*Confidential*

# Hospitality Robotic-based AI Agent Market

*Industry Report*



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**For and on behalf of**
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# Overview of China's Hospitality Robotic-based AI Agent Market
## Introduction and Categorization of AI Agent (1/3)

**Definition**

•AI Agent: It is an artificial intelligence that possesses autonomous perception, memory, reasoning analysis, decision-making, and action execution capabilities. It can directly provide end-to-end, continuous iterative solutions tailored to specific tasks.

•Its core advantages are:

- Autonomy: AI agents are designed to function autonomously in accordance with assigned tasks, eliminating the necessity for continuous and comprehensive human intervention throughout the process;
- End-to-End: AI Agents can deliver complete task solutions that across multiple steps and scenarios;
- Learning and Iteration: AI agents can continuously optimize their strategies through data-driven insights and experiential learning;

•AI agents can be categorized into two main types: **AI agents with physical robotic forms** and **AI agents without physical robotic forms.**

•**AI agent with physical robotic form** is an AI system integrated with a physical body or robotic form, enabling it to interact with the real world in a more direct and physical manner. Robotic-based AI agent is a type of AI agent with physical robotic form, directly responding to the environment through physical body, which utilize sensors to perceive their surroundings and actuators to move and manipulate objects, combining the power of AI with physical embodiment to perform tasks. These agents are equipped with advanced machine learning algorithms that enable them to learn from their interactions and improve their performance over time. Additionally, their AI systems can process vast amounts of data in real-time. allowing them to make quick and informed decisions in dynamic environments.

•**AI agent without physical robotic form** refers to an intelligent system that operates without relying on a physical entity or embodied interaction. AI agents without physical robotic forms can access the existing IT system which they operated, to perform specific operations such as data analysis, report generation, and interact with AI agent with physical robotic forms. With autonomous action and task agent capabilities, they not only understand instructions, but also autonomously plan task steps, call tool resources, monitor the execution process, and ultimately complete the end-to-end task closed loop





*Source: Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Introduction and Categorization of AI Agent (2/3)

AI agents can be categorized **by functionality** into **hospitality AI agent** and **other function AI agent**. Hospitality AI agents are designed to achieve hospitality-oriented goals, which prioritize human-centric interactions, service optimization, and collaborative workflows. These agents are deployed not only in traditional hospitality sectors like hotels and restaurants, but also in non-traditional commercial environments such as factories and healthcare, where they facilitate human-agent interaction. While AI agent with other functionalities mainly appears in education, finance, public transportation, etc.

**Scenarios of AI Agents Under Different Functions**

| | | |
|---|---|---|
| Hospitality Function | Hotels | ▪ AI agents offer comprehensive services throughout a guest's hotel stay, elevating the overall guest experience. At the check-in stage, they automate the process, leveraging facial recognition technology to ensure a streamlined and secure access procedure. During the guest's stay, AI agents undertake room service deliveries through autonomous navigation, manage front desk calls proficiently, and maintain a pristine environment. They further function as knowledgeable guides, acquainting guests with the hotel's amenities. At the check-out stage, they facilitate the check-out process and collect feedback with a view to enhancing future services, ensuring a seamless and hassle-free experience from the moment of arrival to the point of departure. |
| | Healthcare | ▪ AI agents play a pivotal role in augmenting operating efficiency and bolstering patient care. They execute tasks like the autonomous delivery of medical supplies and equipment, ensuring timely and precise distribution. AI agents are also tasked with routine cleaning responsibilities, contributing to maintaining a hygienic environment. Moreover, AI agents seamlessly integrate with healthcare systems to streamline administrative processes such as scheduling, optimizing the overall healthcare operational workflow. |
| | Restaurants | ▪ In restaurants, AI agents are deployed with sophisticated order routing algorithms that are intricately integrated with delivery robots and self-service kiosks, thereby streamlining and effectively managing workflows. During peak business hours, AI agents dynamically assess and prioritize takeout orders, and simultaneously dispatch cleaning robots to sanitize tables in a timely manner, ensuring a hygienic dining environment. AI agents also synchronize the operations of kitchen robots for optimized meal preparation. Through these coordinated actions, AI agents significantly reduce customer wait times, enhancing overall service efficiency and customer satisfaction. |
| | Factories | ▪ In factory settings, AI agents leverage advanced multi-agent scheduling software in conjunction with an array of robots, including autonomous mobile robots (AMRs), to fine-tune material handling, inventory tracking and assembly line coordination. Moreover, hospitality AI agents in factories can meet the needs of more complex service areas besides moving goods between production lines. Based on the core AI technology platform, AI agents are able to interact with end-users and make deliveries between people and people and between people and goods, providing more human-centric services. |

*Source: Public Information Collection, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Introduction and Categorization of AI Agent (3/3)

**Scenarios of AI Agents Under Different Functions**

**Other Functions**

- In financial services, AI agents support fraud detection, compliance monitoring, and customer advisory functions. The market size of the global AI agent market in financial services in terms of revenue was RMB5.6 billion in 2024 (representing approximately 5.9% of the market size of the global AI agent market in terms of revenue in 2024), and is expected to reach RMB46.8 billion in 2029 with a CAGR of 52.9%.
- In retail and e-commerce, AI agents power product recommendations, manage supply chains, and handle customer service at scale. The market size of the global AI agent market in retail and e-commerce sector in terms of revenue was RMB6.9 billion in 2024 (representing approximately 7.3% of the market size of the global AI agent market in terms of revenue in 2024), and is expected to reach RMB53.5 billion in 2029 with a CAGR of 50.6%.
- In education scenario, AI agents are reshaping how knowledge is delivered, assessed, and tailored to individual needs. The market size of the global AI agent market in education sector in terms of revenue was RMB8.4 billion in 2024 (representing approximately 8.9% of the market size of the global AI agent market in terms of revenue in 2024), and is expected to reach RMB55.7 billion in 2029 with a CAGR of 46.0%
- The breadth of these applications highlights that AI agents are not confined to a single domain but are evolving as critical infrastructure for modern business.





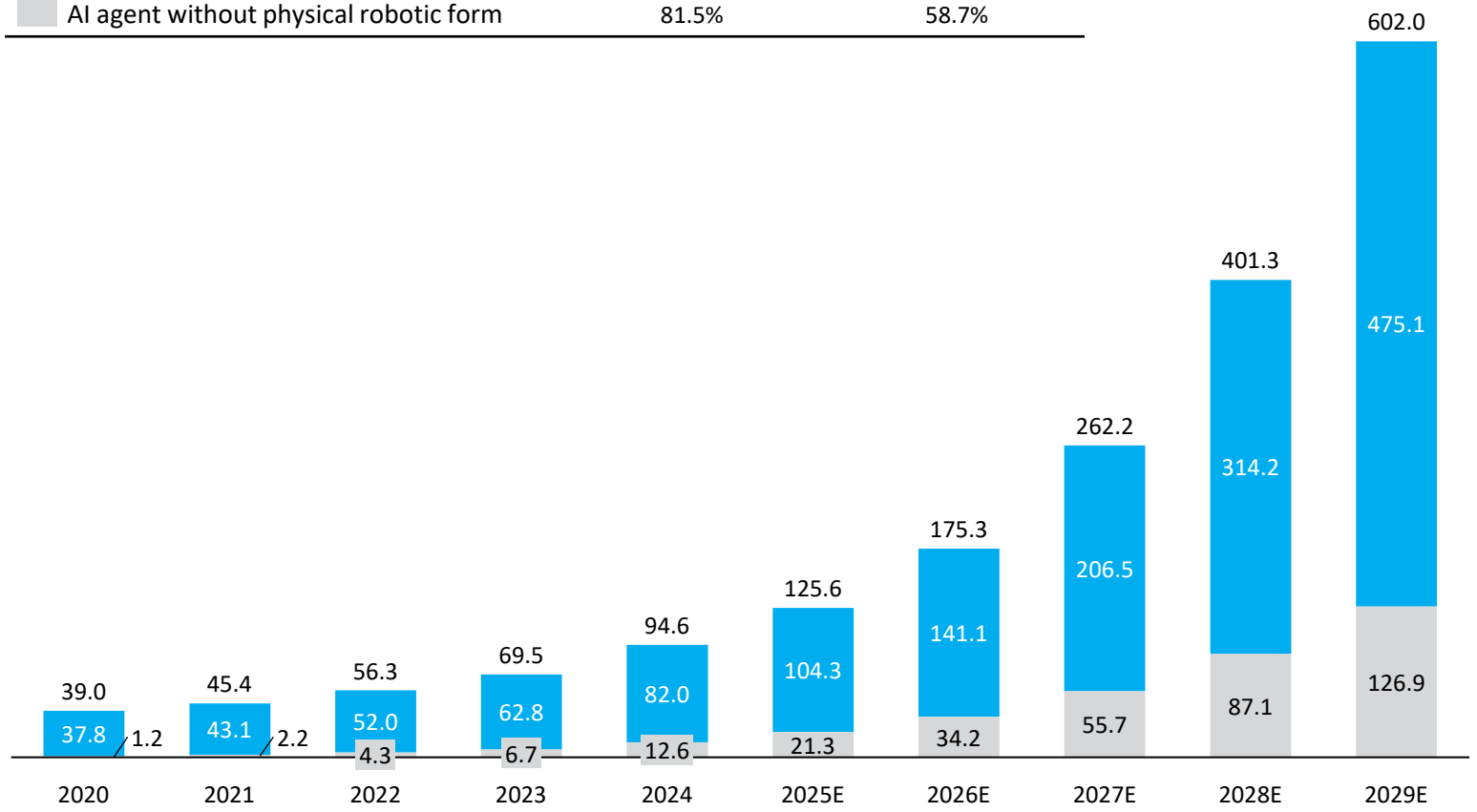
*Source: Public Information Collection, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Market Size of Global AI Agent Market, by Physical Robotic Form

## Market Size of Global AI Agent Market, by physical robotic form

RMB Billion, 2020-2029E

| CAGR | 2020-2024 | 2024-2029E |
|---|---|---|
| **Total** | 24.8% | 44.8% |
| AI agent with physical robotic form | 21.3% | 42.1% |
| AI agent without physical robotic form | 81.5% | 58.7% |




### *Key Takeaways*

- The market size of the global AI agent market in terms of revenue increased from RMB39.0 billion in 2020 to RMB94.6 billion in 2024, representing a CAGR of 24.8%, and is expected to reach RMB602.0 billion in 2029 with an accelerated CAGR of 44.8% from 2024 to 2029, indicating a significant upward trend in the adoption and application of AI agents worldwide. Specifically, the global market of AI agent with physical robotic form in terms of revenue grew from RMB37.8 billion in 2020 to RMB82.0 billion in 2024 with a CAGR of 21.3%, and is expected to reach RMB475.1 billion in 2029, with a CAGR of 42.1% from 2024 to 2029. On the other hand, the global market of AI agent without physical robotic form in terms of revenue is expected to see a more pronounced growth, increasing from RMB1.2 billion in 2020 to RMB12.6 billion in 2024 with a CAGR of 81.5%, and expected to reach RMB126.9 billion in 2029 with a CAGR of 58.7% from 2024 to 2029

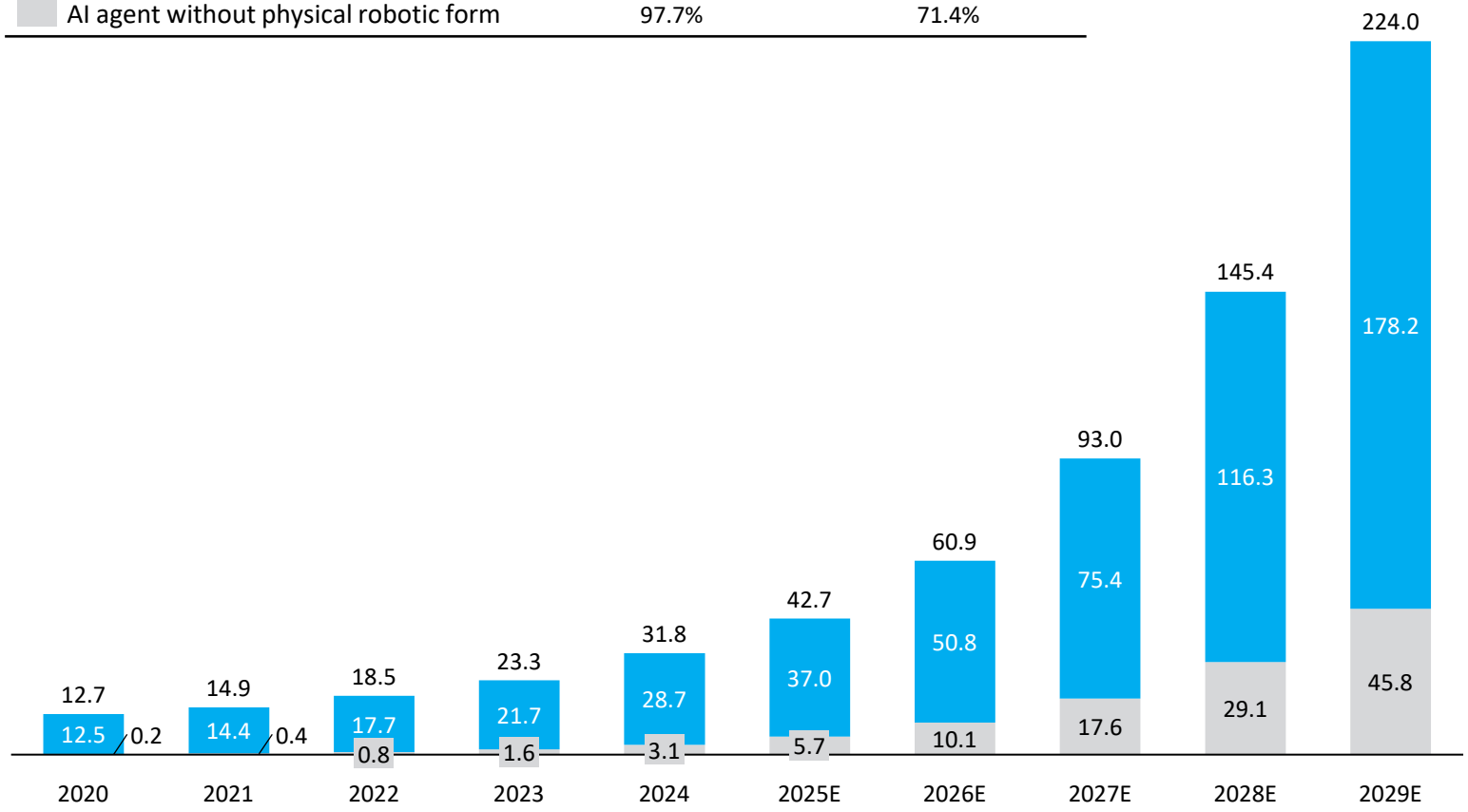
*Source: Expert Interview, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Market Size of AI Agent Market in China, by Physical Robotic Form

## Market Size of AI Agent Market in China, by physical robotic form

RMB Billion, 2020-2029E

| CAGR | 2020-2024 | 2024-2029E |
|---|---|---|
| **Total** | 25.8% | 47.8% |
| AI agent with physical robotic form | 23.1% | 44.1% |
| AI agent without physical robotic form | 97.7% | 71.4% |




### *Key Takeaways*

- Similar to the trend of the global AI agent market, the market size of the AI agent market in China in terms of revenue increased from RMB12.7 billion in 2020 to RMB31.8 billion in 2024, representing a CAGR of 25.8%, and is expected to reach RMB224.0 billion in 2029 with an accelerated CAGR of 47.8% from 2024 to 2029. Specifically, the AI agent with physical robotic form market in China in terms of revenue is anticipated to grow from RMB12.5 billion in 2020 to RMB178.2 billion in 2029, with a CAGR of 23.1% between 2020 and 2024 and a higher CAGR of 44.1% from 2024 to 2029. The AI agent without physical robotic form market in China in terms of revenue is expected to experience a stronger growth, expanding from RMB0.2 billion in 2020 to RMB45.8 billion in 2029, with a CAGR of 97.7% from 2020 to 2024 and a CAGR of 71.4% from 2024 to 2029.

*Source: Expert Interview, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Market Size of Global AI Agent Market, by Application Scenario

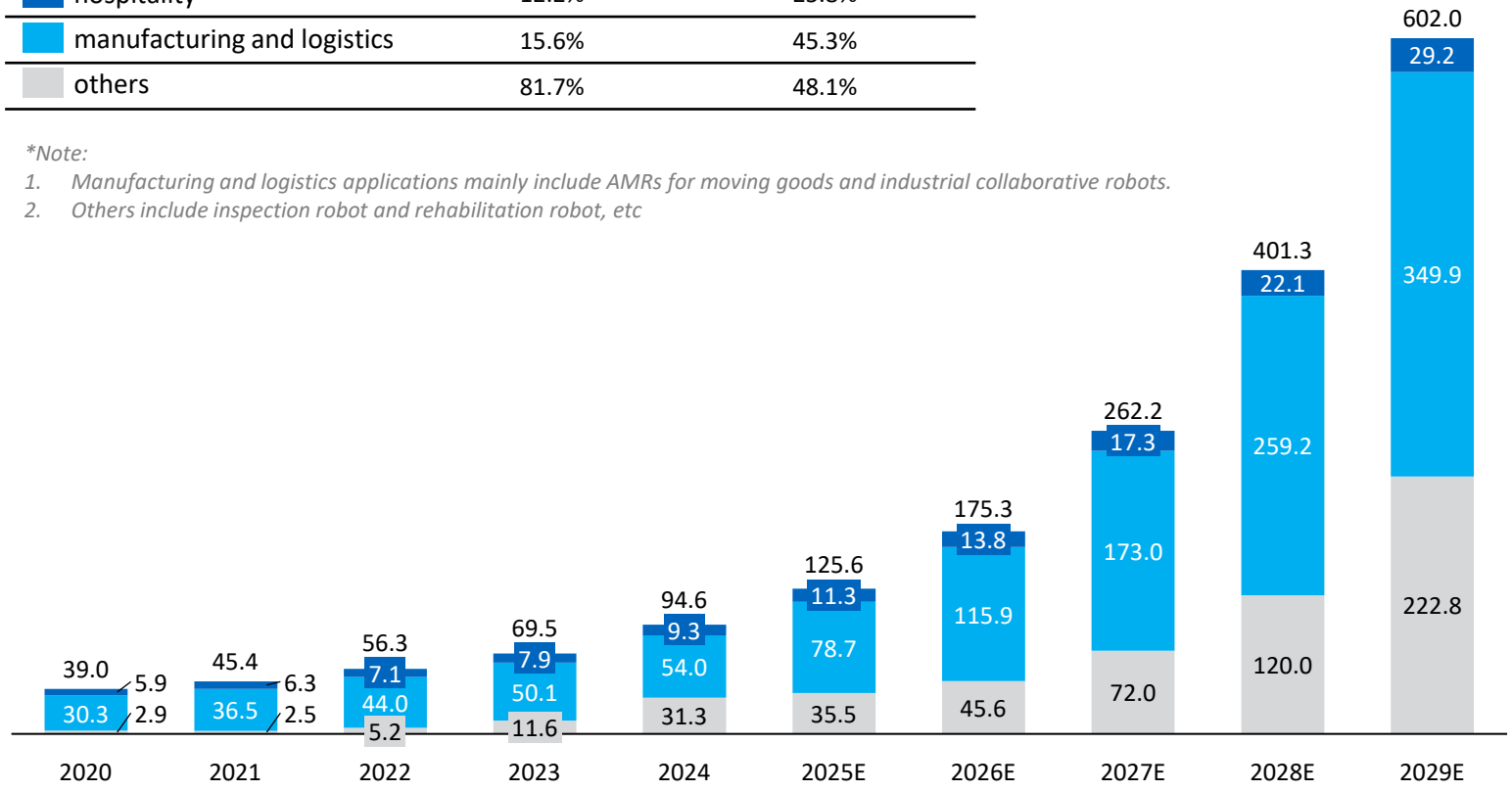
## Market Size of Global AI Agent Market, by application scenario

RMB Billion, 2020-2029E

| CAGR | 2020-2024 | 2024-2029E |
|---|---|---|
| **Total** | 24.8% | 44.8% |
| hospitality | 12.2% | 25.8% |
| manufacturing and logistics | 15.6% | 45.3% |
| others | 81.7% | 48.1% |

**Note:*

1. *Manufacturing and logistics applications mainly include AMRs for moving goods and industrial collaborative robots.*
2. *Others include inspection robot and rehabilitation robot, etc*




### *Key Takeaways*

- AI agents may be applied for multiple purposes, such as providing hospitality services, manufacturing and logistics services, and other applications. The market size of the global hospitality AI agent market in terms of revenue demonstrated a CAGR of 12.2% from 2020 to 2024, and is expected to grow with a CAGR of 25.8% from 2024 to 2029. The global manufacturing and logistics AI agent market, mainly representing AMRs for moving goods and industrial collaborative robots, also shows significant growth potential, with the market size in terms of revenue increased with a CAGR of 15.6% from 2020 to 2024, and is expected to grow with a CAGR of 45.3% from 2024 to 2029. Other applications, mainly including inspection robots and rehabilitation robots, are also expected to contribute to the growth of the AI agent market, with the market size in terms of revenue expanded with a CAGR of 81.7% from 2020 to 2024, and is expected to grow with a CAGR of 48.1% from 2024 to 2029.

*Source: Expert Interview, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Market Size of AI Agent Market in China, by Application Scenario

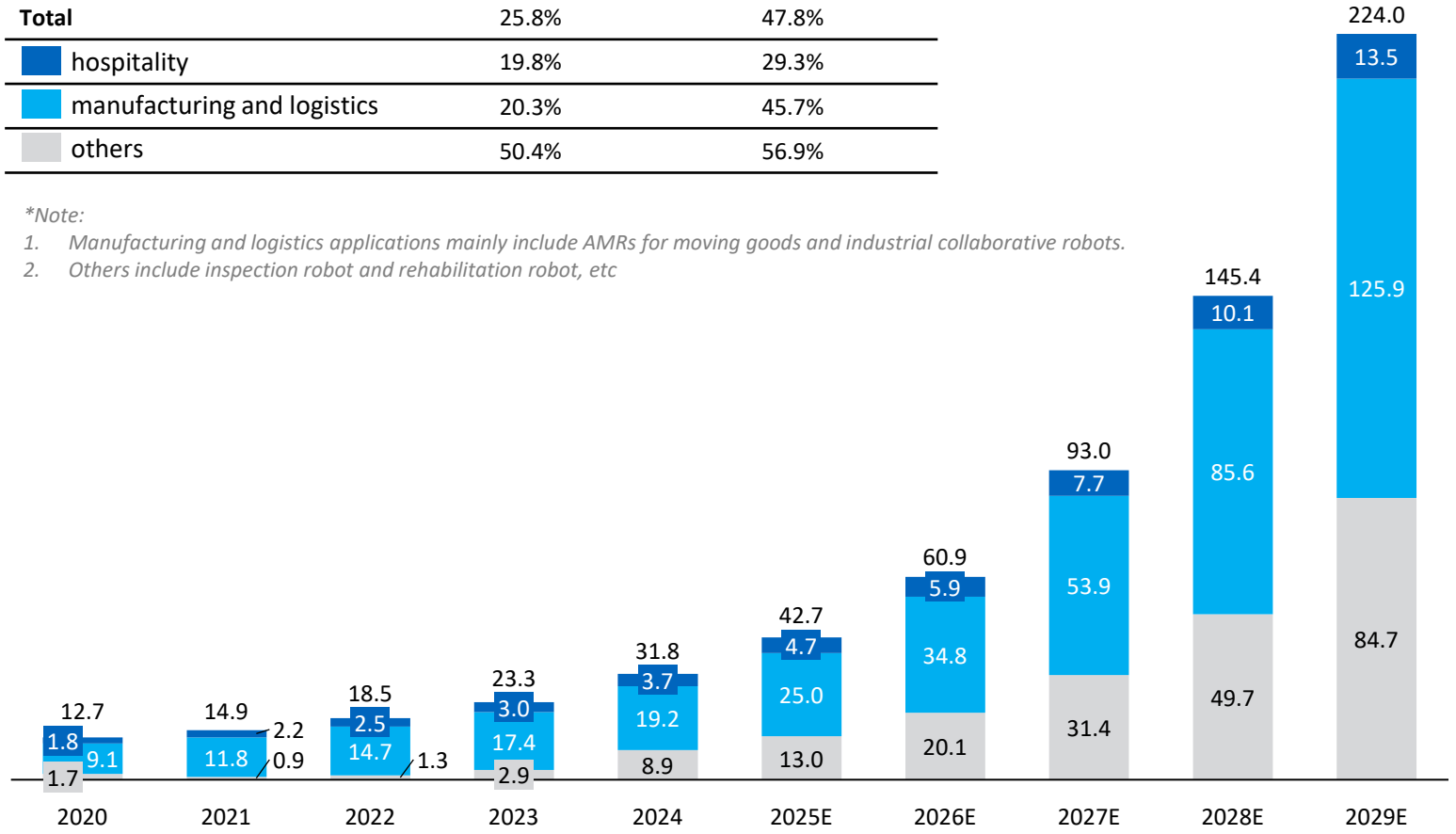
## Market Size of AI Agent Market in China, by application scenario

RMB Billion, 2020-2029E

| CAGR | 2020-2024 | 2024-2029E |
|---|---|---|
| **Total** | 25.8% | 47.8% |
| hospitality | 19.8% | 29.3% |
| manufacturing and logistics | 20.3% | 45.7% |
| others | 50.4% | 56.9% |

**Note:*

1. *Manufacturing and logistics applications mainly include AMRs for moving goods and industrial collaborative robots.*
2. *Others include inspection robot and rehabilitation robot, etc*




### *Key Takeaways*

- The market size of the hospitality AI agent market in China in terms of revenue demonstrated a CAGR of 19.8% from 2020 to 2024, and is expected to grow with a CAGR of 29.3% from 2024 to 2029. The manufacturing and logistics AI agent market in China, mainly representing AMRs for moving goods and industrial collaborative robots, also demonstrates robust growth potential, with the market size in terms of revenue increased with a CAGR of 20.3% from 2020 to 2024, and is expected to grow with a CAGR of 45.7% from 2024 to 2029. Other applications, mainly including inspection robots and rehabilitation robots, are also expected to contribute to the growth of the AI agent market, with the market size in terms of revenue expanded with a CAGR of 50.4% from 2020 to 2024, and is expected to grow with a CAGR of 56.9% from 2024 to 2029.

*Source: Expert Interview, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Introduction of Hospitality Robotic-based AI Agent

## Overview of Hospitality AI Agents

• Hospitality AI agents are designed to achieve hospitality-oriented goals, which prioritize human-agent interactions, service optimization and collaborative workflows. Within the hospitality AI agent sector, the embodiment distinction remains critical. Hospitality AI agents with physical robotic forms are physical entities like service robots or IoT-enabled devices that interact directly with guests and environments, while hospitality AI agents without physical robotic forms mainly operate as software platforms (e.g., AI-based analytical tools and ready-to-deploy software) to manage disembodied services and backend processes.

## Analysis of Business Model

The companies engaging in the hospitality AI agent industry generate revenue through multiple channels:

• **Subscription and sale of software system:** represents revenue from subscription and sales of software systems. These systems integrate seamlessly with the existing systems of downstream scenarios, providing functions such as robot management systems and scenario-based operation platforms.

• **Sale and lease of hardware:** represents revenue from sales and rental of hardware, such as robot device, core components of robot body, such as chassis, and related IoT devices, such as vending machines.

• **Integrated solution:** represents revenue from offering customers a complete package of both the hardware and software.

• **Eco-operation:** represents revenue from providing tailored operational services for customers by leveraging the hospitality AI agents to meet the specific needs of various downstream scenarios.

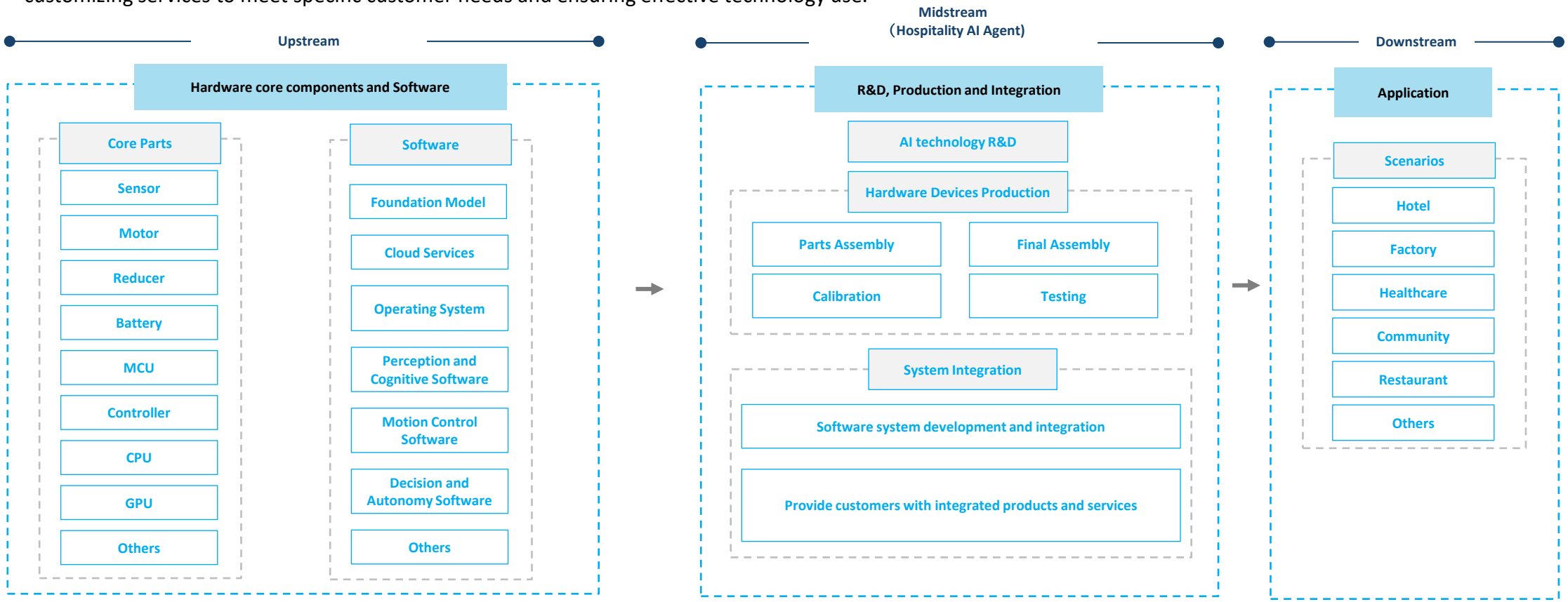
*Source: Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market

## Value Chain of Hospitality AI Agent

### Value Chain of Hospitality AI Agent

- The hospitality AI agent industry chain includes upstream hardware core components and software, midstream R&D, production and integration, and downstream application. The upstream stage sources essential hardware core components and software for building the hospitality AI agents. Hardware core components include sensors, motors, batteries, controllers, MCUs, CPUs and GPUs, forming the core of these systems. Software includes cloud services and foundation model, for subsequent integration with hardware. The midstream stage focuses on R&D, production and integration of AI agents, which involves assembling parts, system calibration, testing and developing software to ensure seamless hardware-software operation, delivering integrated solutions to customers. The downstream stage deploys hospitality AI agents in real-world settings like hotels and factories, customizing services to meet specific customer needs and ensuring effective technology use.




*Source: Public Information Collection, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Comparison of Major Types of Participants in China’s Hospitality AI Agent Market (1/2)

To address the pain points faced in downstream scenarios, including inefficiencies in service delivery and response, challenges in human resource management, gaps in operational management and decision support and challenges in consumer demand insights, hospitality AI agents provide personalized services and prompt responses, reducing negative reviews and enhancing customer satisfaction, which helps businesses gain positive feedback and attract new customers. Meanwhile, hospitality AI agents offer services that surpass customer anticipations, strengthening customer loyalty and promoting word-of-mouth dissemination, thereby attracting more users and driving revenue growth. Through the dual flywheel effect mentioned above, hospitality AI agents empower businesses to achieve sustainable growth and secure a stable foothold within the market.

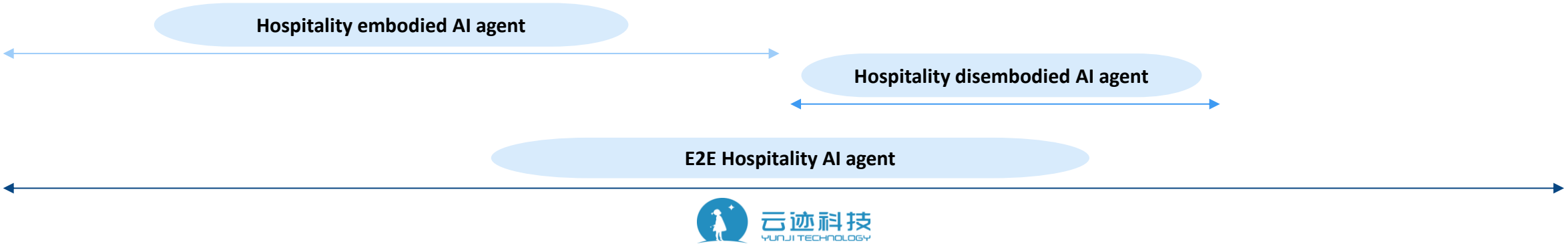
The competitiveness of hospitality AI agent providers is gauged by the breadth of their AI technology and the variety of downstream applications they can serve. Key metrics include: (i) hardware device and after-sales support; (ii) integrated software to synergize with the operation of hardware device; (iii) revenue-generating software platforms capable of operating independently from proprietary hardware or interfacing with third-party hardware via standardized APIs, enabling modular deployment, cross-platform compatibility and interactive optimization of software functionalities without hardware dependency across various scenarios; and (iv) end-to-end services, a seamless, fully automated workflow from task initiation to resolution, mediated by AI agents without human intervention, through which the AI agents understand and satisfy the needs of consumers directly.

Among hospitality AI agent providers, the company distinguishes itself from other players by combining the characteristics of both hospitality AI agents with physical robotic forms and hospitality AI agents without physical robotic forms through our vertically integrated approach to deliver end-to-end services via synchronized hardware-software convergence. Compared with hospitality AI agents with physical robotic forms, the company not only features composite polymorphic robots adaptable to diverse scenarios, but also possesses a robust software platform capable of operating independently from the hardware. Compared with hospitality AI agents without physical robotic forms, the company executes physical-digital service convergence, engaging end users through both digital interfaces and robotic AI agents with physical robotic forms to enable closed-loop service automation with tangible service fulfillment

*Source: Frost & Sullivan*

# Overview of China's Hospitality AI Agent Market
## Comparison of Major Types of Participants in China's Hospitality AI Agent Market (2/2)

| Hardware and service | Software integrated with hardware | Standalone cross-scenario software[1] | End-to-end (E2E) service[2] |
|---|---|---|---|
| Robot devices | Multimodal AI module | AI-based analytical tools | E2E service through hardware |
| IoT modules | Cloud-based operating system | Ready to deploy software | E2E service through software |
| Aftersales support services | | | |




*Note1: Refers to revenue-generating software platforms capable of operating independently from proprietary hardware or interfacing with third-party hardware via standardized APIs. Such decoupling enables modular deployment, cross-platform compatibility, and iterative optimization of software functionalities without hardware dependency across various industry*
*Note2: A seamless, fully automated workflow from task initiation to resolution, mediated by AI agents (both hardware and software) without human intervention. Through this service, the AI agents understand and solve the needs of end customers directly*



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*Source: Public Information Research, Expert Interview, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Introduction of Robotic-based AI Agent

## Overview of Hospitality Robotic-based AI Agent

A hospitality robotic-based AI agent is designed to deliver end-to-end services centered around human-agent interaction. Hospitality robotic-based AI agents may exist in both physical robotic form and non-physical robotic form, the latter of which, specifically, refers to AI-driven software systems that are capable of integrating with robotic devices. By integrating advanced AI functionalities, it is engineered to understand and respond to human needs, make service-oriented decisions, and perform tasks that improve consumer satisfaction. The deployment of hospitality robotic-based AI agents aims to elevate consumer experience and optimize service operations across various scenarios. For example, unlike traditional AMRs used to perform repetitive tasks in specific scenarios, such as moving goods in factories, which have limits in adapting to new situations and performing a variety of tasks, hospitality robotic-based AI agents are better suited for complex situations, such as providing room services in hotels or patient support in healthcare facilities, offering flexible, people-centric services that can promptly respond to dynamic and spontaneous needs. This adaptability enables them to significantly improve both consumer experience and operational efficiency in diverse environments.

On the other hand, hospitality robotic-based AI agents constitute an advanced iteration of traditional robots. Unlike traditional robots relying on pre-designed control algorithms and having relatively low-level intelligence, hospitality robotic-based AI agents integrate advanced AI in perception, planning, memory and action. They boost performance via continuous learning and machine learning to refine algorithms, achieving collective intelligence through communication networks, a feat beyond traditional robots. Traditional robots, restricted to specific scenarios and fixed production lines, face limited production efficiency. In contrast, hospitality robotic-based AI agents show superior extensibility and migratability. With adaptable hardware and software, they can be customized for different scenarios with different functions. Their cloud-based setup and advanced AI algorithms enable efficient data analysis and application across different contexts, demonstrating transferable learnings and adaptability. This allows hospitality robotic-based AI agents to process complex information, and make decisions in dynamic environments. They can be easily reprogrammed and updated to meet new requirements, making them highly versatile and capable of providing flexible and on-demand services

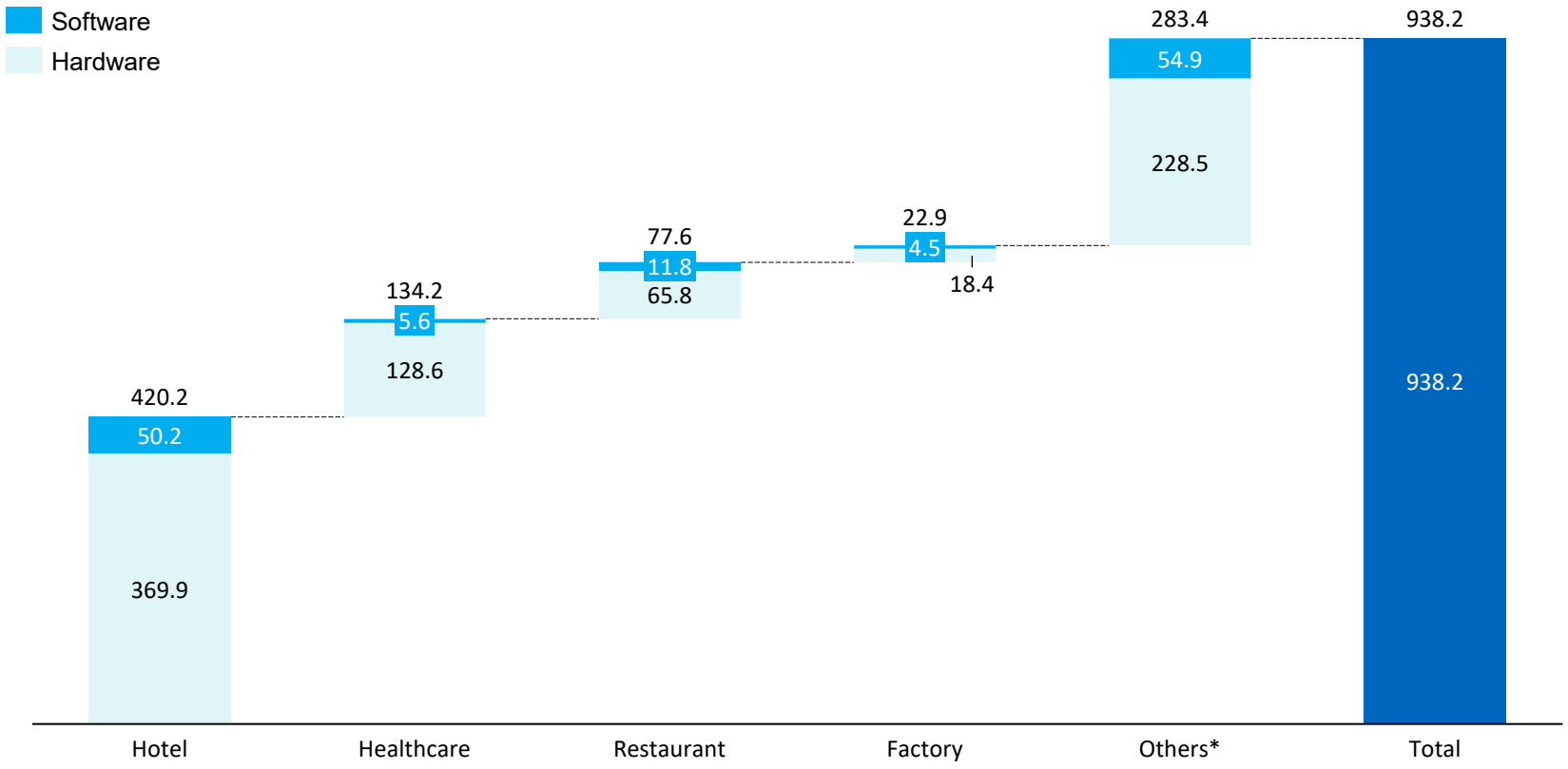


*Source: Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# TAM of China’s Hospitality Robotic-based AI Agent

**Total Addressable Market of China’s Hospitality Robotic-based AI Agent, by scenarios****

RMB Billion, 2024




*Note*: Others include communities, commercial buildings, museums, exhibition halls, entertainment venues, etc. Among it, entertainment venues include karaoke, footbaths, business clubs, etc*

*Note**: TAM is calculated by multiplying the number of facilities in the end of Year 2024 in various scenarios and their potential spending on hardware and software of hospitality robotic-based AI agents.*

***Key Findings***

The total addressable market of the hospitality robotic-based AI agents in China across various scenarios in 2024 is approximately RMB938.2 billion, as calculated by multiplying the number of facilities providing hospitality services at the end of 2024 and their potential procurement demand of hardware and software of hospitality robotic-based AI agents in such year, assuming that the demand of all facilities for hardware and software of hospitality robot-based AI agents is fully addressed. Among all, approximately RMB420.2 billion of the total addressable market in 2024 is attributable to hotels, which is the largest segment of the total addressable market of the hospitality robotic-based AI agents in China in 2024, including software demand of approximately RMB50.2 billion and hardware demand of approximately RMB369.9 billion.



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*Source: China Hotel Association, National Bureau of Statistics, Ministry of Industry and Information Technology, Public information collection, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Market Size of China’s Hospitality Robotic-based AI Agent

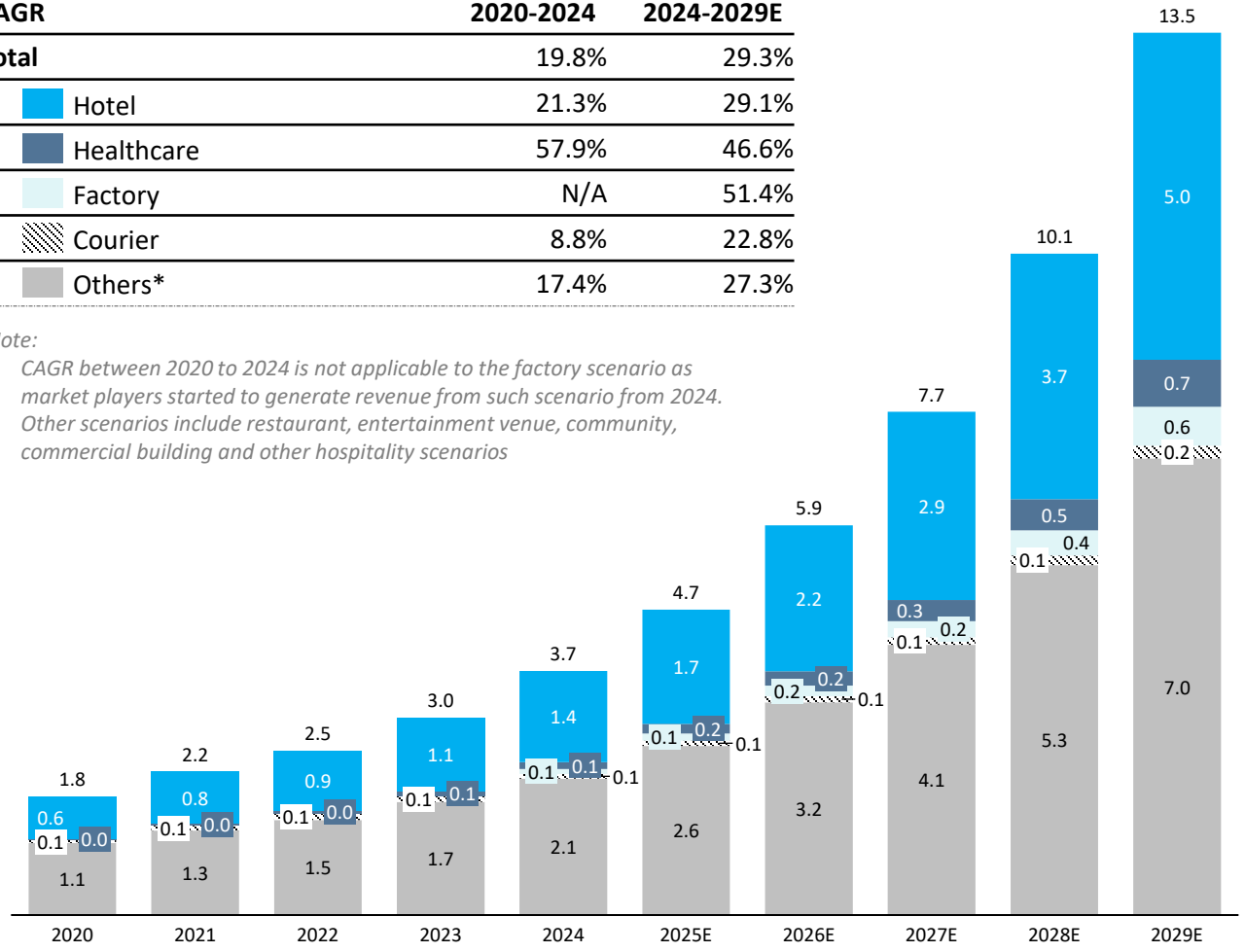
## China’s Hospitality Robotic-based AI Agent Market, in terms of revenue, by scenarios

RMB Billion, 2020-2029E

| CAGR | 2020-2024 | 2024-2029E |
|---|---|---|
| **Total** | 19.8% | 29.3% |
| Hotel | 21.3% | 29.1% |
| Healthcare | 57.9% | 46.6% |
| Factory | N/A | 51.4% |
| Courier | 8.8% | 22.8% |
| Others* | 17.4% | 27.3% |

*Note:*

1. *CAGR between 2020 to 2024 is not applicable to the factory scenario as market players started to generate revenue from such scenario from 2024.*
2. *Other scenarios include restaurant, entertainment venue, community, commercial building and other hospitality scenarios*




*Market size includes revenue from sales of robot products, components and accessories, software services and robot rentals in China, encompassing both hospitality AI agents with and without physical robotic forms. Overseas revenue is not included*

***Key Findings***

- The hospitality robotic-based AI agent market in China, which includes both hospitality AI agents with and without physical robotic forms, has experienced rapid growth. The market size of the hospitality robotic-based AI agent market in China in terms of revenue increased from RMB1.8 billion in 2020 to RMB3.7 billion in 2024, representing a CAGR of 19.8%. Driven by advancements in AI technology, the increasing multifunctionality and scalability of hospitality robotic-based AI agents, the growing demand for premium, efficient and consistent services from downstream industries, and favorable government policies, the hospitality robotic-based AI agent market in China is estimated to further increase, reaching RMB13.5 billion by 2029, representing a CAGR of 29.3% from 2024 to 2029.

- Hotel scenario is the largest segment of the hospitality robotic-based AI agent market in China from 2020 to 2024, and is expected to maintain such position up to 2029. The market size of the hospitality robotic-based AI agent market for hotel scenario in China in terms of revenue increased from RMB0.6 billion in 2020 to RMB1.4 billion in 2024, representing a CAGR of 21.3%, and is expected to reach RMB5.0 billion in 2029 with a stronger CAGR of 29.1% from 2024 to 2029. The market size of the hospitality robotic-based AI agent market for healthcare facilities in China in terms of revenue demonstrated a CAGR of 57.9% from 2020 to 2024, and is expected to grow with a CAGR of 46.6% from 2024 to 2029. Factory scenario is a relatively new scenario of the hospitality robotic-based AI agent market in China, enabling hospitality robotic-based AI agents to directly interact with end-users in factories and make deliveries between people and people and between people and goods, providing human-centric and end-to-end services. Factory scenario recorded a market size of RMB0.075 billion in terms of revenue in 2024, and is expected to reach RMB0.6 billion in 2029, showing a large potential market to penetrate in. The market size of the hospitality robotic-based AI agent market for courier scenario, namely last-stop deliveries, in China in terms of revenue demonstrated a CAGR of 8.8% from 2020 to 2024, and is expected to grow with a CAGR of 22.8% from 2024 to 2029.

- Other scenarios include entertainment venue, community, commercial buildings and other hospitality scenarios. The market size of the hospitality robotic-based AI agent market for other scenarios in China is expected to grow at a CAGR of 27.3% from RMB2.1 billion in 2024 to RMB7.0 billion in 2029.



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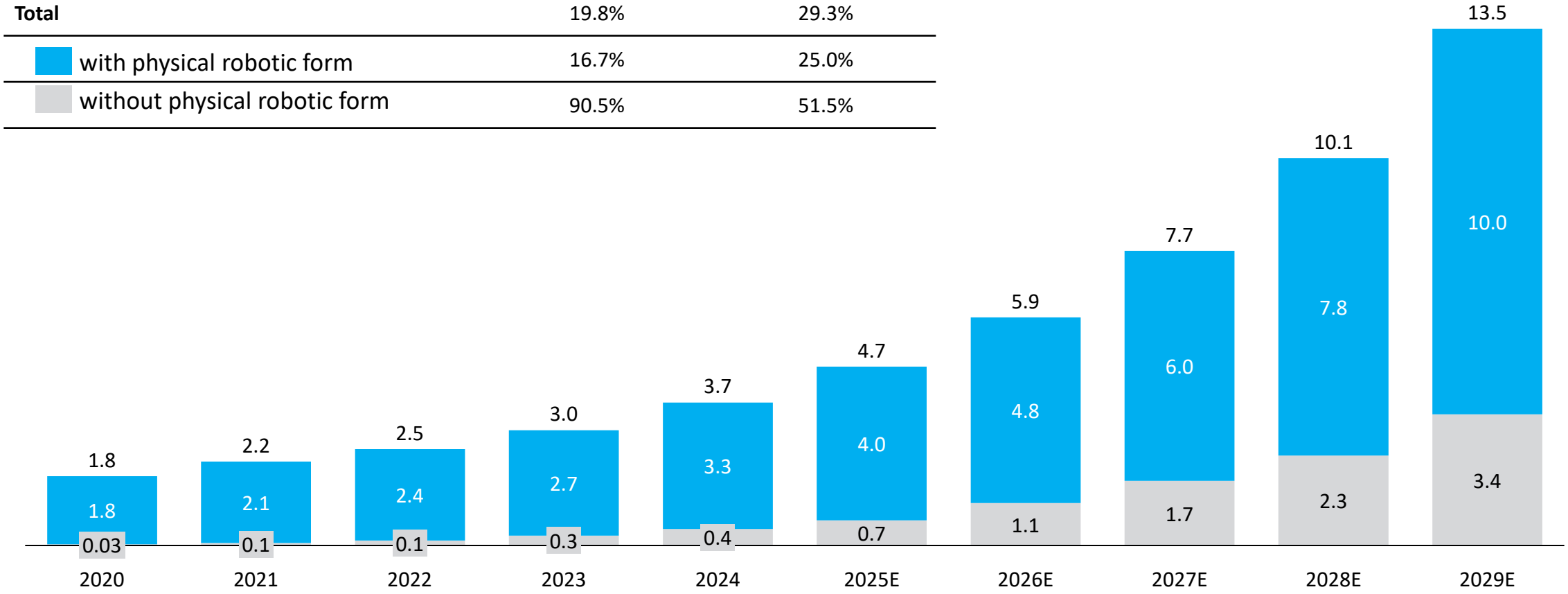
*Source: Expert Interview, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Market Size of China’s Hospitality Robotic-based AI Agent

## China’s Hospitality Robotic-based AI Agent Market, in terms of revenue , by physical robotic form

RMB Billion, 2020-2029E

| CAGR | 2020-2024 | 2024-2029E |
|---|---|---|
| **Total** | 19.8% | 29.3% |
| with physical robotic form | 16.7% | 25.0% |
| without physical robotic form | 90.5% | 51.5% |



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*Source: Expert Interview, Frost & Sullivan*

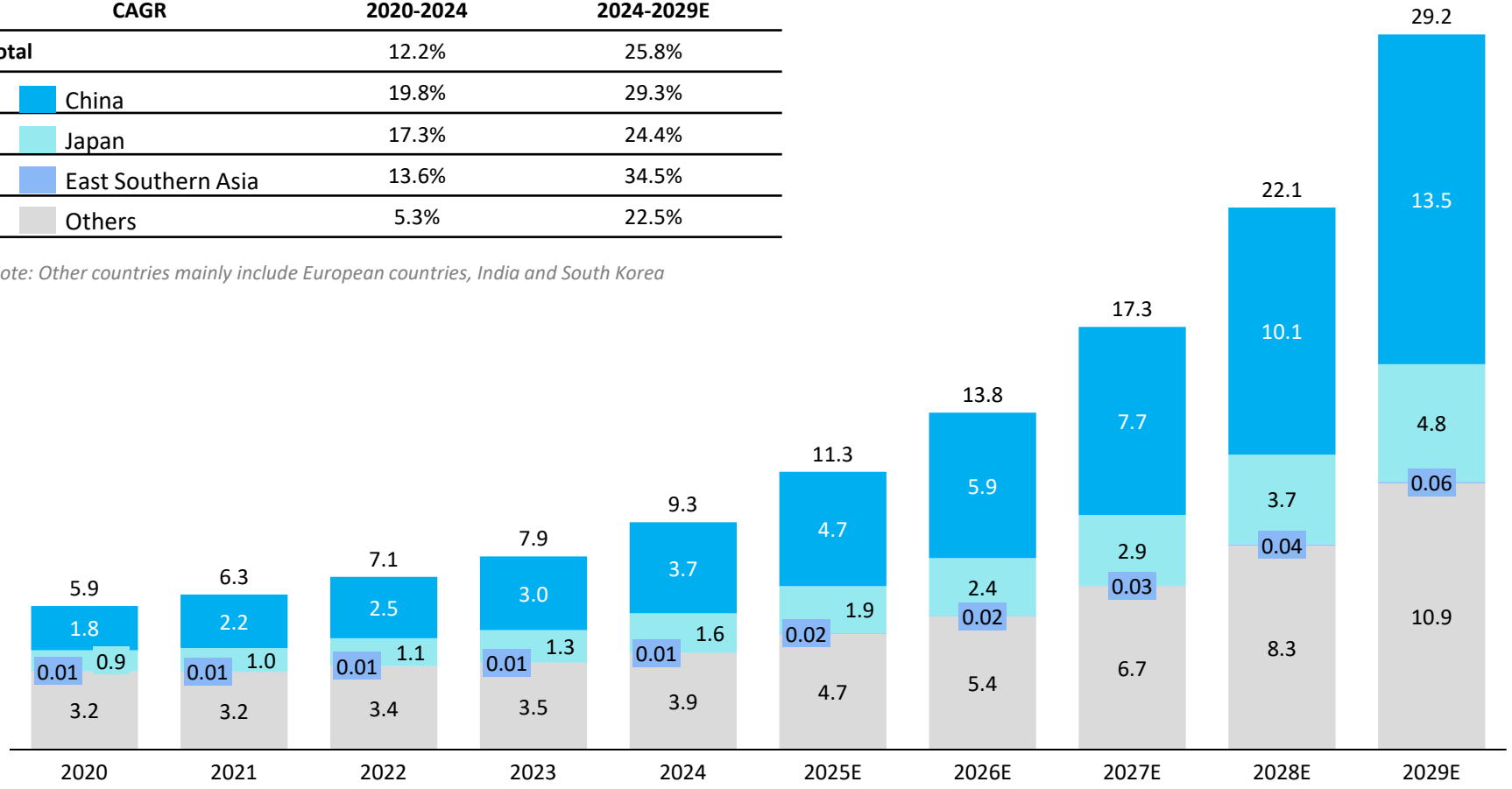
# Overview of China's Hospitality Robotic-based AI Agent Market
# Market Size of Global Hospitality Robotic-based AI Agent

## Global Hospitality Robotic-based AI Agent Market, in terms of revenue , by country

RMB Billion, 2020-2029E

| CAGR | 2020-2024 | 2024-2029E |
|---|---|---|
| **Total** | 12.2% | 25.8% |
| China | 19.8% | 29.3% |
| Japan | 17.3% | 24.4% |
| East Southern Asia | 13.6% | 34.5% |
| Others | 5.3% | 22.5% |

**Note: Other countries mainly include European countries, India and South Korea*




### *Key Findings*

- The market size of the hospitality robotic-based AI agent market in Japan in terms of revenue increased from RMB0.9 billion in 2020 to RMB1.6 billion in 2024, representing a CAGR of 17.3%, and is expected to reach RMB4.8 billion in 2029 with a stronger CAGR of 24.4% from 2024 to 2029. The market size of the hospitality robotic-based AI agent market in Southeast Asia in terms of revenue increased from RMB8.3 million in 2020 to RMB13.9 million in 2024 with a CAGR of 13.6%, and is expected to reach RMB61.1 million in 2029 at a CAGR of 34.5% from 2024 to 2029, indicating significant growth potential.



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*Source: Expert Interview, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Drivers of Hospitality Robotic-based AI Agent in Oversea Countries

## Drivers of Japan's Hospitality Robotic-based AI Agent

### *Labor Shortage*

- Japan faces significant labor shortages amid an aging population and declining birth rates. As of October 2024, Japan's total population stood at approximately 123.8 million, down by around 550,000 year-on-year, marking the 14th consecutive annual decline. Japan's population aging has intensified. Those aged 15 and below numbered 13.8 million, a historic low that represents 11.2% of the total population, while the 75 and above group reached 20.8 million, a record high that represents 16.8% of the total population. The hospitality and broader service industry are particularly impacted. Hospitality robotic-based AI agents can help fill these gaps by taking over routine tasks such as guest deliveries, freeing up human staff for more complex and value-added services

## Drivers of Southeast Asia's Hospitality Robotic-based AI Agent

### *Rapid recovery of tourism leading to strong demand for hospitality services*

- The Southeast Asia tourism market has witnessed a marked recovery in 2025. Thailand welcomed 12.09 million visitors in the first four months of 2025, while Malaysia received 10.1 million inbound tourists in the first quarter 2025, ranking the first in Southeast Asia. This recovery has driven robust demand for hospitality services, and hotel operators are motivated to achieve 24-hour service with the assistance of robots. In particular, hotel operators are keen to introduce hospitality robotic-based AI agents that can use elevators in multi-floor environment to enhance their ratings and provide differentiated experiences

### *Support from Southeast Asian governments and opportunities for the implementation of Chinese solutions*

- Southeast Asian governments welcome Chinese solutions and actively support Chinese technology projects, offering supportive policies to Chinese hospitality robotic AI agent companies. For example, the "Thailand Investment Promotion Strategy 2025", issued by the Thailand Board of Investment in January 2025, extends the validity period of corporate tax exemptions up to 15 years for high-tech industries like robotics and AI in the Eastern Economic Corridor of Thailand, alongside reduced R&D investment thresholds and import duty waivers for advanced manufacturing equipment.





*Source: Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Drivers of China’s Hospitality Robotic-based AI Agent (1/2)

## *The advancement of AI accelerates the development of China’s hospitality robotic-based AI agent market*

- The rapid advancement in AI technologies, particularly large models and multimodal AI, is a significant catalyst for the expansion of China's hospitality robotic-based AI agent industry. Large models equip robots with the ability to comprehend and produce human-like text, which is essential for advanced natural language understanding and communication. Multimodal AI further amplifies these capabilities by enabling robots to interpret and process information from multiple modalities, such as visual, auditory, and textual data, leading to a more nuanced perception of their surroundings.
- These technological strides are crucial as they empower robots to undertake tasks that were once the exclusive domain of human expertise, such as executing intricate instructions or engaging in sophisticated dialogues. The integration of multimodal AI also enhances the robots' data analysis capabilities, which is vital for tasks requiring precise object recognition and environmental understanding. As these technologies continue to evolve, they are expected to unlock a broader spectrum of applications for robots, from industrial automation to customer service, thereby increasing the market potential for China's hospitality robotic-based AI agent.

## *Hospitality robotic-based AI agent reduce potential risks and boost efficiency for downstream scenarios*

- The hospitality robotic-based AI agent market is rapidly expanding, driven by the growing demand for high-quality, efficient, and consistent service across various industries. The hospitality robotic-based AI agents address key challenges faced by sectors like hotels, factories, and healthcare, which traditionally struggle with low efficiency, delayed responses, and dangerous working conditions. In hotels, they provide 24/7 delivery services, ensuring quick response times and consistent performance without fatigue or variability. In factories, they make deliveries between people and goods, while in healthcare, they handle hazardous items like radiation-sensitive supplies safely. By offering reliable, standardized service, hospitality robotic-based AI agents not only meet consumer expectations but also enhance customer loyalty and drive business growth. Their ability to perform repetitive tasks reduces labor costs, while their adaptability and scalability make them valuable long-term investments. In hazardous or extreme environments, hospitality robotic-based AI agents minimize the risk of accidents and ensure precise operations, further solidifying their role as essential tools for modern businesses.

## *Standardized and modular design enables hospitality robotic-based AI agent to possess multifunctionality and scalability*

- The functional versatility and scalability of hospitality robotic-based AI agent are primarily driven by two factors: first, the modular hardware design of hospitality robotic-based AI agent, where the same base chassis can be easily adapted with different upper structures or modules for various tasks. This includes capabilities such as cleaning, delivery, and more, with the upper structure being separable, replaceable, or reassembled to meet specific operational needs. Second, the software scalability of the hospitality robotic-based AI agent allows for seamless integration with a wide range of hospitality systems and applications, making it adaptable to diverse environments and use cases. This flexibility ensures that hospitality robotic-based AI agent can evolve with changing business requirements and new technological advancements, offering both operational efficiency and long-term adaptability.



*Source: Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Drivers of China’s Hospitality Robotic-based AI Agent (2/2)

## *Favorable policies supporting the robust development of China’s hospitality robotic-based AI agents*

- The PRC government asserts the importance of the hospitality robotic-based AI agent industry and has introduced various policies to support the development of the hospitality robotic-based AI agent industry, which has now become a key driver for the digital and intelligent industrial transformation in China. The strategic support is further bolstered by policies that specifically target the growth of the robot market, thereby providing a robust framework for the hospitality robotic-based AI agent industry. In 2023, the MIIT released the Guiding Opinions on the Innovation and Development of Humanoid Robots (《人形機器人創新發展指導意見》), setting targets for 2025 and 2027. The 14th Five Year Plan for the Development of the Robot Industry (《“十四五”機器人產業發展規劃》) issued in 2021 aimed to achieve breakthroughs in core technologies and high-end products. The national strategy Made in China 2025 (《中國製造2025》) identified the robotic industry as a priority sector for advancement, alongside AI and automation, to elevate manufacturing industry standards.

## *Enhanced operational efficiency*

- Hospitality robotic-based AI agents can significantly improve operational efficiency in factory and courier scenarios. In factories, hospitality robotic-based AI agents streamline interpersonal material transport by optimizing delivery routes and minimizing delays, thus boosting overall productivity. Similarly, in courier services, they efficiently handle last-stop delivery through precise navigation and real-time route adjustments, ensuring timely and accurate package delivery.

## *Cost reduction and resource optimization:*

- Implementing hospitality robotic-based AI agents helps reduce labor costs and optimize resource usage. By automating labor-intensive tasks, hospitality robotic-based AI agents can monitor and adjust resource consumption in real-time, minimizing waste and improving overall operational cost-effectiveness. For example, in courier scenarios, they lower operational costs by minimizing reliance on human couriers for last-mile delivery, while their efficient, reliable service decreases risks of package loss or damage.





*Source: Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Trends of China’s Hospitality Robotic-based AI Agent

### *The ongoing reduction in production costs accelerate the large-scale commercialization of hospitality robotic-based AI agent*

- The ongoing reduction in production costs is a significant driver of the hospitality robotic-based AI agent market, accelerating the large-scale commercialization of hospitality robotic-based AI agent. For example, computing main control board saw a notable unit price drop from around RMB1,800-RMB2,500 in 2021 to RMB1,000-RMB1,800 in 2024 due to the increasing domestic substitution. Additionally, in-wheel motor experienced reduction in unit price from RMB400-800 in 2021 to RMB250-500 in 2024 due to technology innovations and fluctuating market dynamics. This, in turn, significantly lowers the overall manufacturing cost of hospitality robotic-based AI agent. These trends collectively underscore the downward trajectory in production costs, facilitating broader adoption and rapid commercialization of hospitality robotic-based AI agent across industries.

### *Expanding downstream application scenarios and business models of hospitality robotic-based AI agent*

- The hospitality robotic-based AI agent market is witnessing a growing trend of expanding application scenarios across a variety of industries. Initially deployed in specific settings like hotels, factories, and restaurants, hospitality robotic-based AI agent are now extending their reach to new environments such as campuses and healthcare. This trend is fueled by the agents’ ability to efficiently perform tasks, enhance safety, and provide consistent service. As they move into new sectors, hospitality robotic-based AI agent will also drive changes in business models; new revenue streams could arise, such as pay-per-use models, performance-based contracts, or even the creation of service-specific partnerships between technology providers and end-users.





*Source: Frost & Sullivan*

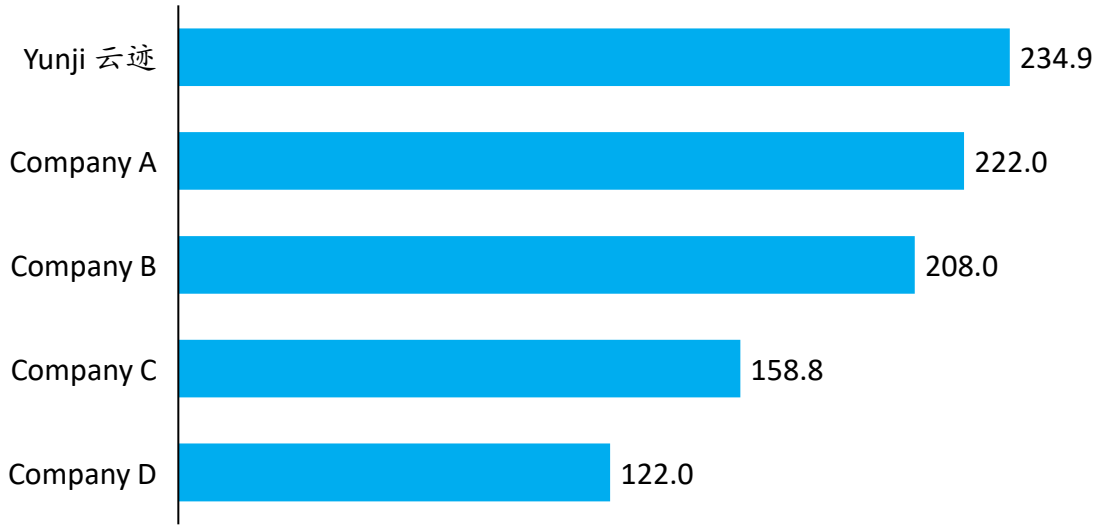
# Overview of China‘s Hospitality Robotic-based AI Agent Market
# Competitive Landscape of China’s Hospitality Robotic-based AI Agent Market

### Competitive Landscape of China’s Hospitality Robotic-based AI Agent Market

In China's hospitality robotic-based AI agent market, the top five companies collectively capture 25.4% of the market, with Yunji leading as the top player at RMB 234.9 million (6.3% share). This distribution highlights a moderately concentrated market, where the top five firms hold a significant but not dominant position, leaving 74.6% of the market fragmented among smaller players.

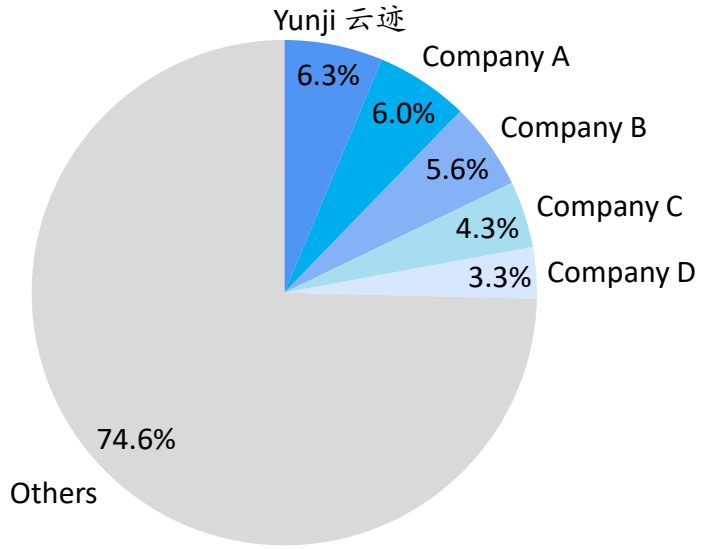
**Revenue of Major Players in China’s Hospitality Robotic-based AI Agent Market***

Million RMB, 2024




**Market Share of China’s Robotic-based AI Agent**

Percentage, 2024




*Note: Revenue of each player is calculated on a grouped basis, including the revenue from sales of robot products, components and accessories, software services and robot rentals generated in China.*



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*Source: Expert Interview, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market

## Overview of Major Type of Hospitality AI agent providers – Embodied AI Agent

Yunji distinguishes itself among both hospitality embodied AI agents and disembodied AI agents through its vertically integrated approach to delivering end-to-end services via synchronized hardware-software convergence.

Compared to hospitality embodied AI agents, Yunji not only features composite polymorphic robots adaptable to diverse scenarios but also possesses a robust software platform capable of operating independently from the hardware.

| Company | Overview | Listing status | Registered Capital (RMB Million) | Major types of products and services of related to hospitality scenarios | Main application scenarios | Covered countries |
|---|---|---|---|---|---|---|
| **Beijing Yunji Technology Co., Ltd.**<br>**北京云迹科技股份有限公司** | • Founded in 2014, headquartered in Beijing, China. The company specializes in robotic-based AI agent product application and technology development | • Not listed | • 61.8 | • Delivery and cleaning robotic-based AI agent<br>• HDOS<br>• IoT module | • Hotels<br>• Healthcare<br>• Factories<br>• others | • China, Japan, Korea, Thailand, Middle East, North America, Netherlands, Singapore, etc. |
| **Company D** | • Founded in 2016, headquartered in Shenzhen, China. The company specializes in designing, developing, manufacturing, and selling only the commercial delivery and cleaning robots | • Not listed | • 2.3 | • Commercial delivery robots<br>• Commercial cleaning robots | • Restaurants<br>• Hotels<br>• Entertainments | • China, Korea, Japan, Europe, North America, Saudi Arabia, etc. |
| **Company C** | • Founded in 2013, headquartered in Jiangsu, China. The company specializes in delivery, cleaning and disinfection robots | • Not listed | • 362.6 | • Commercial delivery robots<br>• Commercial cleaning robots | • Hotels<br>• Entertainments<br>• Closed Outdoor Places | • Mainly China |
| **Company A** | • Founded in 2010, headquartered in Shanghai, China. The company specializes in delivery robots, but also covers other robots including patrolling, guiding, cleaning and collaborating robots | • Not listed | • 2.9 | • Commercial delivery robots | • Restaurants<br>• Hotels<br>• Commercial Buildings | • China, Korea, Japan, Europe, North America, Saudi Arabia, etc. |
| **Company B** | • Founded in 2013, headquartered in Shanghai, China. The company has the first-mover advantage. Their products focus on R & D cleaning robots, product models, wide range of application scenarios | • Not listed | • 4.0 | • Commercial cleaning robots | • Hotels<br>• Commercial Buildings | • China, UK, USA, UAE, Korea, Singapore, etc |





*Source: Public Information Collection, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Cost Analysis of Major Raw Materials and Core Components (1/2)

**Price range of major raw materials for the production of hospitality robotic-based AI agent**

- The hospitality robotic-based AI agents are composed of hundreds of raw materials, each differing significantly in attributes, functions and prices. The major raw materials to manufacture robotic-based AI agents mainly include control boards, LiDAR, RGBD Camera, battery, motor and interface display. Given the variety of raw materials of hospitality robotic-based AI agents, the correlation of hospitality robotic-based AI agent product price and different raw materials is relatively low, yet considering the cost-based pricing strategy, the price changes of one or several raw materials may have material impacts on the final price of hospitality robotic-based AI agents.

- The price of hospitality robotic-based AI agents in China declined from RMB20,000 to RMB40,000 in 2021 to RMB17,000 to RMB34,000 in 2023. Such a decline is not solely attributable to the decreasing cost of raw materials, but is also predominantly influenced by other factors, including intense market competition. The substantial fluctuation in pricing largely hinges on the functionality of these hospitality robotic-based AI agents. To illustrate, AI agents designed for delivery tasks may have different pricing compared to those intended for cleaning services, reflecting the diverse capabilities and applications of such technologies, highlighting the complexity of the market dynamics.





*Source: Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market
# Cost Analysis of Major Raw Materials and Core Components (2/2)

| Major raw materials | Price Range Per Unit from 2021 to 2024 (RMB) | | | | Key factors affecting the prices |
|---|---|---|---|---|---|
| | 2021 | 2022 | 2023 | 2024 | |
| Computing Main Control Board | 1,800-2,500 | 1,500-2,500 | 1,200-2,200 | 1,000-1,800 | • Domestic chip substitution acceleration<br>• Advanced semiconductor processes: Transition from 28nm to 7nm fabrication improved integration and lowered power consumption<br>• Economies of scale and price competition: Surging demand in robotics/AIoT drove mass production |
| Power Motor Control Board | 600-1,000 | | 450-800 | 300-600 | • Localized IGBT adoption: Domestic IGBT modules replaced imports<br>• Vertical supply chain integration: In-house chip and board production by firms like DJI cut intermediary costs |
| Single-line LiDAR | 400-1,000 | | 400-680 | 300-600 | • Mass production scaling: Annual output exceeding 1.5 million units reduced per-unit costs<br>• Simplified technical solutions: Transition to VCSEL lasers (vs. EEL) cut hardware costs |
| RGBD Camera | 400-800 | 380-700 | 300-500 | 200-400 | • Consumer-grade module proliferation: Lower-resolution alternatives (e.g., 720P) replaced premium models, slashing prices<br>• Intensified market competition: In-house solutions by security/robotics firms drove average prices down |
| Lithium Iron Phosphate Battery (24V 10AH) | 300-500 | | 300-450 | 200-350 | • Raw material volatility: Lithium carbonate surged to ¥150,000/ton in 2024, with iron phosphate rising ¥500/ton.<br>• Market demand polarization: Most batteries allocated to EVs, squeezing supply for industrial applications |
| In-wheel Motor (Below 500W) | 400-800 | 350-700 | 300-600 | 250-500 | • Rare-earth price fluctuations: Praseodymium-neodymium prices fell in 2023, reducing motor costs<br>• Lightweighting innovations: Optimized magnet geometry reduced material usage |
| LVDS Interface Touch Display (10.1 inches) | 500-900 | 500-800 | 400-600 | 300-500 | • eDP interface replacement: BOE/Tianma shifted to eDP, forcing LVDS inventory clearance discounts<br>• Panel oversupply: 2024 LCD capacity utilization dropped, driving industrial screen prices down<br>• Localized supply chains: Domestic integration of touch ICs and panels cut import tariffs and reduced the cost |





*Source: Frost & Sullivan*

# Table of Contents



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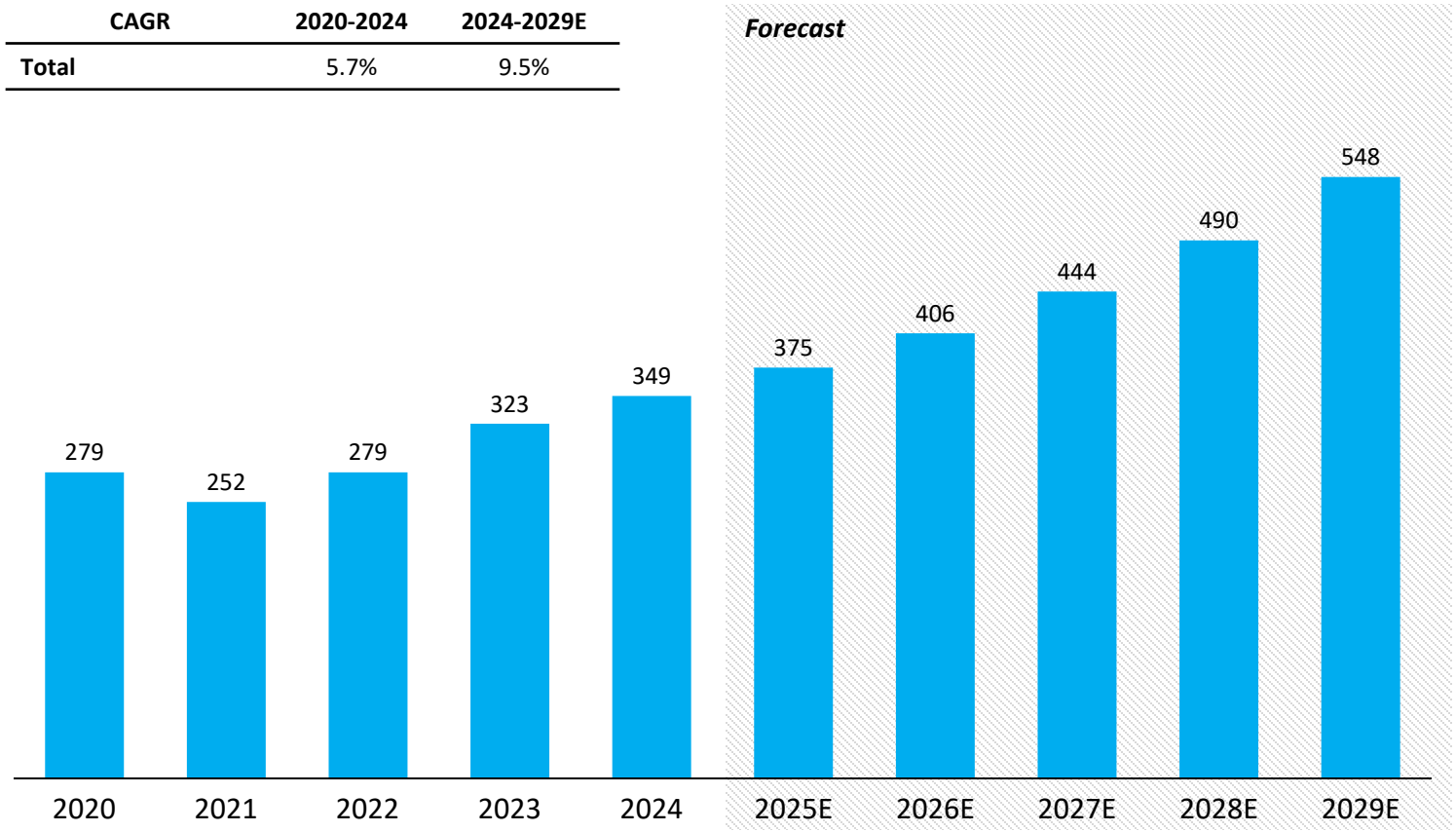
# Overview of China's Hospitality Robotic-based AI Agent Market for Hotel Scenario

## Overview of China’s Hotel Industry

### Number of Hotels in China

Thousands, 2020-2029E

| CAGR | 2020-2024 | 2024-2029E |
|---|---|---|
| Total | 5.7% | 9.5% |




***Key Takeaways***

- Hotel scenario is a major scenario of hospitality services. In 2020, there were 279.0 thousand hotels in China, while the market experienced a downturn in 2020 and 2021 due to the COVID-19 pandemic and unbalanced demand and supply. Despite this downturn, the hotel industry in China showed resilience and adapted to the changing market conditions. By 2022, the market showed a recovery and a shift towards a more consolidated and potentially higher quality market structure, reaching a 349.0 thousand hotels in 2024 with a CAGR of 5.7% from 2020 to 2024.
- Looking forward, this number is expected to reach 548 thousand in 2029 with a CAGR of 9.5%. This projected growth can be attributed to a confluence of factors. The easing of COVID-19 restrictions is spurring economic recovery and increasing travel and tourism, which in turn boosts demand for accommodations. The ongoing evolution of the hotel industry, with a focus on enhanced service quality and personalized experiences to meet the expectations of modern, discerning guests, is driving investment in new hotel properties. Additionally, the expanding middle class and rising disposable incomes are fueling demand for better accommodation options.





*Source: China Hotel Association, Public Information Collection, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market for Hotel Scenario

## Definition of China’s Hospitality Robotic-based AI Agent Market for Hotel Scenario

**Definition**

- In hotel scenario, hospitality robotic-based AI agents integrates advanced robotics with AI-driven software systems to streamline operations and enhance guest experiences. The agents typically consists of a robotic body capable of performing various tasks, a software system that governs the robot’s decision-making and interaction with its environment.
- Hospitality robotic-based AI agent in hotels is used for a wide range of tasks, including room service delivery, where they autonomously transport food, beverages, and other items to guest rooms. It also performs cleaning duties, such as vacuuming hallways or cleaning public areas, reducing the workload of hotel staff and maintaining hygiene standards. In addition to these practical services, hospitality robotic-based AI agent assists with guest reception and navigation by providing directions to rooms, amenities, or event spaces, and even offer check-in/check-out services, enhancing guest convenience.
- These hospitality robotic-based AI agent in hotels will be interconnected through cloud-based systems, enabling seamless data sharing and real-time decision-making. Additionally, the cloud infrastructure will enable the agents to work together, coordinating tasks and improving efficiency through machine learning models that refine over time. As the system learns from past interactions and data, it will enhance decision-making, leading to smarter, more adaptive service processes that improve both operational management and guest satisfaction.

**Policy Support**

- The hospitality robotic-based AI agent market for hotel scenario in China has gained significant global prominence due to a combination of high digitalization rates, unique market demands and strong policy support. According to China hospitality digitalization report 2024 issued by the China Chain Store & Franchise Association (中國連鎖經營協會), over 80% of mid-to-large-sized hotels have partially or fully digitized their operations. This digital transformation has accelerated the integration of robots into hotel services. Additionally, the prevalence of food delivery in China has spurred a high demand for in-room delivery services, further fueling the adoption of robots for room service. As more hotels introduce cleaning and delivery robots, competition of the hospitality robotic-based AI agent market for hotel scenario in China has intensified, compelling other hotels to adopt similar measures to maintain their competitiveness. Moreover, the Chinese government has implemented supportive policies, such as subsidies and incentives for the adoption of intelligent technologies, which have further boosted the growth of the hospitality robotic-based AI agent market for hotel scenario in China.





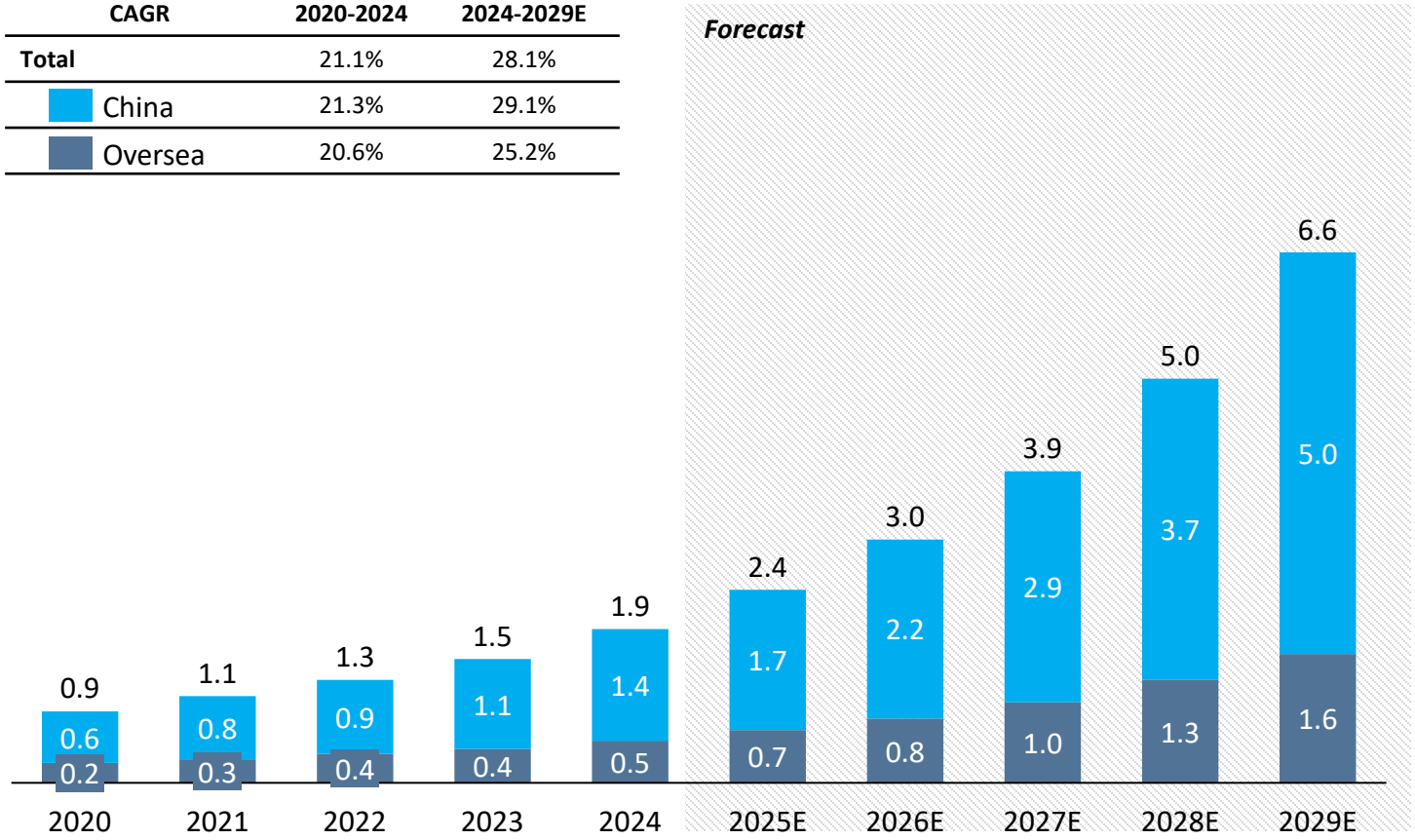
*Source: Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market for Hotel Scenario
# Market Size of Global Hospitality Robotic-based AI Agent Market for Hotel Scenario

## Market Size of Global Hospitality Robotic-based AI Agent Market for Hotel Scenario*

RMB Billion, 2020-2029E

| CAGR | 2020-2024 | 2024-2029E |
|---|---|---|
| Total | 21.1% | 28.1% |
| China | 21.3% | 29.1% |
| Oversea | 20.6% | 25.2% |




*Note*: Market size includes revenue from sales of robot products, components and accessories, software services, robot rentals, and operations globally.*

*Note*: Overseas market mainly includes Japan, South Korea, Europe and Southeast Asia.*

### *Key Takeaways*

- Hotel scenario is the largest segment of the hospitality robotic-based AI agent market in China from 2020 to 2024, and is expected to maintain such position up to 2029. The hospitality robotic-based AI agent market for hotel scenario in China has experienced significant growth. The market size of the hospitality robotic-based AI agent market for hotel scenario in China in terms of revenue generated in China increased from RMB0.6 billion in 2020 to RMB1.4 billion in 2024 with a CAGR of 21.3%, indicating a rapid expansion in the adoption of robotic-based AI agents within the hotel scenario and showcasing the substantial investment and interest in robotic-based AI agents for hotel operations. The growth is a testament to the increasing integration of technology in the hotel industry in China, as hotels seek to enhance efficiency and guest experience. Looking ahead, driven by increasing rate of chain hotel operation, demand for streamlined operation and higher digitalization rate of hotel industry, the market size of the hospitality robotic-based AI agent market for hotel scenario in China in terms of revenue generated in China is projected to continue its upward trajectory to reach RMB5.0 billion in 2029, with a CAGR of 29.1% from 2024 to 2029

*Source: Expert Interview, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market for Hotel Scenario
# Key Drivers of China’s Hospitality Robotic-based AI Agent Market for Hotel Scenario

## *China has a vast base of hotels, with a continuously increasing rate of chain operation*

- The substantial hotel industry in China, marked by a growing trend towards chain operation, is a key driver for the robotic-based AI agent market. As of the end of 2024, China had approximately 93.0 thousand chain hotels, representing a 26.5% increase from 90.6 thousand in 2023. Chain hotel rooms accounted for 40.1% of total hotel rooms in 2024. With a total of approximately 350.0 thousand hotels and 17.6 million hotel rooms nationwide, including 7.07 million chain hotel rooms at the end of 2024, this rapid growth boosts the demand for consistent, efficient service across multiple locations. Robotic-based AI agents can provide cost-effective, around-the-clock services, enhance guest experience with personalized interactions, and contribute to health and safety standards. These capabilities make robotic-based AI agent an attractive solution for hotel chains seeking to improve operational efficiency and guest satisfaction. The potential for large-scale deployment in chain operations further accelerates the adoption of robotic-based AI agents in the hotel scenario.

## *Robotic-based AI agent help China's hotel industry to streamline operation*

- Robotic-based AI agent is playing a pivotal role in modernizing China's hotel industry, addressing challenges like rising labor costs and increasing customer expectations. The agents automates routine tasks such as cleaning and room service delivery, including making and receiving calls and transporting items, which streamlines operations and allows staff to focus on more complex services. By providing seamless, round-the-clock service, it enhances customer satisfaction and meet the demand for quick, tailored interactions. Furthermore, the integration of these high-tech solutions helps hotels to differentiate themselves in a competitive market, improving operational efficiency and brand appeal by offering innovative guest experiences that blend efficiency with sophistication.

## *The hotel industry has more mature digital systems and greater acceptance of hospitality robotic-based AI agent compared to other sectors*

- Driven by the growing demand for enhanced guest experience, operational efficiency and cost reduction, the hotel industry in China is prioritizing digital transformation. Digital technologies, including robotic-based AI agents, have become essential tools for hotels seeking to stay competitive in an increasingly tech-savvy market. In 2022, the average digitalization rate, in terms of enterprise digital application level, of the hotel industry reached 44.3%, while the digitalization rate of catering industry was approximately 21.4%. The housekeeping industry had a digitalization rate of 4.1% in 2022, and the digitalization rate of elderly care services industry was only 1.3%. In 2023, 55.1% of hotels in China reported plans to increase their investment in technology, underlining the hotel scenario’s commitment to embracing innovation. This robust digital infrastructure enables seamless integration of robotic AI agents, which automate tasks like personalized check-ins, room management, and concierge services, aligning with the hotel industry’s tech-forward ethos. The combination of increased technological investment and established digital infrastructure positions the hotel industry as a key driver in the growth of the robotic-based AI agent market, solidifying their role as innovation leaders.





*Source: China Chain Store & Franchise Association (CCFA), Public Information Collection, Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market for Hotel Scenario

# Key Trends of China’s Hospitality Robotic-based AI Agent Market for Hotel Scenario

## *The application of hospitality robotic-based AI agents in various service aspects of hotel scenario in China is continuously deepening*

- Driven by the pursuit of enhanced operational efficiency and improved guest experience, the hotel industry in China is increasingly integrating robotic-based AI agents into a wide array of service segments beyond mere object delivery to include interactive functionalities with vending machines, room phones, front desks and food delivery services. This evolution aims to streamline workflows and enhance service consistency. Additionally, the incorporation of digital systems has enabled seamless data exchange between the hotel’s existing management systems and the robotic-based AI agents. As hardware and software capabilities advance, future applications of robotic-based AI agents may include guided tours, language translation, guest room cleaning and organization. This ongoing integration of robotic-based AI agents is a significant trend which is reshaping the landscape of the hotel industry in China, making it a key area for the expansion of the robotic-based AI agent market.

## *The transformation of hotels has opened up new revenue streams for hospitality robotic-based AI agent developers:*

- As the demand for automation technology of hotel scenario rises, hospitality robotic-based AI agent developers can diversify revenue sources by offering advanced robotic services. This service-based model presents new market opportunities. Developers can offer the latest technology to hotels through subscription model without requiring significant upfront investments from hotels. This approach not only broadens the revenue sources for developers but also helps mitigate their financial risks by reducing reliance on single customers and enabling greater flexibility to adapt to market demand fluctuations. Instead of one-off sales, developers can gain a steady revenue stream from multiple hotels. Moreover, the benefits of this new service model are mutual. Hotels can adapt to industry demand changes without bearing higher costs of purchasing and maintaining hospitality robotic-based AI agents. Hotels can adjust service usage per seasonal or specific needs, cutting long-term financial risks. This flexibility is crucial for resource-strapped small or independent hotels, enabling access to high-technology automation at lower cost.

## *Robots are extending from a service attribute to a traffic attribute, enhancing customer loyalty for hotels*

- The robotic-based AI agent market is evolving from robots primarily serving as service tools to strategic assets driving traffic management and customer loyalty in the hotel industry. Initially, robots in hotels were mainly deployed to automate tasks like room cleaning and luggage transport. However, as technology advances, hotels are increasingly leveraging robotic-based AI agents as a way to enhance guest engagement and encourage repeat visits. Robots now serve not just as functional assistants but as part of the guest experience, driving traffic by offering unique, memorable interactions. For example, some hotels use robots as part of their marketing strategy, where robots act as interactive greeters, escorts or concierge assistants, guiding guests to amenities, delivering personalized recommendations, or providing multilingual support, which adds a distinctive element to the hotel’s brand, fostering customer loyalty through innovation and convenience.



*Source: Frost & Sullivan*

# Overview of China's Hospitality Robotic-based AI Agent Market for Hotel Scenario

# Entry Barrier of China’s Hospitality Robotic-based AI Agent Market for Hotel Scenario

## *Sufficient industry know-how*

- Sufficient industry know-how is a significant barrier for the hospitality robotic-based AI agent market for hotel scenarios, as designing solutions tailored to hotel environments requires intimate knowledge of guest service workflows, operational efficiency, and evolving customer expectations. Hotels demand systems capable of seamless task execution, such as navigating dynamic spaces, managing guest interactions, and integrating with property management systems, all of which rely on real-world domain expertise. Established industry players with knowledge of the hotel scenario can better customize their platforms, ensure compliance with industry standards, and integrate with existing hotel operations, giving them a competitive edge. This creates a high entry barrier for new players, as a lack of such expertise can result in inefficient, poorly integrated or suboptimal robotic solutions that fail to meet the demands of hotel environments.

## *Leading technology development ability*

- In hotel scenarios, robotic-based AI agents primarily handle tasks such as delivery (e.g., transporting amenities or room service orders) and cleaning (e.g., automated vacuuming or disinfection), which require seamless integration with hotel infrastructure, such as elevator control systems and centralized dispatching platforms. These applications demand leading technological development ability, including advanced AI technologies, such as large models, multimodal learning and real-time decision-making algorithms, as well as robust hardware innovations such as modular designs and precision navigation, to ensure robots can operate autonomously, adapt to dynamic environments, and coordinate with other systems. The reliance on cutting-edge technology creates a strong barrier for new entrants, as developing and maintaining such sophisticated solutions requires significant investment, expertise and ongoing innovation, making technological leadership a key determinant of success in the hospitality robotics market

## *Adequate resources*

- The entry barriers of the hospitality robotic-based AI agent market for hotel scenario include the need for skilled talent to develop and maintain advanced systems, significant financial investment for R&D and reliable partnerships with suppliers and hotel clients, which requires expertise in AI, robotics engineering and software development, and is often scarce and expensive. High R&D costs and the necessity for continuous innovation to meet the unique demand of the hotel industry further elevate the challenges. Establishing strong supplier relationships is critical for sourcing high-quality components, while securing partnerships with hotels is essential for market validation and revenue generation. These resource-intensive requirements create significant hurdles for new entrants, making it difficult to compete with established players who have already secured these key assets



*Source: Frost & Sullivan*

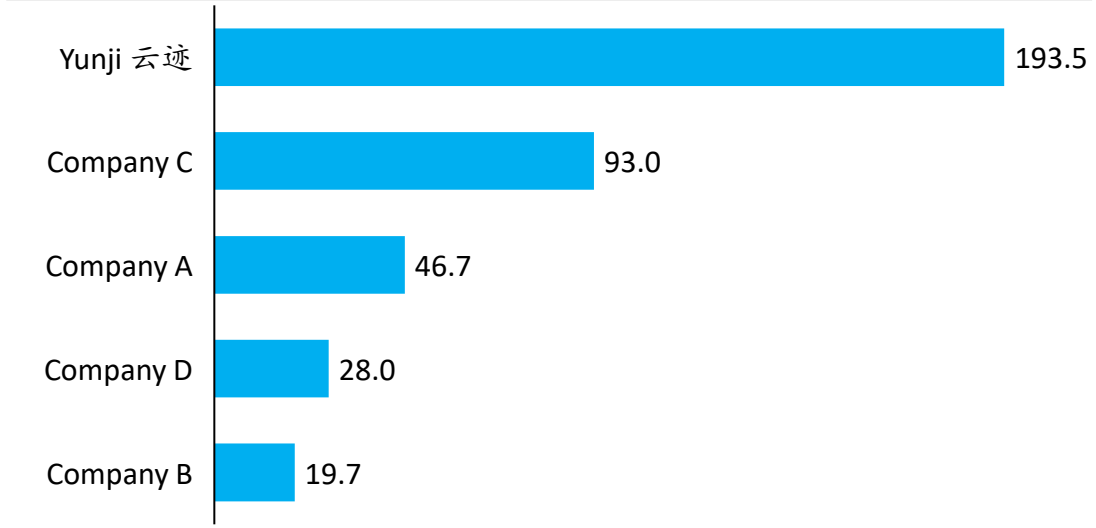
# Overview of China's Hospitality Robotic-based AI Agent Market for Hotel Scenario
# Competitive Landscape of China’s Hospitality Robotic-based AI Agent Market for Hotel Scenario

### Competitive Landscape of China’s Hospitality Robotic-based AI Agent Market for Hotel Scenario

The top five players in the hospitality robotic-based AI agent market for hotel scenario in China collectively accounted for a total market share of 27.4% in 2024 in terms of revenue generated in China from hotel scenario. Yunji was the largest player in the hospitality robotic-based AI agent market for hotel scenario in China in terms of revenue generated in China from hotel scenario in 2024, with a market share of 13.9%. The competitive landscape underscores the dynamic nature of the hospitality robotic-based AI agent market for hotel scenario in China, with companies jockeying for position and market share.

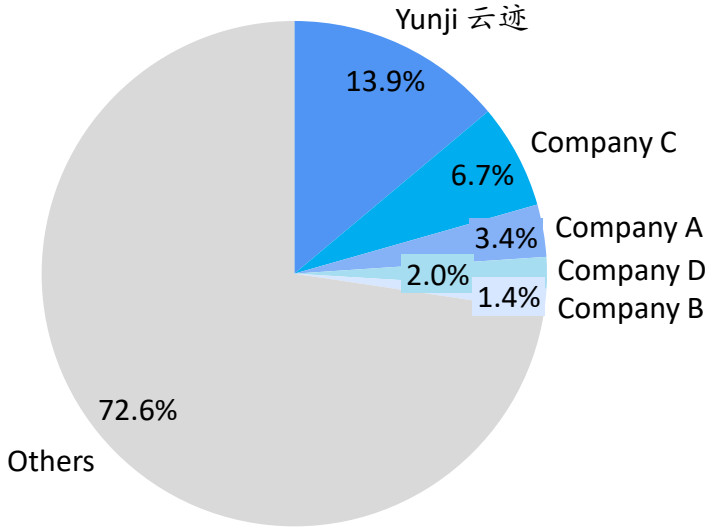
**Revenue of Major Players in China’s Hospitality Robotic-based AI Agent Market for Hotel Scenario***

Million RMB, 2024




**Market Share of China’s Hospitality Robotic-based AI Agent for Hotel Scenario**

Percentage, 2024




**Note: Revenue of each player is calculated on a grouped basis, including the revenue from sales of robot products, components and accessories, software services and robot rentals generated in China from hotel scenario*



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*Source: Expert Interview, Frost & Sullivan*

# Appendix

1. There is significant unmet demand in the B2C market. Taking the hotel industry as an example, in 2023, the operating revenue of national star-rated hotels reached RMB160.9 billion, marking a year-on-year increase of 36.6%
2. in Japan, the rapidly aging population and labor shortages create a strong need for robotics in healthcare, manufacturing and courier services
3. Run Series is among the first-generation of service robots to achieve large-scale commercialization.
4. it is a common commercial practice for customers, particularly those in the industries that deliver hospitality services in China, to settle payments with service robot providers through third-party payors. it is in line with industry norms for certain KA clients to utilize designated payment entities to settle payment with suppliers on behalf of their subsidiaries and franchise companies, thereby enhancing financial management.
5. Globally, company is the largest player in three-dimensional multi-layer environment
6. Company's robot is more stable than industry average
7. Globally, company is ranked the first in the robot market and AI agent market for hotel scenario in terms of revenue in 2023
8. Globally, Company is one of the pioneer in commercializing composite polymorphic robots
9. There are around 120-150 players in China's hospitality AI agent market, and around 70-100 players in China's hospitality robotic-based AI agent market

# Thanks !

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