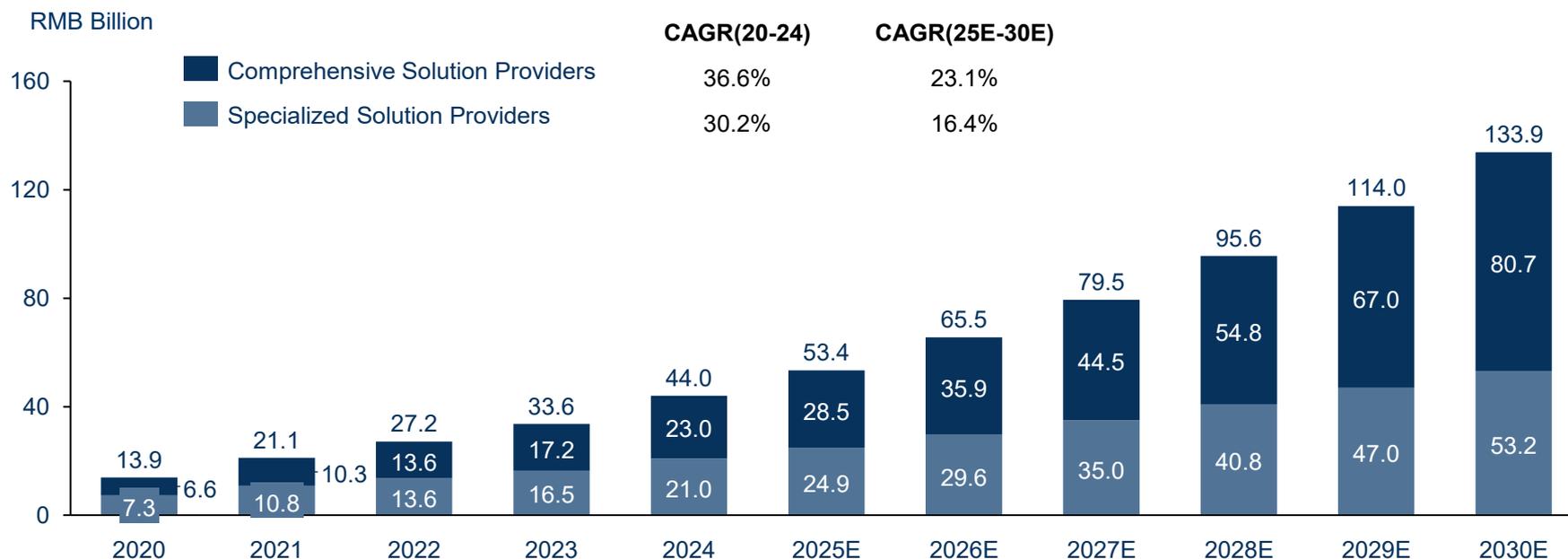


Source: Mobile Robot and AGV/AMR Industry Alliance, Frost & Sullivan

Market Size of Global and China's Intelligent Intralogistics Robotics Industry (3/6)

- In 2024, the revenue of comprehensive solution providers in China reached RMB 23.0 billion, a figure projected to soar to RMB 80.7 billion by 2030, representing a CAGR of 23.3%.

Market Size of Intelligent Intralogistics Robotics Industry (by enterprise types), China, 2020-2030E

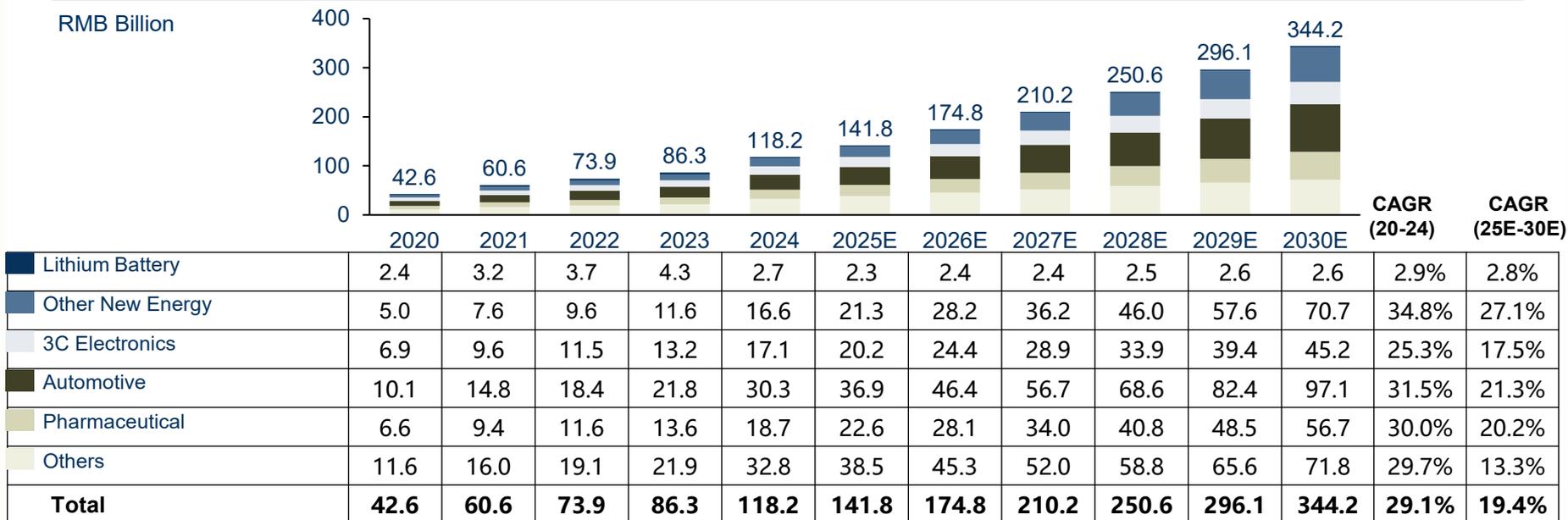


Source: Mobile Robot and AGV/AMR Industry Alliance, Frost & Sullivan

Market Size of Global and China's Intelligent Intralogistics Robotics Industry (4/6)

- The intelligent intralogistics robotics market serves a diverse range of end-user industries, with automotive, new energy and pharmaceutical being the most prominent application areas. Besides, projects in the 3C industry are generally large in scale and served leading industry customers. The growth in the global intelligent intralogistics robotics industry is primarily driven by the increasing demand from downstream applications. For example, in the automotive industry, the shift towards intelligent manufacturing and the need for higher production efficiency and flexibility are driving the adoption of advanced intralogistics solutions. In 2024, intelligent intralogistics robotics providers generated revenues of RMB30.3 billion in automotive manufacturing, RMB19.3 billion in new energy, and RMB18.7 billion in pharmaceutical, accounting for 25.6%, 16.3%, and 15.8% of the total income, respectively. Over the forecast period, the market shares of automotive, new energy and pharmaceutical are projected to continue rising, reaching 28.2%, 21.3% and 16.5% by 2030, respectively. The lithium battery industry is a segment of the new energy sector. Driven by the slowdown in new energy vehicle sales growth and temporary overcapacity, the lithium battery industry has significantly curbed its capacity expansion, which in turn has reduced the demand for intelligent intralogistics robotics in this downstream sector. Other end-user industries, such as chemicals, airports and home appliances industries, represent emerging opportunities and are characterized by different operational models, regulatory environments and customer requirements. The 2024 estimated robotics and automation market size for these sectors amounted to RMB2 billion for household electrical appliance manufacturing, RMB2-3 billion for tobacco and chemical manufacturing, RMB1 billion for airport operations.

Market Size of Intelligent Intralogistics Robotics Industry (by end-user industries), Global, 2020-2030E

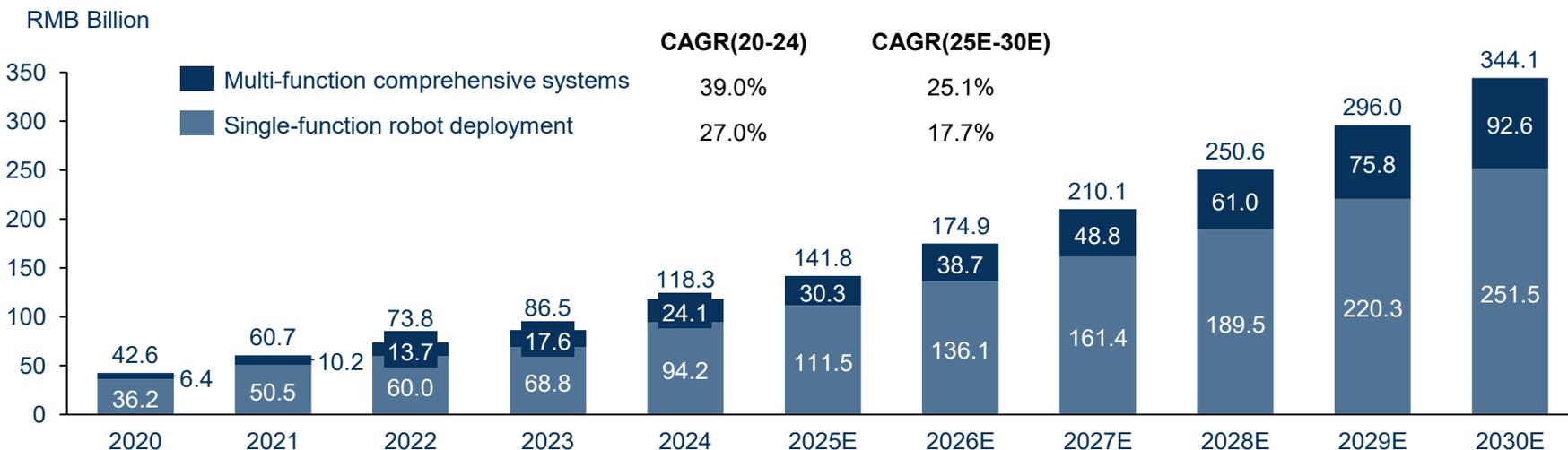


Source: Mobile Robot and AGV/AMR Industry Alliance, Frost & Sullivan

Market Size of Global and China's Intelligent Intralogistics Robotics Industry (5/6)

- Single-function robot deployment involves using self-developed robots for specific tasks like picking or transport. Multi-function comprehensive systems integrate these robots with third-party products to handle multiple operations, such as complete warehouse automation. From 2020 to 2030, the single-function segment is expected to expand from RMB36.2 billion to RMB251.5 billion globally, while the multi-function segment is forecast to grow even more rapidly, from RMB6.4 billion to RMB92.6 billion. From 2020 to 2030, the single-function segment is expected to expand from RMB8.1 billion to RMB58.5 billion in China, while the multi-function segment is forecast to grow even more rapidly, from RMB5.8 billion to RMB75.4 billion, which highlights a strong industry shift towards multi-function comprehensive system solutions.
- Across the industry, single-function robot deployment projects generally achieve higher gross profit margins than multi-function comprehensive systems projects primarily because deployment projects typically involve less customization and integration work, thereby reducing delivery costs. Hence, while the industry is trending towards multi-function comprehensive systems solutions, our strategic shift toward single-function robot deployment projects is commercially reasonable. Our single-function robot deployment solutions provide an alternative path to comprehensive automation by offering customers the flexibility to either integrate with other systems or deploy as standalone solutions based on their specific needs. For instance, our VFR products align with the trend towards high-density automated warehouses. Highly adaptable to storage and retrieval operations within very narrow aisles and high-bay racking systems, they can significantly enhance warehousing efficiency in these specific scenarios. This approach caters to customers who already possess in-house system integration capabilities or seek phased automation upgrades, thereby expanding our addressable customer base and complementing the industry trend toward comprehensive solutions.

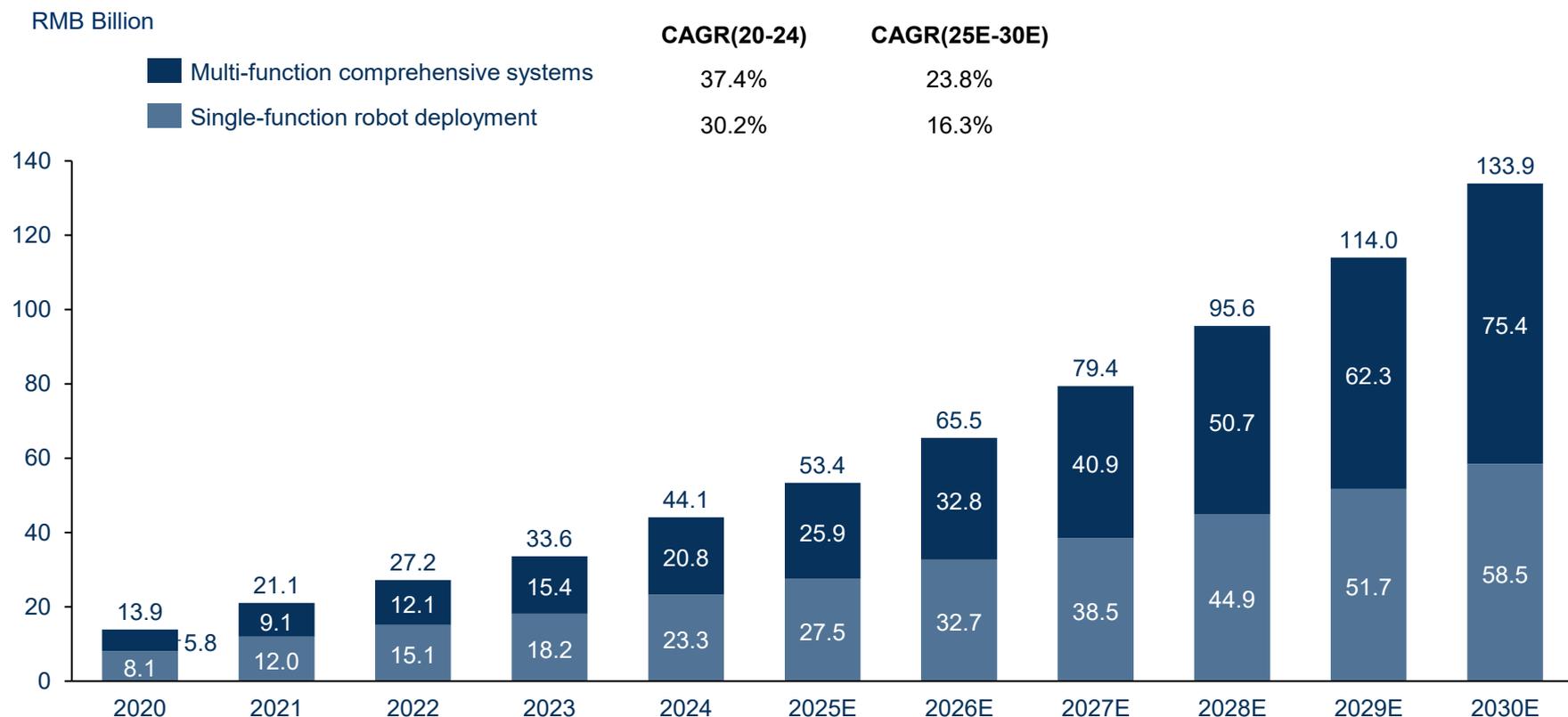
Market Size of Intelligent Intralogistics Robotics Industry (by business models), Global, 2020-2030E



Source: Mobile Robot and AGV/AMR Industry Alliance, Frost & Sullivan

Market Size of Global and China's Intelligent Intralogistics Robotics Industry (6/6)

Market Size of Intelligent Intralogistics Robotics Industry (by business models), China, 2020-2030E

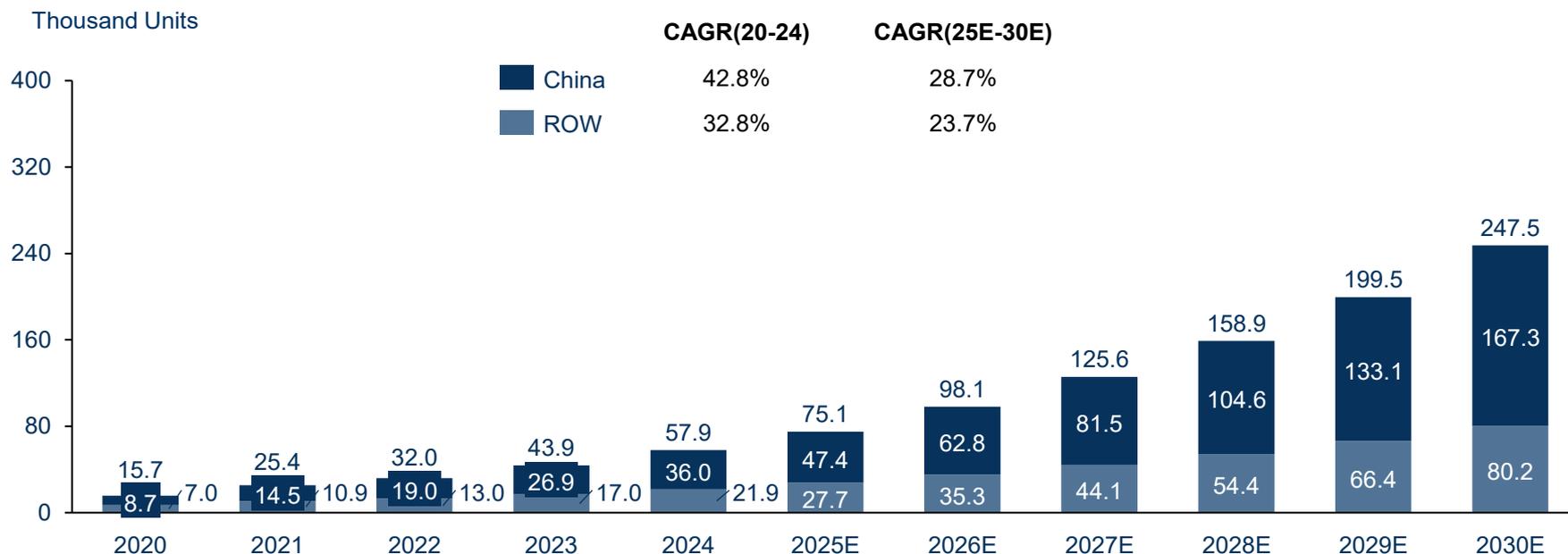


Source: Mobile Robot and AGV/AMR Industry Alliance, Frost & Sullivan

Shipment Volume of Global and China's Shuttle Robots

- Shuttles play a pivotal role in propelling the growth of the intelligent intralogistics market. Global shuttles shipments increased steadily from 15.7 thousand units in 2020 to 57.9 thousand units in 2024, and are projected to reach 75.1 thousand units in 2025 and 247.5 thousand units by 2030, representing a CAGR of 26.9% from 2025 to 2030. This robust growth reflects the intensifying demand for high-density storage and efficient goods-to-person systems. Driven by the growing demand for high-density automated storage systems, shuttles are also accounting for an increasingly significant share of China's intralogistics market. From 2020 to 2024, shipment volume of shuttles in China expanded from 8.7 thousand units to 36.0 thousand units, achieving a CAGR of 42.8%, and are projected to grow to 167.3 thousand units by 2030.

Shuttle Robots Shipment Volume, Global and China, 2020-2030E

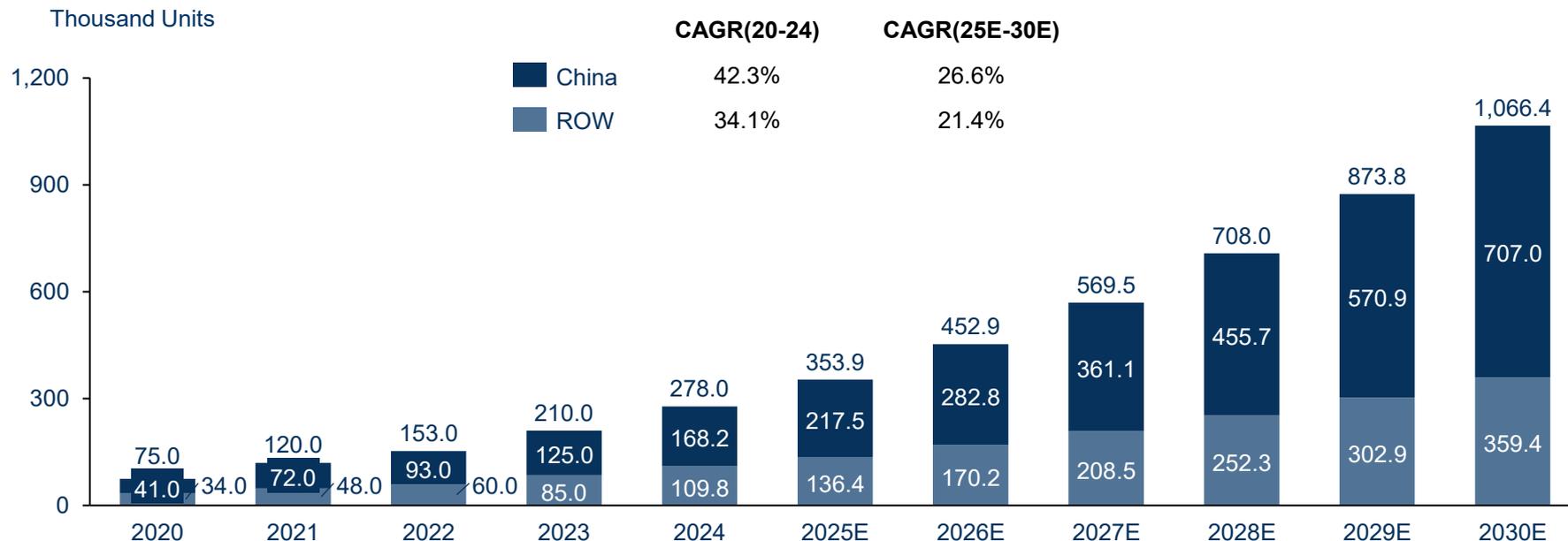


Source: Frost & Sullivan

Shipment Volume of Global and China's AMR/AGV Robots

- AMR/AGVs represent a pivotal growth catalyst in the intelligent intralogistics industry. Shipment volume of AMR/AGVs increased from 75.0 thousand units in 2020 to 278.0 thousand units in 2024, and are expected to reach 1,066.4 thousand units by 2030 globally. Such rapid growth is mainly attributed to the extensive automation adoption across production and logistics industries. In China, shipment volume of AMR/AGVs climbed from 41.0 thousand units in 2020 to 168.2 thousand units in 2024, achieving a notable CAGR of 42.3% during the period. Looking ahead, the demand for AMR/AGVs is anticipated to remain strong. The shipment volume is projected to surpass 707.0 thousand units by 2030. The sustained growth of global and Chinese shipment volume underscores intensifying demand for intelligent intralogistics solutions across various industries, reflecting industry imperatives to enhance efficiency and flexibility in production and distribution operations, highlighting the crucial role of AMR/AGVs in optimizing material transportation and improving operational effectiveness.

AMR/AGV Robots Shipment Volume, Global and China, 2020-2030E

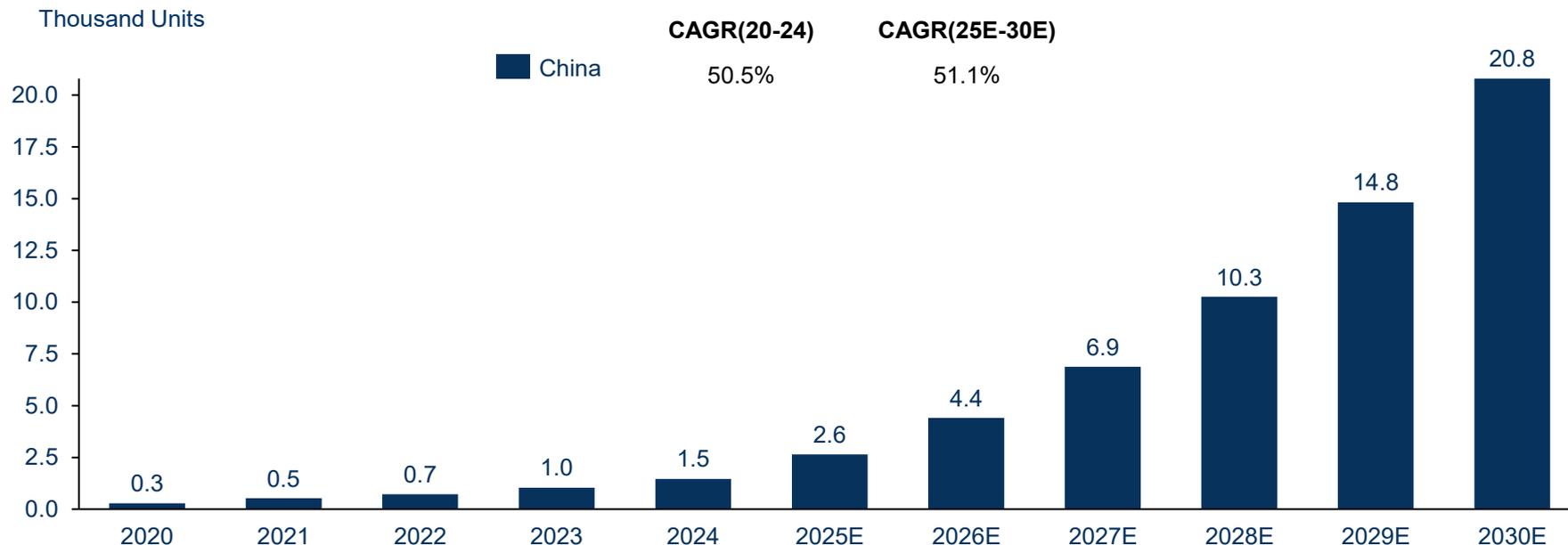


Source: Mobile Robot and AGV/AMR Industry Alliance, Frost & Sullivan

Shipment Volume of Global and China's VNA AMR Robots

- The core features of VNA AMR robots lie in their suitability for high-density warehousing scenarios, with a compact body design and flexible steering capability. They can perform high-level precision operations in narrow aisles and collaborate seamlessly with intelligent scheduling systems, thereby improving warehouse space utilization and overall operational efficiency. From 2020 to 2024, their shipment volume increased consistently, reaching 1.5 thousand units in 2024. This growth is mainly driven by enterprises' escalating demand for warehousing automation and space intensification amid rising land costs, which has accelerated the rapid transformation of narrow-aisle technology from manual operations to unmanned robotics. It is projected that the shipment volume of VNA AMR robots in China will reach 20.8 thousand units by 2030.

VNA AMR Robots Shipment Volume, China, 2020-2030E



Source: Mobile Robot and AGV/AMR Industry Alliance, Frost & Sullivan

Market Drivers of Global and China's Intelligent Intralogistics Robotics Market

Development Trend	Description
Resource Optimization Through High-Density Automation	<ul style="list-style-type: none"> Rising operational costs, land scarcity, and labor shortages have accelerated the shift toward high-density automated storage solutions. Advanced shuttles operating within multi-tier racking configurations achieve ultra-fast storage and retrieval while maximizing space utilization. By enabling automated operations with minimal spatial footprint, these solutions address mounting cost pressures while enhancing operational efficiency. Intelligent coordination systems further optimize storage configurations and retrieval times, making these solutions valuable for space-constrained facilities requiring precision logistics.
Technology Breakthrough and AI Integration	<ul style="list-style-type: none"> Advances in core robotics technology such as sensors and SLAM, as well as the adoption of AI tools in robotics development and deployment, have dramatically improved the ability of intelligent intralogistics robots in navigation, path planning, and autonomous decision-making. The emergence of embodied AI has transformed how machines interact with their physical environment and human operators, while advanced multi-robot systems have revolutionized operational flexibility in complex warehouse environments. This enhanced adaptability transforms robots from rigid automation tools into adaptive logistics partners capable of handling diverse tasks in complex and unpredictable environments, driving their deployment across a wide range of applications. The rapid development of robotic technology and AI has significantly propelled the progress of the intelligent intralogistics robotics industry. For instance, in terms of perception technology, breakthroughs in vision technology have enabled robots to achieve high-precision positioning and cargo recognition in complex environments, greatly enhancing operational efficiency and accuracy. In warehouse operations, AI driven scheduling algorithms optimize the deployment of AMRs/AGVs, thereby reducing idle time and increasing operational throughput by approximately 20% to 40%. In addition, AI-based predictive maintenance models enable early detection of potential equipment failures, minimizing downtime and reduce maintenance costs by up to 30%.
Demand for Expertise from Rising Operational Complexity	<ul style="list-style-type: none"> The increasing sophistication of logistics operations is creating demand for providers with deep understanding of logistics scenarios and industry-specific requirements. Growing operational complexity and workflow optimization pressures require intelligent intralogistics providers to deliver effective solutions through strategic robot deployments or comprehensive systems that address specific challenges. As logistics operations continue to evolve in complexity, the combination of technical capabilities and strong operational understanding will become increasingly crucial for continued market success
Favorable Government Policies	<ul style="list-style-type: none"> Governments worldwide are implementing policies to upgrade production, promote intelligent technologies, and develop AI infrastructure, with intelligent logistics robotics as a prioritized sector. China has introduced multiple supportive measures, including the 2023 "Robot+" Application Action Plan (《“机器人+” 应用行动方案》) jointly issued by authorities including MIIT, which mandates robot-centric intelligent logistics systems to digitalize commercial logistics.

Source: Frost & Sullivan

Development Trends of Global and China's Intelligent Intralogistics Robotics Market

Development Trend	Description
Business Model Transformation: From Standalone Products to Comprehensive Systems	<ul style="list-style-type: none"> Driven by deeper industry insights and technological advancements, intralogistics robotics providers are evolving from offering standalone robots to delivering comprehensive systems encompassing hardware, software and field services. These integrated systems leverage data acquisition and analytics to enable operational optimization and real-time coordination. Such holistic approaches not only maximize the value of intelligent robotics and enable innovative business models, but also address the escalating demands of modern logistics — enhancing operational efficiency while delivering superior customer value.
High-Density Automated Storage and Next-Generation Shuttle Systems	<ul style="list-style-type: none"> The future of intralogistics lies in high-density automated shuttle storage systems. These advanced robotic shuttles operate within multi-tier racking systems, achieving ultra-fast storage/retrieval with minimal spatial footprint. Powered by AI-driven coordination systems, they dynamically optimize storage configurations, reduce retrieval times, and seamlessly integrate with AS/RS and conveyor networks. This evolution promises dramatic improvements in storage density and operational cost reduction, delivering precision logistics support for e-commerce and automotive sectors.
Modular Technology as the New Standard	<ul style="list-style-type: none"> Modular design has become mainstream in intralogistics robotics R&D, significantly shortening development cycles and reducing production costs. This approach endows robotic systems with multifunctionality, scalability, and reconfigurability while enhancing fault tolerance. The proven advantages of modular technology — efficiency, precision, and cost-effectiveness — are now fundamental to intelligent logistics robotics development.
Intelligent Evolution from Intralogistics to End-to-End Supply Chain Optimization	<ul style="list-style-type: none"> Major enterprises are accelerating digital transformation through AI development initiatives and intelligent manufacturing upgrades. This technological integration is expanding beyond intralogistics to enable full supply chain optimization, addressing challenges from warehouse management to last-mile delivery for enterprises of all scales. Growing adoption bridges human-machine collaboration gaps, solves complex logistics puzzles, and reinvents business models for the digital era, ultimately delivering faster and more reliable services to customers.
Accelerating Globalization of Chinese Intralogistics Robotics Enterprises	<ul style="list-style-type: none"> Chinese intralogistics robotics enterprises are actively expanding into international markets through two primary approaches. First, they are following the global expansion of Chinese enterprises in sectors such as e-commerce and manufacturing. By providing intelligent intralogistics solutions to these companies as they establish operations abroad, robotics firms can quickly gain overseas market presence and application scenarios. Second, they are forming strategic partnerships with leading global system integrators. These collaborations help Chinese robotics enterprises embed their technologies into large-scale intralogistics projects, enhance their brand visibility, and improve their adaptability to local markets. Through these two pathways, Chinese intralogistics robotics enterprises are not only expanding their global footprint, but also accelerating their technological iteration and ecosystem development by tapping into diverse application environments and customer needs worldwide

Source: Frost & Sullivan

Cost Analysis of Key Components for Intelligent Intralogistics Robots (1/2)

- The multi-directional shuttles are typically equipped with several key components, including a multi-directional drive system, track-guided mechanisms, onboard controllers, power supply systems, wireless communication modules, and positioning sensors. It is commonly used in conjunction with high-speed lifts to enable multi-level operations. The AMR/AGVs usually include core modules such as a mobile chassis with differential or omnidirectional wheels, SLAM or vision-based navigation systems, a central control unit, obstacle avoidance sensors (e.g., LiDAR, cameras), and wireless communication systems. CSRs are built around servo motors, mechanical actuators, and manipulator control systems, often integrated with WMS or MES platforms.
- The pricing of key components for these robots has generally shown a declining pattern over recent years due to economies of scale, technological advancements in components like sensors and batteries, and increasing domestic production of core modules. The falling cost of core components and increasing market competition are gradually making intelligent intralogistics robots more accessible to a wider range of industries.

Source: Frost & Sullivan

Cost Analysis of Key Components for Intelligent Intralogistics Robots (2/2)

- The multi-directional shuttles are typically equipped with several key components, including a multi-directional drive system, track-guided mechanisms, onboard controllers, power supply systems, wireless communication modules, and positioning sensors. It is commonly used in conjunction with high-speed lifts to enable multi-level operations. The AMR/AGVs usually include core modules such as a mobile chassis with differential or omnidirectional wheels, SLAM or vision-based navigation systems, a central control unit, obstacle avoidance sensors (e.g., LiDAR, cameras), and wireless communication systems. CSRs are built around servo motors, mechanical actuators, and manipulator control systems, often integrated with WMS platforms.
- The pricing of key components for these robots has generally shown a declining pattern over recent years due to economies of scale, technological advancements in components like sensors and batteries, and increasing domestic production of core modules. The falling cost of core components (e.g., LiDAR prices are projected to drop by 50%–60% to 200–500 RMB by 2030, while sensors and ICs see 30%–50% declines due to scale and technology gains) and increasing market competition are gradually making intelligent intralogistics robots more accessible to a wider range of industries.

Cost Analysis of Core Components of Intelligent Intralogistics Robots, Global, 2024

Component	Core Component Price Range 2020-2024 (RMB per unit)	Key Factors Influencing Prices
Control Boards	300-1000	•Tech iteration, domestic substitution, and market competition shape prices, with consumer-grade facing price wars and industrial-grade tied to robot/AIoT demand.
Sensors	0.5-20,000	•Price varies by type/function; •Mid-low sensors see domestic substitution-driven drops, while high-end ones rely on imports, vulnerable to overseas factors.
IC	0.1-120	•Costs hinge on process/function; •Domestic mid-low ICs lower prices, but high-end ones face overseas tech blocks, causing swings.
LiDars	400-1,000	•Tech route (solid-state vs mechanical) and mass production impact prices; • Demand growth and competition drive cost changes.

Source: Frost & Sullivan

2. Analysis of the Competitive Landscape in the Global and China's Intelligent Intralogistics Robotics Industry

Competitive Landscape in the Global and China's Intelligent Intralogistics Robotics Industry

- The global intelligent intralogistics robotics market remains relatively fragmented, characterized by both comprehensive system providers and specialized players. Comprehensive intelligent intralogistics robotics companies offer end-to-end systems by integrating multiple robotic systems across storage/retrieval, material transport and conveying, as well as picking and sorting operations, while specialized players achieve market differentiation through deep expertise in specific robotic categories. The competitive landscape also encompasses companies with non-core but nevertheless commercially significant intelligent intralogistics robotics operations. The market leadership of intelligent intralogistics robotics companies is attributed to their extensive portfolio of patents, which enables them to deliver comprehensive automation systems across diverse logistic applications.
- It is estimated that the market comprises over 50 suppliers of AMRs, fewer than 50 suppliers of CSRs, and fewer than 50 suppliers of shuttle.

Competitive Landscape of Global and China's Intelligent Intralogistics Robotics Industry



Note: The players listed above are representatives instead of all players in the market

Source: Frost & Sullivan

Ranking of Global and China's Intelligent Intralogistics Robotics Industry (1/3)

Ranking of Comprehensive Intelligent Intralogistics Robotics Enterprises, China, 2024

Rank	Company	Revenue (RMB Billion)	Market Share (%)
1	Company A	2.0	4.6%
2	Company B	1.1	2.5%
3	Company C	0.9	1.9%
4	Company D	0.8	1.8%
5	The Company	0.7	1.6%
	Others	38.5	87.4%
	Total	44.0	100.0%

- In China's market, where the top five comprehensive intelligent intralogistics robotics companies collectively hold 12.6% market share, our Company has established itself as a significant player, ranking within the top five market players with a 1.6% market share, distinguished by our proprietary robotics products and systems and proven track record in implementing advanced automation solutions for industry leaders.
- Apart from the five leading companies listed below, there are estimated to be around one hundred other comprehensive intelligent intralogistics robotics companies in the market.

Source: Company reports, Frost & Sullivan

Ranking of Global and China's Intelligent Intralogistics Robotics Industry (2/3)

Ranking of VNA AMR Shipment Volume, China, 2024

Rank	Company	Shipment (Thousand Unit)	Market Share (%)
1	The Company	0.3	19.3%
2	Company E	0.3	18.9%
3	Company F	0.2	13.7%
4	Company D	0.2	11.4%
5	Company G	0.1	10.1%
	Others	0.4	26.6%
	Total	1.5	100.0%

- The total shipment of VNAAMR in China was approximately 1.5 thousand units and is expected to further increase to 20.8 thousand units in 2030. In terms of VNA AMR shipment volume in 2024, the Company ranked first in China. Apart from the five leading companies listed below, it is estimated that there are fewer than 50 other VNA AMR suppliers in the market.

Source: Company reports, Frost & Sullivan

Comparative Analysis of Products Offered by the Company and Peers

Comparative Analysis of Products Offered by the Company and Peers

VNA AMRs	The Company	The Peers
Maximum lifting height (m)	~9	~3 - 4
Maximum handling weight (kg)	~1,500	~1,500
Minimum aisle width (m)	~1.5	~1.5 - 2
ASP (RMB)	150,000 - 1,400,000	n/a

Four-way Shuttles	The Company	The Peers
Maximum moving speed (m/s)	~5	~1 - 3
Positioning accuracy (mm)	±2	±2
Direction-turning time (s)	~1.5	~1 - 3
ASP (RMB)	100,000 - 200,000	n/a

Two-way Shuttle	The Group	The Peers
Maximum moving speed (m/s)	~5	~5
Positioning accuracy (mm)	±2	±2 - 3
Maximum handling weight (kg)	~50	~50
ASP (RMB)	60,000 - 110,000	50,000 - 100,000

CSR	The Group	The Peers
Maximum moving speed (m/min)	~60	~40
Conveyor track (mm)	+1	±5
Maximum handling weight (t)	~3	~1 - 3
ASP (RMB)	4,500 - 200,000	n/a

- The following representative indicators are selected for comparison with its peers. Among these indicators, the comparative analysis of ASPs between the Company and its peers is not feasible, as accurate ASP data of peers is not available. Besides, given the extensive diversity of CSR products and the fact that the inclusion of robotic arms also impacts pricing, it is not feasible to calculate the ASPs.

Source: Frost & Sullivan

Entry Barriers of Global and China's Intelligent Intralogistics Robotics Industry

Entry Barriers	Description
First-mover Portfolio Advantages	<ul style="list-style-type: none"> In intelligent intralogistics, comprehensive product portfolios and established deployment capabilities present formidable barriers to entry. The capital-intensive nature of the industry demands substantial, sustained investment across R&D, testing, production, and service infrastructure. New entrants face significant hurdles in product development and iteration, supply chain stability, and after-sales support due to the industry's extended payment cycles and intensive cash flow requirements. Established players have built robust hardware-software foundations through years of sustained investment, creating a widening capability gap that compounds with each successful deployment.
Advanced Technical Capabilities	<ul style="list-style-type: none"> Market leaders possess sophisticated hardware-software integration expertise spanning navigation systems, SLAM algorithms, multi-robot coordination, and WMS/MES platform compatibility. Their mature development ecosystems, optimized through years of real-world deployment, enable continuous innovation in AI and edge computing applications. The complexity of these technical systems, refined through extensive field testing, presents formidable barriers to entry.
Strong Customer Relationships Through Full-life-cycle Services	<ul style="list-style-type: none"> The mission-critical nature of intralogistics systems creates strong customer lock-in through deep operational integration. Established players maintain these relationships through comprehensive after-sales support, system optimization, and continuous upgrades. New entrants struggle to build comparable service infrastructure and technical support capabilities needed for long-term customer retention.
Deep Industry Understanding and Market Coverage	<ul style="list-style-type: none"> Effective robotics systems require intimate knowledge of sector-specific workflows, compliance requirements, and operational constraints. Leading providers have developed specialized expertise across manufacturing, e-commerce, automotive, and other key verticals. This deep industry knowledge creates significant barriers for newcomers attempting to penetrate core market segments.
Specialized Talent and Organizational Expertise	<ul style="list-style-type: none"> The industry requires rare combinations of skills across robotics engineering, algorithm development, industrial design, and domain-specific knowledge. Established players have built deep talent pools and accumulated organizational knowledge in critical areas such as system design, deployment methodology, and post-installation support. This human capital advantage significantly impacts successful market entry and sustained growth.

Source: Frost & Sullivan

Supplemental Statements (1/2)

- The Company is one of the few companies globally with full-stack robotics capabilities and a comprehensive portfolio of self-developed robots that cover all core intralogistics functions across all height and payload specifications from multi-story warehouses to high-bay facilities, and from tote to pallet handling.
- The Company was the first intelligent intralogistics company to develop and achieve mass production of four-way MSR and VFRs.
- The Company is the first company in China to independently develop and commercialize four-way tote MSRs.
- The MSRs provided by the Company, operate at a maximum speed of 5.0 m/s, with an acceleration of up to 1.5 m/s², which represents best-in-class performance within the global four-way tote MSR industry.
- As part of the Company's sales network, the Company engages integration partners, who purchase our robots to integrate into their broader warehousing solutions, which is in line with market practice.
- It is common in the intelligent intralogistics robotics industry for customers and suppliers to overlap, given the diverse, dynamic and sometimes complementary nature of their business interactions.
- China represents the most complex and diverse logistics landscape globally, creating particularly strong demand for robotization and intelligent automation.
- The profitability of companies in the intelligent intralogistics robotics industry depends on various factors, including their business strategies, the downstream industries they serve, the intensity of competition, and broader macroeconomic conditions. Companies in the intelligent intralogistics robotics industry generally require approximately three to five years to achieve breakeven after commencing revenue generation. It is worth noting that a number of companies in the industry remain unprofitable beyond such period as they continue to invest in R&D, product innovation, and market expansion.
- While addressing more complex automation scenarios, the Japanese and South Korean markets have higher margins, where closed-bottom are prevalent and warehouse specifications demand greater lifting heights. These markets' specialized technical requirements create higher barriers to entry, enabling premium pricing.
- The Company leverages strong market position in four-way MSR and VFR products, where the Company maintain significant market share and customer recognition.
- It is common in the intelligent intralogistics robotics industry for companies to take a proactive approach to collections, with relevant departments regularly monitoring the receivables and engaging with customers through multiple channels to remind them of upcoming payments. This settlement pattern reflects the focus on maintaining long-term client relationships and managing large-order fulfillment.
- In Japan and South Korea, the levels of industrial automation and warehousing efficiency are among the highest in Asia. These markets have advanced manufacturing bases, high demand for automation, and well-developed logistics infrastructure. The types of pallets that are commonly used in Japan and South Korea are different from the ones used elsewhere. Japanese and South Korean facilities mainly use pallets with a flat or closed base, which require a different lifting system. Japanese customers generally prefer working with suppliers that have a local presence and direct after-sales service.

Source: Frost & Sullivan

Supplemental Statements (2/2)

- Established in 2002 and headquartered in Beijing, China, Company A is mainly engaged in the research and development, design, manufacturing and integration business of the intelligent logistics system with automated warehouse as the core business. Based on independently developed intelligent logistics equipment and software control system, Company A provides customers with one-stop service from planning and design, equipment customization, software control system development installation and commissioning, system integration to customer training, is a provider of intelligent logistics system solution, and listed on Shanghai Stock Exchange in 2024.
- Established in 1993 and headquartered in Jinan, China, Company B is a global leader in end-to-end automated warehouse logistics solutions, has the ability to integrate consulting and planning, software development, equipment manufacturing, system integration, and automated operation and maintenance. Company B has successfully deployed solutions for global leaders across various industries, and listed on Shanghai Stock Exchange in 2020.
- Established in 1998 and headquartered in Kunming, China, Company C has served industries such as tobacco, alcohol, pharmaceuticals, express delivery and e-commerce, military and defense, automotive, home appliances, and 3C, and has successfully implemented thousands of projects in the fields of intelligent logistics and intelligent manufacturing, and is a leading enterprise in China's automated logistics system industry. Company C is listed on Shenzhen Stock Exchange in 2022.
- Established in 2007 and headquartered in Hefei, China, Company D is a leading integrated solution provider in the industry for intelligent factory system design and construction, focusing on core businesses such as green intelligent logistics robots, intelligent factory system design and construction, and digital twin system platforms. Company D has created multiple benchmark projects and national pilot projects in various industries such as metallurgical casting, petrochemical, new energy, pharmaceutical cold chain, food furniture, and listed on Shanghai Stock Exchange in 2022.
- Established in 2018 and headquartered in Hefei, China, Company E is an advanced domestic logistics robot and smart logistics system service provider, specializes in the development and application of industrial informatization and intelligent manufacturing systems, as well as the R&D, manufacturing, and integration of intelligent material handling and warehousing solutions.
- Established in 2005 and headquartered in Hefei, China, Company F is an enterprise focused on the research and development and production of material transporting equipment with 15 years of industry experience. Company F manufactures electric counterbalance forklift trucks, electric reach truck, electric reach stacker, electric power pallet jack trucks, electric lift stacker, and electric tuggers.
- Established in 2016 and headquartered in Hangzhou, China, Company G is a global product and solution provider specializing in machine vision and mobile robots, focuses on IIoT, smart logistics and smart manufacturing, and strives to contribute to the sustainable development of society, economy and environment.

Source: Frost & Sullivan

Thank You

Partner with you on the Road to Growth



Your Strategic Growth Partner