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TIDE CENTRE

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AI STARTUPS VALUE CREATION BLUE PAPER

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PREFACE

OxValue.AI is delighted to share a new way of analysing and comparing privately-held global startups in this “AI Startups Value Creation Blue Paper”.

Amidst a reconfiguration of the global tech landscape caused, in part, by an expectation of transformation wrought by artificial intelligence, an extraordinary number of startups exploiting AI have risen to prominence, innovating rapidly and nimbly.

Accurately gauging their technological value is tricky, and drives the need for a method to solve this.

We use this paper to demonstrate the award-winning valuation model we have crafted at OxValue.AI, unveiling the top startups worldwide. The tool elucidates distinctions in value-driving factors between domestic and international AI enterprises. The report reveals that the AI industry is undergoing a fundamental paradigm shift—a comprehensive transition from the “Wow Factor” of early technical validation to the “Utility Factor” driven by commercial scalability.

However, this transition is taking place within a highly polarized global landscape. Currently, high-income countries account for 86% of global AI startups and 91% of venture capital, while low- and middle-income countries (excluding China and India) contribute less than 1% to global AI startup financing and notable model development. This concentration poses a fundamental challenge to inclusive global trade and development, potentially not only exacerbating the existing digital divide but also creating new barriers that hinder sustainable global economic development.

OxValue.AI continues to refine its capabilities to furnish industry leaders and policy makers with deeper insights and support the sustainable advancement of the AI sector.

Executive Summary

The AI Revolution at a Crossroads

Currently, the global artificial intelligence (AI) industry is at a historic turning point: annual investment has exceeded $400 billion and is projected to cross the $4 trillion mark within the next five years. Based on in-depth tracking and full-sample analysis of nearly 6,000 AI startups worldwide, OxValue.ai and the Institutes of Science and Development, Chinese Academy of Sciences (CASISD) jointly released the *Blue paper on AI Startup Value Creation (2025)*. The report reveals that the AI industry is undergoing a fundamental paradigm shift—a comprehensive transition from the "Wow Factor" of early technical validation to the "Utility Factor" driven by commercial scalability. However, this transition is taking place within a highly polarized global landscape. Currently, high-income countries account for 86% of global AI startups and 91% of venture capital, while low- and middle-income countries (excluding China and India) contribute less than 1% to global AI startup financing and notable model development. This concentration poses a fundamental challenge to inclusive global trade and development, potentially not only exacerbating the existing digital divide but also creating new barriers that hinder sustainable global economic development.

Key Findings

1. **Geographic Polarization and the "Two-Speed" Digital Economy**

   The global AI ecosystem exhibits a duopoly structure dominated by the United States and China. The US maintains an absolute lead, accounting for approximately 80% ($3.46 trillion) of global startup valuations, while China, as a unique second pole, has contributed 13% of the world's notable AI models and 66% of generative AI patent applications between 2014 and 2023. This concentration reflects the constraints of the World Bank's "4C" framework: Connectivity (high-quality internet access), Compute (access to graphics processing units (GPUs) and cloud infrastructure), Context (localized data and language/cultural adaptation), and Competency (retention of AI talent). For developing countries, the lack of these foundational elements may lead to their permanent exclusion from the upper tiers of the AI value chain.

2. **Technological Paradigm Shift: Opportunities for Leapfrogging**

   The industry is experiencing three key trends that present both opportunities and risks for developing nations:

   - **The Rise of AI Agents:** Evolving from "copilot" assistance to "autopilot" autonomy, AI agents with complex, multi-step reasoning capabilities represent the next frontier. However, their deployment requires large-scale infrastructure investment, which favors well-capitalized economies.
   - **Small Models and Edge Computing:** The proliferation of models with 1 billion to 7 billion parameters, optimized for local deployment on neural processing unit (NPU) devices, offers a viable path toward "Sovereign AI". With inference costs having dropped roughly 280-fold since 2022 (from $20 to $0.07 per million tokens), these highly efficient models enable developing countries to bypass reliance on centralized clouds, addressing privacy concerns and connectivity limitations.
   - **Embodied AI:** China's dominance in the hardware supply chain (accounting for 51% of global embodied AI startups) indicates a shift in the center of gravity for physical AI applications. This could provide the Global South with democratized access to robotics applications in manufacturing and agriculture.

3. **Market Rationalization and the Shift Toward Commercial Viability**

   Currently, the AI industry is transitioning from its early phase of "speculative potential" toward sustainable commercial implementation. As secondary markets increasingly return to rationality, the investment logic of capital markets is gradually shifting away from a singular focus on future revenue multiples, reverting to demands for tangible free cash flow and profit margins. This return to rationality indicates that the industry is poised to enter a consolidation phase. Capital will further concentrate on proven winners with demonstrated commercial capabilities, which could, in the short term, constrain financing for emerging ecosystems in developing regions.

Development Implications and Risks

Premature Deindustrialization and Labor Market Polarization

Unlike earlier technological waves, AI poses unique risks to developing economies: the automation of entry-level cognitive jobs (Business Process Outsourcing, basic coding, data entry), which have traditionally served as steppingstones on the development ladder. With 32% of surveyed companies anticipating job cuts due to AI integration, developing nations face "premature deindustrialization"—losing their labor cost advantages before achieving full economic development. This could undermine trade models based on service exports and manufacturing assembly, necessitating urgent workforce reskilling and adjustments to social safety nets.

Sovereign AI and Data Governance

The trend toward "Sovereign AI"—locally controlled infrastructure aligned with national laws and cultural contexts—reflects the intensifying geopolitics of data. While this fragmentation challenges global integration, it also creates opportunities for regional AI hubs and localized startup ecosystems. For members of the United Nations Conference on Trade and Development (UNCTAD), developing indigenous AI capabilities has become crucial to safeguarding economic sovereignty and ensuring AI systems reflect local linguistic diversity and cultural nuances (rather than relying on Anglo-centric training data).

Strategic Recommendations

To harness AI for inclusive and sustainable development, we suggest prioritizing:

1. Democratization of Compute and Infrastructure

- Establish regional AI compute alliances and cloud infrastructure to reduce dependence on hyperscale providers in the US and China.

- Support the deployment of edge computing and small model ecosystems to enable low-cost, low-latency AI applications in agriculture, healthcare, and education.

2. Human Capital and Capacity Building

- Implement targeted policies to curb the AI "brain drain" through competitive research grants and innovation ecosystems.
- Reform education systems to shift toward AI literacy and human-machine collaboration skills, emphasizing areas where human creativity and ethical judgment remain complementary to automation.

3. Contextualized AI Aligned with Sustainable Development Goals (SDGs)

- Foster South-South cooperation to develop sustainability-oriented AI applications, particularly in climate-resilient agriculture (where China already accounts for 43% of the global "AI + Agriculture" valuation), precision medicine, and scientific discovery.
- Promote open-source datasets and models that reflect local languages and contexts to reduce the "Context" barrier within the 4C framework.

4. Governance and Inclusive Trade Frameworks

- Develop international frameworks for cross-border data flows that strike a balance between innovation and sovereignty, allowing developing countries to participate in the global AI value chain without forfeiting data ownership.
- Address the "vendor financing" risks identified in the report, ensuring that infrastructure investments in developing countries do not lead to unsustainable debt cycles or technological lock-in.

Conclusion

The AI startup ecosystem is evolving from a technological race into a complex competition involving value capture across the infrastructure, talent, and application layers. While the current trajectory suggests a widening gap between AI "haves" and "have-nots", the shift toward highly efficient small models and specialized applications offers a narrow window for strategic intervention. We emphasize that without proactive policy actions to democratize access to compute, data, and capabilities, AI threatens to become a centrifugal force in the global economy, undermining decades of progress toward inclusive trade and development. The international community must act decisively to ensure that AI serves as a public good and a catalyst for the Sustainable Development Goals, rather than a new axis of global inequality.

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Part I Overview of AI Startups

1.1 Definition and Classification Framework of AI Startups

As we enter 2025, the global artificial intelligence (AI) industry stands at a decisive historical juncture. On the one hand, technological innovations represented by generative AI (GenAI) are penetrating the capillaries of the global economy at an unprecedented speed. In just three short years since the launch of ChatGPT, nearly 90% of international listed companies have claimed to apply AI technology in their operations (Singla et al., 2025). On the other hand, the market is undergoing profound structural adjustment, transitioning from an early stage of exploratory experimentation to a more demanding phase of scaled implementation and practical application.

However, this transformation is occurring within an extremely polarized global landscape. World Bank data paint an alarming innovation map: high-income countries account for 86% of global AI startups, 91% of venture capital funding, and 87% of notable AI models. Excluding China and India, other low- and middle-income countries, despite comprising 48% of the world's population, collectively contribute less than 1% to AI startup financing, patents, and model development. This "polarization" poses a fundamental challenge to inclusive global trade and development, not only potentially exacerbating the existing digital divide but also creating new barriers that hinder sustainable global economic development.

This White Paper is jointly published by OxValue.ai and the Institutes of Science and Development, Chinese Academy of Sciences (CASISD). Based on in-depth tracking and full-sample statistics of 5,181 AI startups worldwide, it aims to clarify the global landscape of the AI industry, the logic of value creation, and its impact on developing countries from a development policy perspective, thereby providing an empirical foundation for inclusive AI governance and South-South cooperation.

1.1.1 Definition of AI Startups

Artificial intelligence is not a single technical point, but rather a branch of computer science encompassing multiple technologies including Machine Learning, Deep Learning, Reinforcement Learning, and Generative AI. Its applications are extensive, including Natural Language Processing (NLP), Computer Vision (CV), and control systems, with the core goal of creating intelligent systems capable of simulating human cognitive abilities such as reasoning, learning, decision-making, and perception. To achieve global consensus on policy and regulation, the Organisation for Economic Co-operation and Development (OECD) has proposed an authoritative and widely accepted definition of an “AI system”: a machine-based system that can infer, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments, based on explicit or implicit objectives. The key to this definition lies in its “technological neutrality”—that is, it is not limited to specific implementation methods but focuses on the functionality of the system, thereby adapting to rapid technological iteration (OECD, 2025; OECD, 2023).

“Startup” is a unique organizational form, distinct from traditional small and medium-sized enterprises (SMEs), characterized by short establishment time, small scale, high scalability, and strong innovation (Shen et al., 2025; Spender et al., 2017):

- Short establishment time: The OECD and China’s National Bureau of Statistics typically define enterprises established within 5 or 10 years as “startups”.
- Small scale: The organizational scale is usually small, with few employees and initially limited revenue.
- Scalability: Their business models are designed with high scalability, meaning they can serve a growing customer base at very low marginal cost, typically reaching global markets through technology and the internet.
- Innovation: Startups are engines of innovation, creating entirely new products, services, or business models through intensive R&D activities.

Based on the above analysis, this report proposes the following definition for AI startups: enterprises established within ten years whose core technology or value proposition is built upon artificial intelligence technology, engaging in the development of AI algorithms or providing technical software and services to downstream industries.

This definition is both a semantic delineation and a valuation perspective. It inherently divides AI startups into two basic types: creators of AI capabilities and appliers of AI capabilities. The former belong to Deep Tech enterprises, whose core assets are intellectual property rights; the latter are typically B2B SaaS, PaaS, or service-oriented companies, whose core assets lie in customer relationships and market penetration. Furthermore, this definition reveals an inherent contradiction faced by AI startups: startups have traditionally been considered light-asset, agile operations, yet enterprise-grade AI development and deployment possess inherent complexity, requiring large-scale capital investment in data infrastructure, computing power, and professional talent. This means AI startups must maintain the agility and experimental spirit of startups while bearing the capital-intensive infrastructure construction of mature enterprises. This tension results in AI startups typically having higher initial capital requirements and longer R&D cycles compared to traditional software startups, which profoundly affects their financing rhythm, burn rate, and ultimate valuation models.

1.1.2 Classification of AI Startups

Systematic classification of AI startups is a prerequisite for horizontal valuation comparison and identification of value drivers. However, the industry has not yet formed a unified classification standard. Current mainstream perspectives for classifying AI enterprises include the following:

Perspective One: AI Value Chain Model (UBS, 2025)

This is a common technical layering perspective, dividing the market into different layers, including:

- Infrastructure/Enabling Layer: Companies providing foundational hardware (such as

semiconductors, servers) and cloud computing platforms.
- Intelligence/Platform Layer: Companies developing core AI foundation models (such as large language models) and data infrastructure.
- Application Layer: Companies embedding AI tools into products and services facing end users.

Perspective Two: Business Model Framework (Oracle, 2025)
- Core AI: Developing technology for the AI creation process itself, independent of industry. This belongs to foundational innovation in the AI field, concentrated at the algorithm level. Innovation entities include university research institutions, spin-offs, and R&D departments of innovative enterprises.
- Application AI: Developing technology for executing specific horizontal tasks across industries.
- Industry AI: A subdivision of Application AI, aiming to apply AI to solve specific business problems in particular vertical domains.

Perspective Three: Application Scenario Governance (State Council of the People's Republic of China, 2025)
The "Opinions on Deepening Implementation of the 'AI+' Action" previously issued by the State Council adopts a top-down national strategic perspective, emphasizing driving economic and social development through the extensive application of AI. The plan clarifies the deep integration of AI with six key areas: science and technology, industrial development (industry, agriculture, etc.), consumption quality improvement, people's livelihood (medical care, education, etc.), governance capacity, and global cooperation. The core of this framework is "demand-pull"—that is, the development and implementation of AI technology are driven by application needs from various economic sectors.

For in-depth valuation analysis, this report synthesizes the above perspectives to propose a dual-layer classification framework. This framework first distinguishes AI startups into two major categories: "AI Algorithm Development" and "AI-Enabled Application Scenarios" and then provides subdivisions within each category. This structure aims to clearly isolate different risk characteristics and value drivers.

Category One: AI Algorithm Development

This category includes startups whose core business is the R&D and commercialization of novel AI algorithms, models, and platforms. Their output is the technical capability itself, rather than solutions directly facing end users. These enterprises correspond to “Core AI” in the business model framework and the “Infrastructure/Intelligence Layer” in the value chain. This report further divides them into two frontier sub-domains:

- Sub-category A: Embodied Intelligence. Embodied Intelligence involves integrating AI systems with physical entities (such as robots), enabling them to actively perceive, reason, and interact in the physical world. Unlike traditional machine learning systems where users provide data, embodied intelligence actively collects data through its own sensors, organizes training, and makes decisions. Strictly speaking, embodied intelligence and AI agents intersect. Startups in this domain focus on developing humanoid robots (such as Agility Robotics) or providing general autonomy models for various physical systems (such as Field AI).
- Sub-category B: AI Agents. An AI agent is a software system capable of perceiving the environment, reasoning and planning, and autonomously executing complex multi-step tasks with minimal human intervention to achieve objectives, based on reinforcement learning and large language models. The term “Agent” originates from traditional control science and modern reinforcement learning, representing a paradigm shift from simple task automation to goal-oriented complex problem solving. Agents include both entities (Actors) that make decisions in the robotics field and experts in large language models—each expert can be a learning and decision-making system, either a neural network with added attention mechanisms (Transformer) or a combination of multiple networks.

Category Two: AI-Enabled Key Application Scenarios

This category includes startups that use existing or proprietary AI technology to create software or services for specific vertical markets. This aligns with “Industry AI” in the business model framework and the spirit of the “AI+” Action Plan. This report further divides them into four frontier sub-domains:

- Sub-category C: AI + Education. Such startups develop AI-driven platforms to create personalized learning experiences, including adaptive learning platforms that can adjust curricula according to individual student needs, intelligent tutoring systems, and automated grading tools. The main drivers of market growth come from demand for more efficient and effective educational outcomes, with broad prospects.
- Sub-category D: AI + Scientific Discovery. Such startups provide AI platforms to accelerate scientific research and development (R&D) processes, with application scenarios covering literature analysis, experimental design, data analysis, product prediction, etc., mostly used in biology, medicine, and environmental fields. Typical application cases include Google DeepMind's AlphaFold (generative AI based on attention mechanisms for predicting protein structures) and Microsoft's Aurora (predicting weather changes). Fundamental science domains include Physics-Informed Neural Networks (PINN), deep learning in finite element simulation (such as fluid mechanics, solid mechanics, materials), Bayesian optimization-based biological experimental design (Optimal Experimental Design), and molecular dynamics simulation. The core value of this domain lies in empowering scientists to achieve breakthrough discoveries faster.
- Sub-category E: AI + Healthcare. AI is widely applied in tasks such as target prediction, drug simulation, biopharmaceuticals, image processing, disease diagnosis, precision medicine, treatment planning, and administrative automation. This domain is mainly based on technologies such as machine learning, reinforcement learning, computer vision, and generative AI, and has already seen a large number of startups emerge.
- Sub-category F: AI + Agriculture. Such startups focus on precision agriculture, with application scenarios including robotic automation, crop detection, pest control, etc., aiming to use AI to optimize resource use and increase crop yields.

1.2 Current Development Status of AI Startups: A "Two-Speed" World

The global AI landscape and AI startup ecosystem exhibit distinct "Two-Speed" dynamics: the speed of technological iteration and diffusion is extremely fast, but the capture of commercial value is highly concentrated. This imbalance has profound implications for developing countries' technology acquisition, industrial upgrading, and job creation.

1.2.1 Technological Iteration: Flywheel Effect and Marginalization Risk

Underlying AI technology is in a critical stage of “flywheel iteration”. Continuous optimization of algorithm models (such as MoE architecture, sparse attention mechanisms) has significantly improved intelligence output per unit of computing power; exponential growth in hardware performance has doubled GPU performance annually, while unit computing costs have dropped precipitously. For example, NVIDIA’s next-generation Rubin platform GPUs are expected to be hundreds of times more powerful than the Hopper platform, with unit performance cost reductions potentially exceeding 90% (SPDB International Securities Research Department, 2025).

However, the distribution of benefits from this technological progress is extremely uneven. Goldman Sachs points out that the current AI industry boom is largely supported by “Vendor Financing”: chip giants invest in cloud service providers, cloud service providers invest in model startups, and the funds raised by startups ultimately flow back to purchase chips and cloud services (Goldman Sachs, 2025). This cycle masks insufficient real demand in end markets and further locks developing countries into the bottom of the value chain—as suppliers of raw materials and low-end assemblers, rather than participants in technological innovation.

1.2.2 Market Application: Crossing the “Pilot Trap”

McKinsey’s 2025 global survey shows that 88% of surveyed organizations are using AI (see Figure 1-1), but only 33% of enterprises have successfully moved AI projects from the pilot phase to full enterprise-wide scaled application, and only 39% of enterprises report that AI has had a substantive impact on their EBIT. This dilemma of “easy adoption, difficult scaling” is particularly pronounced in developing countries: lacking digital infrastructure, high-quality datasets, and localized application scenarios, many developing countries’ AI applications remain stuck at the proof-of-concept (POC) stage, unable to translate into sustainable commercial value.

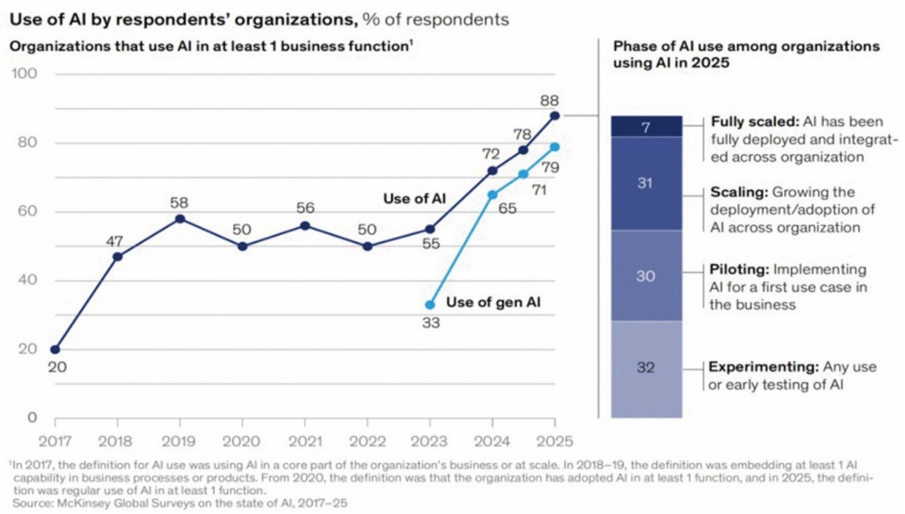

Figure 1-1 2025 AI Adoption Rate and Adoption Stage

1.2.3 Capital Valuation: Market Rationalization and the Financing Gap

Global annual AI investment has exceeded $400 billion and is projected to cross the $4 trillion mark within the next five years (Shenwan Hongyuan Securities Research Institute, 2025). However, this torrent of capital is highly concentrated in high-income countries such as the United States and China. Goldman Sachs notes that as secondary markets begin to rationalize, the valuation logic of the AI industry is undergoing a transformation from "imaginary space" to commercial implementation—that is, from expected pricing based on future revenue multiples, gradually returning to substantive demands for free cash flow and profit margins. This rationalization of investment logic poses a dual threat to developing countries' AI ecosystems: on the one hand, against the backdrop of capital's accelerating concentration in leading enterprises with demonstrated commercial closed-loop capabilities, local startups find it even harder to obtain early-stage venture capital; on the other hand, developing economies highly dependent on external financing face the risk of sudden capital withdrawal, easily falling into unsustainable debt cycles (Goldman Sachs, 2025).

Table 1-1 Financing of Leading AI Startups at Home and Abroad in the Past Two Years

Date	Company	Funding	Valuation
Sep-25	Anthropic	US$13B Series F led by ICONIQ; co-led by Fidelity and Lightspeed	US$183B
Jul-25	MiniMax	~US$300M round led by Alibaba	>US$4B
Jul-25	Zhipu AI	RMB 1B strategic round led by Pudong Venture Capital	NA
Apr-25	SSI	US$2B led by Greenoaks; Alphabet and Nvidia participated	US$32B
Apr-25	OpenAI	Up to US$40B led by SoftBank (initial close ~US$10B)	US$300B
Mar-25	Anthropic	US$3.5B Series E led by Lightspeed	US$61.5B
Sep-24	SSI	US$1B led by Sequoia	US$5B
Sep-24	OpenAI	Planned raise of US$6.5B	US$157B
May-24	Zhipu AI	US$400M Series C from Prosperity7 Ventures	RMB 20B
May-24	Scale AI	US$1B raised; new investors included Amazon and Meta	US$13.8B
May-24	xAI	~US$6B Series B	US$18B
May-24	Kimi (Moonshot AI)	Cumulative ~US$800M from Alibaba over its FY2024	US$2.5B
Apr-24	Anthropic	Amazon completed total US$4B commitment (US$1.25B in Sep 2023 + US$2.75B follow-on)	US$18.4B
Nov-23	01.AI (Lingyiwanwu)	US$1B round led by Alibaba Cloud	NA
Oct-23	Anthropic	US$500M round led by Google, with an additional US$2B committed thereafter	NA
Apr-23	OpenAI	Microsoft led ~US$10B; multiple PE investors added >US$300M	US$80B

1.2.4 Innovation Polarization: Structural Barriers Under the 4C Framework

The “4C” framework proposed by the World Bank reveals the structural roots of the polarized distribution of global AI startups (World Bank, 2025):

- Connectivity: Although global internet coverage has improved, AI applications have demanding requirements for network quality. Multimodal real-time interactive functions require low-latency, high-bandwidth connections, which remain a luxury in many developing countries.
- Compute: Computing power has become a core resource determining national and corporate competitiveness, but its distribution is extremely uneven. The United States possesses 20,000 times as many secure internet servers as low-income countries (see Figure 1-2).
- Context: General-purpose large models are typically trained on English internet data, lacking deep understanding of specific cultures, languages, or vertical industries. This "context deficit" causes developing countries to face dilemmas of incompatibility when applying AI.
- Competency: AI talent is flowing to high-income countries at an unprecedented speed, exacerbating the "brain drain" in developing countries. OECD surveys show huge gaps in AI literacy among public sector and regulatory agencies, which is particularly dangerous in developing countries with weaker governance capacity (OECD and World Economic Forum, 2025).

These 4C barriers are not technical but political-economic. They reflect long-standing unequal power structures in the global digital governance system that need to be addressed through international development cooperation and structural reform.

FIGURE 1.2 AI innovation and adaptation activities, by country income group

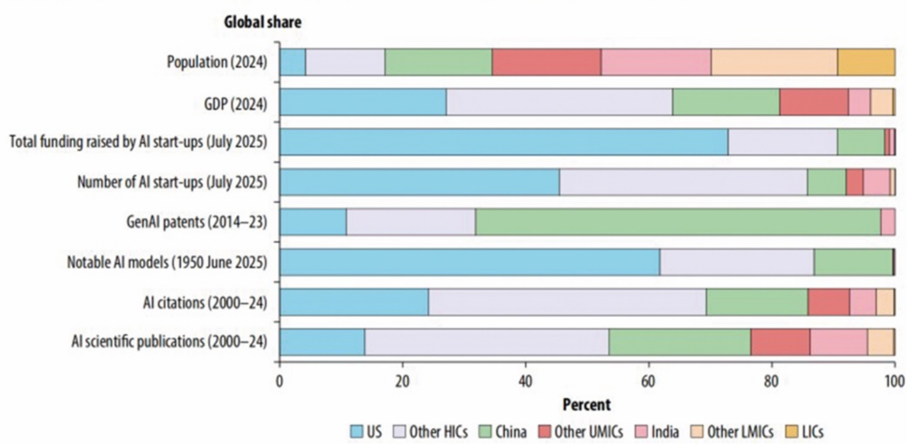

Figure 1-2 Distribution of AI Innovation Activities Across Different Regions

(Note: HICs refers to high-income countries, UMICs to upper-middle-income countries, LMICs to lower-middle-income countries, and LICs to low-income countries. Country classifications are from the World Bank 2024 classification (World Bank, 2025).)

1.3 Development Trends of AI Startups: Opportunities and Risks for Developing Countries

The AI industry is transitioning from the “Wow Factor” to the “Utility Factor”. This transformation brings both opportunities for leapfrog development and risks of further marginalization for developing countries.

1.3.1 The Rise of AI Agents: Automation and Employment Polarization

AI agents (Agentic AI) are evolving from “Copilot” assistance to “Autopilot” autonomy, capable of independently completing complex multi-step workflows. McKinsey points out that only when AI shifts from assisting humans to performing their tasks can enterprises truly unlock trillions of dollars in productivity value (Yee et al., 2025).

However, for developing countries, this trend carries dual dangers. First, AI agents are best at automating entry-level cognitive work—Business Process Outsourcing (BPO), basic coding, data entry, etc.—which have traditionally served as the “ladder” for developing countries to climb the economic development curve. The World Bank warns that this may lead to “premature de-industrialization”: developing countries lose their labor cost advantages before achieving full economic development (World Bank, 2025). Second, the deployment of agents requires large-scale infrastructure investment, which will further consolidate the leading position of capital-abundant economies.

1.3.2 “Small Models” and Edge Computing: A Viable Path for Leapfrogging

This is the most critical development opportunity identified in this report. As high-performance NPUs are widely integrated into smartphones and PCs, “small models” with parameter counts between 1B and 7B already have the capability to run directly on local devices. This transformation not only reduces inference costs to near zero but also fundamentally solves the chronic problem of privacy leakage.

For developing countries, “small models” are a viable path to bridge the computing gap and achieve inclusive AI. Between 2022 and 2024, the cost to invoke models reaching GPT-3.5-level performance dropped from approximately $20 to about $0.07 per million tokens, a decrease of roughly 280 times (see Figure 1-3), making possible low-cost, low-latency AI applications in agriculture, healthcare, and education. This “edge AI” model reduces dependence on centralized cloud infrastructure, giving developing countries the possibility of “digital sovereignty”.

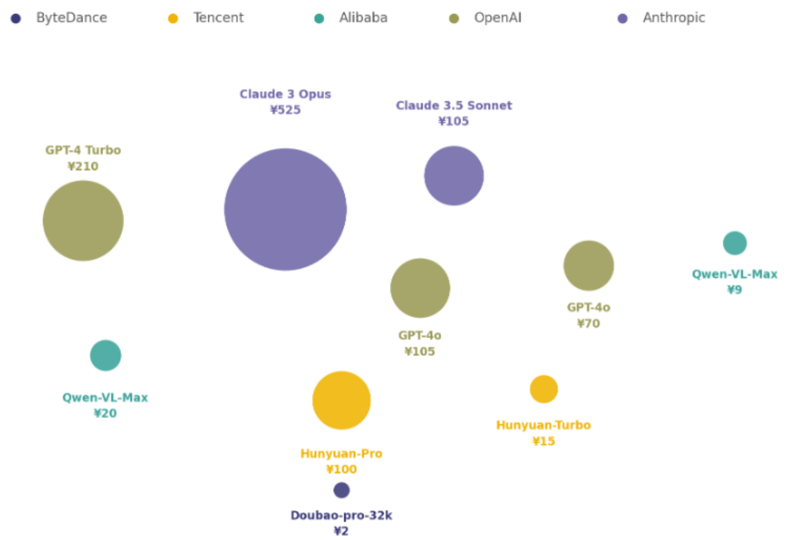

Figure 1-3 Cost of AI Foundation Large Models

1.3.3 Cost Reduction and Revenue Growth and Scenario Expansion: Redefining Value Creation

The sharp decline in AI model inference and deployment costs theoretically lowers the threshold for building AI applications. However, market research shows that approximately 75% of generative AI cost-reduction projects fail to achieve expected results. This indicates that startups merely helping clients “reduce costs” easily fall into the quagmire of price wars, while those that can help clients “increase revenue” can gain pricing power.

For developing countries, this means AI strategy must shift from “efficiency-oriented” to “growth-oriented”—using AI to create new revenue models and increase per-unit economic output, rather than merely replacing labor costs. In the AI + Agriculture domain, Chinese enterprises have already demonstrated the feasibility of this “revenue growth” path through practical applications such as drone plant protection and smart supply chains.

1.3.4 Sovereign AI: A New Paradigm for Data Governance

Out of considerations for data security and geopolitics, governments are increasingly unwilling to rely on US data centers connected via undersea cables. The “Sovereign AI” trend is rising globally—that is, establishing state-funded computing infrastructure aligned with local laws and cultural norms.

This fragmentation challenges global integration but also creates opportunities for regional AI hubs and localized startup ecosystems. Hence, developing indigenous AI capabilities has become crucial to safeguarding economic sovereignty and ensuring AI systems reflect local linguistic diversity and cultural characteristics (rather than relying on Anglo-centric training data).

1.3.5 Labor Market Polarization Effects: An Urgent Challenge for Development Policy

McKinsey data show that 32% of respondents expect their enterprise employee numbers to decrease due to AI in the coming year, while only 13% believe they will increase (Singla et al., 2025). Unlike earlier technological waves, AI poses a unique “ladder removal” risk to developing economies: it automates precisely those entry-level jobs that once helped developing countries integrate into global value chains.

This requires urgent workforce reskilling and adjustments to social safety nets. Education systems must shift toward AI literacy and human-machine collaboration skills, emphasizing areas where human creativity and ethical judgment remain complementary to automation.

1.4 Value Creation Analysis of AI Startups

1.4.1 Global and China Market Overview

Based on in-depth tracking and full-sample statistics of 5,181 AI startups globally, the current AI market exhibits a highly concentrated competitive landscape, with clear echelon differentiation at both the national and city levels (see Figure 1-4). The vast majority of market share and commercial value is concentrated in a few leading countries and their core cities—the top ten countries by ranking have gathered the core strength of the global AI industry, with a total valuation of $4,281.8 billion, accounting for the vast majority of the global total, showing a strong “head effect”.

At the national level, the United States occupies an absolutely dominant position with 1,788 listed companies and a total valuation of approximately $3.46 trillion. Its total valuation accounts for nearly 80% of the global sample total, with an average company valuation as high as $1.935 billion, demonstrating its profound industrial foundation in AI and extremely high capital value density. China ranks second globally in quantity with 679 companies, with a total valuation of approximately $623 billion and an average valuation of approximately $917 million. Although China has a significant scale advantage in the number of enterprises, its average valuation is only about 47% of that of the US, showing there is still considerable room for catch-up in value creation per enterprise. The United Kingdom (175 companies, approximately $66.8 billion), Germany (85 companies, approximately $31.2 billion), France (66 companies, approximately $25 billion), and Canada (75 companies, approximately $23.9 billion) constitute the second echelon. While they possess certain industrial scale, there is a significant gap in valuation volume compared with the US and China. Notably, Israel, with 115 enterprises and an average valuation of $138 million, demonstrates extremely high innovation activity in its startup ecosystem; while the UAE, although only 11 enterprises entered the rankings, has an average valuation as high as $903 million, reflecting the effectiveness of its strategy for cultivating high-value leading enterprises.

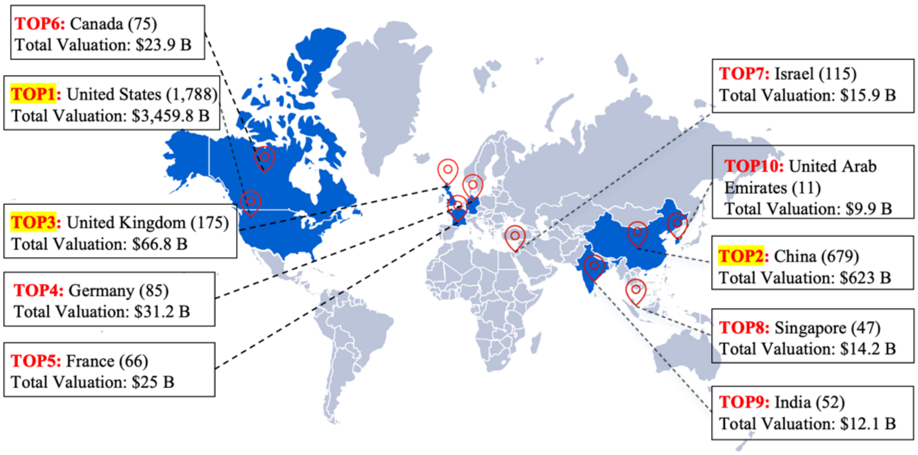

Figure 1-4 Top 10 Countries/Regions by Global AI Startup Valuation

The geographic agglomeration characteristics of innovation resources are even more pronounced at the city level (see Figure 1-5). The top ten cities globally by valuation collectively contributed approximately $2.68 trillion in valuation, accounting for 61.7% of the global total. These ten cities are entirely dominated by the United States (7 cities) and China (3 cities), with no cities from other countries making the list. San Francisco stands as the absolute global core, contributing $1.23 trillion in valuation with 392 enterprises, with an average valuation as high as $3.13 billion, far ahead of other cities. New York (241 companies, $381.4 billion) follows closely. Beijing, as the leader of China's AI industry, with 194 enterprises and a total valuation of $286.7 billion, has surpassed core Silicon Valley cities such as Burlingame and Palo Alto to strongly rank third globally. This data indicates that Beijing is not only China's innovation center but also a "third pole" with considerable weight in the global AI landscape. Shanghai (6th globally) and Shenzhen (7th globally) in China also entered the top ten, joining Burlingame, Palo Alto, Mountain View, Sunnyvale, and Boston in the US to constitute the core nodes of global AI innovation.

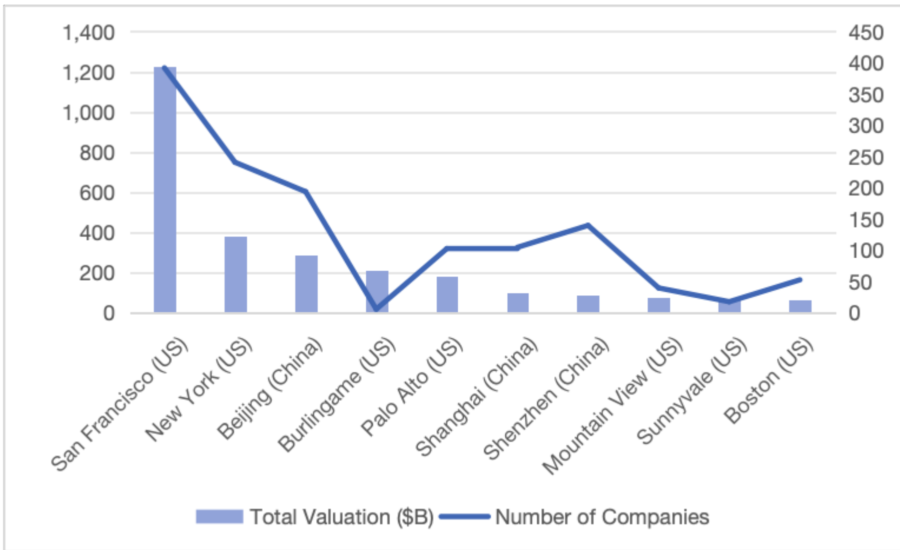

Figure 1-5 Top 10 Cities by Global AI Startup Valuation

Compared with the global landscape, the China AI market exhibits a development trend of "leading scale, catching up in value". The average valuation of Chinese enterprises ($917 million) is approximately 47% of the US level ($1,935 billion), overall showing characteristics of a large number of enterprises but relatively low per-unit value density. This aligns with the Chinese market's development stage, which focuses more on application-layer innovation and scenario implementation. Geographically, the China market shows a "tripod" pattern with Beijing as the leader and Shanghai and Shenzhen as the two wings (see Figure 1-6). These three cities also rank in the top ten of the global city valuation list, demonstrating the global competitiveness of China's core city clusters: Beijing is undisputedly China's premier AI city, with 194 enterprises and a total valuation of $286.7 billion, with an average valuation of $1.48 billion. Globally, Beijing's total valuation ranks third, behind only San Francisco and New York, and is the domestic highland where R&D resources and unicorns are most concentrated. Shanghai contributed $99.4 billion in valuation with 105 enterprises, with an average valuation of $946 million, closely chasing Beijing in high-quality development. Shenzhen ranks second domestically in number of enterprises (140), showing strong entrepreneurial vitality, but its total valuation ($87.6 billion) and average valuation ($626 million) are slightly inferior to those of Beijing and Shanghai, reflecting that it consists more of small and medium-sized application innovation enterprises. Hangzhou, as the fourth pole, has consolidated its position with 87 enterprises and $59.3 billion in valuation. Overall, Beijing, Shenzhen, Shanghai, and Hangzhou collectively account for approximately 77% of enterprise numbers and 85% of total valuation in the China market, showing extremely strong geographic agglomeration effects and leading roles of head cities. If expanded to the Top 10 cities (including Guangzhou, Suzhou, Nanjing, Chengdu, Hefei, Zhuhai), their total valuation share reaches 94.8%. This indicates that the value of China's AI industry is almost entirely defined by these ten central cities, with other regions still in a following and cultivation stage.

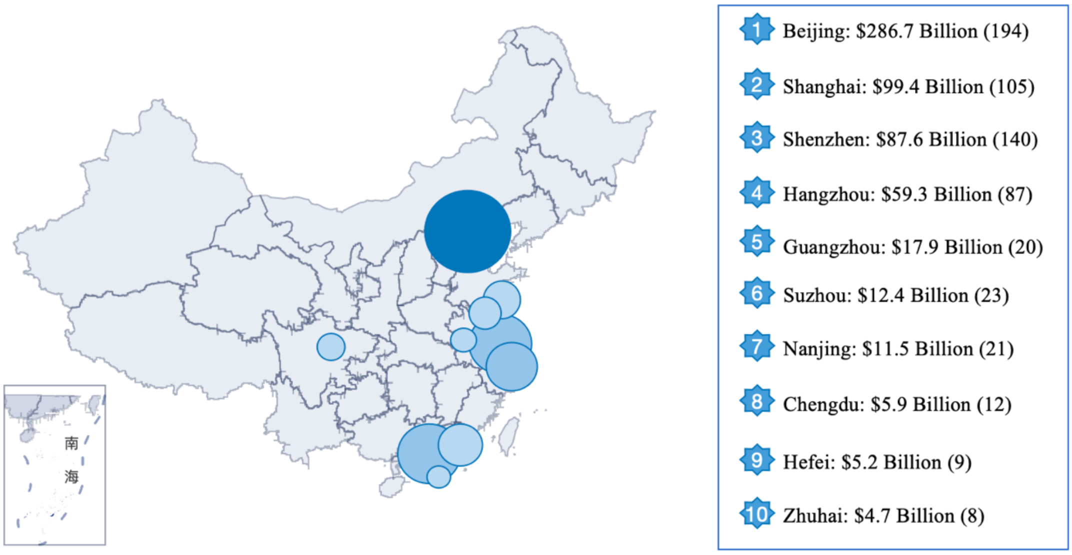

Figure 1-6 Top 10 Cities by China AI Startup Valuation

1.4.2 Representative Enterprises

According to statistics shown in Table 1-2 and Table 1-3, the 2025 global and China AI startup Top 30 lists overwhelmingly reflect that the artificial intelligence industry is at a historic turning point, crossing from "perceptual intelligence" to "generative intelligence" and "embodied intelligence". From the overall valuation dimension, the average valuation of global AI Top 30 enterprises has soared from $10.18 billion last year to $47.805 billion, an increase of nearly 3.7 times; the average valuation of China AI Top 30 enterprises has also grown from $2.051 billion last year to $8.25 billion, achieving approximately 4-fold growth. This astonishing growth data indicates that global capital is gathering in the leading enterprises with unprecedented force, and the AI industry has moved from the early “hundred flowers blooming” stage into the “deep water zone” dominated by giant unicorns.

Table 1-2 List of Global AI Startups (Top 30)

Average Value: $47.805 Billion USD	
Company Name	**Sub-Sector / Domain**
Anduril Industries, Inc.	Defense Technology / Intelligent Defense Systems
Anthropic PBC	Generative AI / Large Language Models (LLM)
Anysphere, Inc.	AI Programming Tools (Cursor)
Applied Intuition Inc.	Autonomous Driving Simulation and Testing Software
Astera Labs, Inc.	AI Infrastructure / Connectivity Chips
Beijing Kuaishou Technology Co., Ltd.	Content Community / Generative AI
Blockratz, Inc.	Blockchain AI / FinTech
Cambricon Technologies Corporation Limited	AI Chips / Processors
Cognition Labs, Inc.	AI Software Engineer (Agent)
CoreWeave Inc.	AI Cloud Infrastructure (GPU Cloud)
Crusoe Energy Systems Inc.	Green Computing Power / Cloud Computing
Figure AI, Inc.	Humanoid Robots / Embodied AI
Helsing GmbH	Defense AI / Software-Defined Defense
Infinite Reality, Inc.	Metaverse / Immersive AI
Kalshi, Inc.	Prediction Markets / FinTech
Mercor Inc.	AI Recruitment and Human Resources (HR)
Mistral AI SAS	Generative AI / Large Language Models
Moore Threads Intelligent Technology (Beijing)	Full-Featured GPU Chips
OpenAI, L.L.C.	Artificial General Intelligence (AGI) / Large Models
OpenEvidence, LLC	Medical AI / Clinical Decision Support
Perplexity AI, Inc.	AI Search Engine
Poolside SAS AI	AI Programming Assistance / Code Generation
Reflection AI, Inc.	AI Programming / Autonomous Agents
Safe Superintelligence Inc.	Superintelligence / AI Safety
Scale AI, Inc.	AI Data Annotation and Infrastructure
Shanghai SenseTime Intelligent Technology Co., Ltd.	Computer Vision / Large Models
Surge AI, Inc.	High-Quality Data Annotation / RLHF
VAST Data, Inc.	AI Data Storage Platform
Wiz Holdings Pte Ltd	Cloud-Native Security / AI Security

xAI Corp.	Generative AI / Large Language Models

* Sorted alphabetically by company name

Table 1-3 List of China AI Startups (Top 30)

Average Value: $8.25 Billion USD	
Company Name	**Sub-Sector / Domain**
Beijing Baichuan Intelligent Technology Co., Ltd. (Baichuan AI)	Generative AI / Large Language Models
Beijing Chusudu Technology Co., Ltd. (Momenta)	Autonomous Driving / Smart Mobility
Beijing Galaxy General Robot Co., Ltd. (Galbot)	Embodied AI / Robotics
Beijing Kuaishou Technology Co., Ltd.	Content Community / Generative AI
Beijing Moonshot AI Technology Co., Ltd.	Generative AI / Large Language Models
Beijing Qudong Technology Co., Ltd. (VirtAITech)	AI Computing Power Virtualization / Resource Pooling
Beijing Pony.ai Technology Co., Ltd.	Autonomous Driving (Robotaxi)
Beijing Volcano Engine Technology Co., Ltd.	AI Cloud Services / Intelligent Growth
Beijing Wuyi Shijie Digital Twin (51WORLD)	Digital Twin / Metaverse
Beijing Zhipu Huazhang Technology Co., Ltd. (Zhipu AI)	Generative AI / Large Language Models
Cambricon Technologies Corporation Limited	AI Chips / Processors
CloudMinds (Beijing) Co., Ltd.	Cloud Robotics
CloudWalk Technology Group Co., Ltd.	Computer Vision / Industry Solutions
Guangzhou WeRide Technology Co., Ltd.	Autonomous Driving (Robotaxi/Bus)
Hangzhou DeepSeek (DeepSeek)	Generative AI / Open-Source Large Models
Hangzhou Unitree Technology Co., Ltd.	Quadruped Robots / Humanoid Robots
Inceptio Technology (Shanghai) Co., Ltd.	Autonomous Driving for Trunk Logistics
MetaX Integrated Circuit (Shanghai) Co., Ltd.	High-Performance GPU Chips
Moore Threads Intelligent Technology (Beijing) Co., Ltd.	Full-Featured GPU Chips
Shanghai Biren Intelligent Technology Co., Ltd.	General-Purpose GPU Chips
Shanghai Enflame Technology Co., Ltd.	Cloud AI Computing Chips
Shanghai Iluvatar CoreX Semiconductor Co., Ltd.	General-Purpose GPU (GPGPU)
Shanghai Renyimen Technology Co., Ltd. (Soul)	Social AI / Intelligent Recommendation
Shanghai SenseTime Intelligent Technology Co., Ltd.	Computer Vision / Large Models

Shanghai Stepfun Intelligent Technology Co., Ltd.	Multimodal Large Models
Shanghai Xiaodu Artificial Intelligence Co., Ltd.	Smart Hardware / AIoT
Shanghai Xiyu Jizhi Technology Co., Ltd. (MiniMax)	Generative AI / Virtual Companionship
Shenzhen Jingtai Technology Co., Ltd. (XtalPi)	AI Drug Discovery (AIDD)
Terminus Technology Group Co., Ltd.	AIoT / Smart City
Zhiyuan Innovation (Shanghai) Technology Co., Ltd. (Agibot)	Humanoid Robots / Embodied AI

*Sorted alphabetically by company name

The global list is mainly driven by super-unicorns such as OpenAI, xAI, and Anthropic, showing capital's extreme enthusiasm for Artificial General Intelligence (AGI) and underlying computing infrastructure. Infrastructure enterprises represented by CoreWeave and Astera Labs, as well as application-layer disruptors such as Cognition Labs, occupy prominent positions. In contrast, the China list shows characteristics of "hard technology" and "soft applications" advancing side by side. It not only gathers large model "new forces" such as Zhipu AI and Moonshot AI but also covers a large number of domestic GPU chip manufacturers such as Moore Threads and Biren Technology, highlighting China's strategic determination toward autonomous and controllable computing power under external pressure. At the same time, the inclusion of Figure AI (global) and Zhiyuan Robotics, Unitree Technology (China) marks embodied intelligence's formal entry into the top-tier track.

Compared with the 2024 list (OxValue, 2024), this year's list has undergone significant changes in company types, sub-sector distribution, and valuation logic. In the global list, general large model enterprises represented by OpenAI, Anthropic, and xAI still firmly occupy core positions, constituting the "super brain" of the industry; but the most significant change is the strong rise of "AI infrastructure" and "vertical agent" companies. Compared with 2024, a large number of new enterprises focused on computing optimization and data have been added, such as CoreWeave (AI cloud infrastructure), Astera Labs (connectivity chips), and VAST Data (storage), replacing some early application-layer SaaS companies with shallow moats. Meanwhile, the selection of AI programming and Agent companies such as Cognition Labs (software engineer Agent) and Poolside marks AI's crossing from assisting content generation to "replacing complex mental labor". In addition, the inclusion of defense AI enterprises such as Anduril and Helsing also reflects the sharply increased strategic value of AI technology in national security under the geopolitical background.

The China Top 30 list shows distinctive characteristics of "new and old kinetic energy conversion" and "hard technology breakthrough". Different from 2024's pattern dominated by computer vision (CV) "Four Little Dragons", this year's list sees "generative AI new forces" represented by Moonshot AI, Zhipu AI, Baichuan Intelligence, DeepSeek, and StepFun fully occupying the center stage and becoming new valuation highlands. Meanwhile, established AI enterprises such as SenseTime and CloudWalk Technology remain on the list, but their business focus has clearly shifted toward large models and industry solutions. Particularly noteworthy is that the list has added a large number of chip and embodied intelligence enterprises. The collective inclusion of GPU manufacturers such as Moore Threads, Biren Technology, and MetaX, as well as the emergence of robotics companies such as Unitree Technology, Galbot, and Zhiyuan Innovation, shows that China's AI industry is exerting force bidirectionally along "bottom-layer computing autonomy" and "top-layer application physicalization". There are fewer pure internet-model AI application companies and more "hard technology" unicorns with core technology barriers. Although the average valuation of Chinese enterprises ($8.25 billion) still is very far in absolute terms from the global average, they show extremely strong resilience in the degree of integration with physical industries such as chip manufacturing and robotics hardware.

In the intelligent driving field, the global and China lists show completely different development paths and value logics. In the global Top 30 list, the representative enterprise related to intelligent driving is mainly Applied Intuition, which focuses on simulation testing software toolchains for autonomous driving rather than directly operating vehicle fleets. This reflects that after the commercialization of L4 autonomous driving encountered obstacles, global capital tends to prefer the more deterministic "selling shovels" model—that is, toolchains and infrastructure services.

In contrast, the intelligent driving sector in the China list shows a prosperous scene of “full-stack implementation” and “commercialization breakthrough”. Pony.ai, WeRide, Momenta, and Inceptio Technology collectively made the list, covering multiple dimensions including Robotaxi (autonomous taxi), Robotruck (trunk logistics), and factory-installed mass production solutions. This difference indicates that thanks to China’s accumulation of complex traffic scenario data and proactive policy piloting, Chinese intelligent driving enterprises have already taken the lead in the world in commercial operation and road-testing scale, moving from the technology R&D period to the large-scale commercial monetization period. Capital markets have fully affirmed their “operation value” rather than merely staying at “tool value”.

From the statistical charts of value creation dimensions (see Figure 1-7 and Figure 1-8), compared with 2024 data (OxValue, 2024), the driving cores of global and China AI startups this year have undergone profound structural evolution, revealing the overall trend of the industry returning from “model dividend” to “technology dividend”. Globally, value creation by AI startups shows an extreme concentration trend toward “technological novelty” and “risk and team”. Data shows that the proportion of technological novelty has risen from 37% last year to 40%, and the proportion of risk and team has significantly increased from 25% to 31%, with the two combined accounting for over 70%; meanwhile, the weight of market factors has significantly contracted from 23% to 16%. This dramatic change profoundly explains why the global list is filled with AGI explorers such as Safe Superintelligence Inc. (SSI) and OpenAI: capital markets are currently willing to pay extremely high premiums for disruptive underlying architecture breakthroughs (such as OpenAI’s o1 reasoning model) and the scarcity of top scientist teams, rather than merely focusing on short-term market share or revenue data. This indicates that in the deep-water zone of global AI competition, technological barriers have become the absolute core moat.

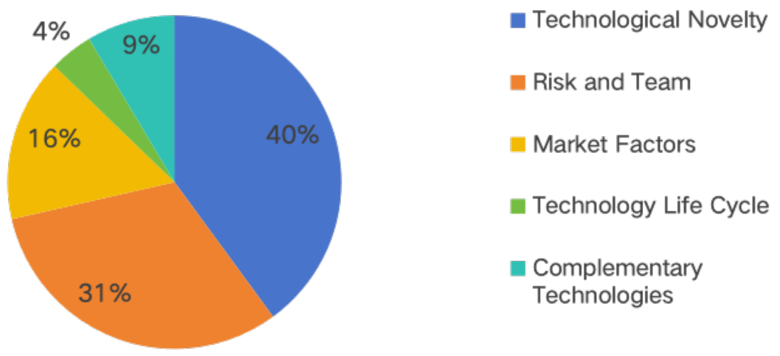

Figure 1-7 Value Creation Dimensions of Global AI Startups (%)

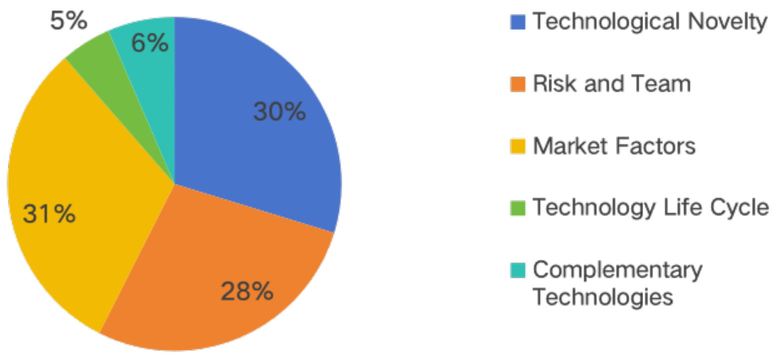

Figure 1-8 Value Creation Dimensions of China AI Startups (%)

In contrast, the value logic of China AI startups is undergoing a rational return from "market-driven" to "technology-driven", showing unique "dual-wheel drive" characteristics. Although "market factors" still rank first with a 31% share, this has significantly decreased from 39% last year; closely following are "technological novelty" (rising slightly from 29% to 30%) and "risk and team" (significantly rising from 23% to 28%), with the distribution of the three major dimensions becoming more balanced. This change is mainly attributable to the rise of domestic large models and GPU chip enterprises, correcting the previous path that overly relied on internet business model innovation. The rise and fall of data indicate that as chip autonomous controllability and foundation large models become competitive focal points, the valuation logic of China AI enterprises no longer purely relies on vast application market scale but increasingly depends on the hardness of core technology and the team's risk resistance capability under complex geopolitical environments. However, the dominant position of "market factors" (31%) still illustrates the unique advantage of Chinese enterprises in landing capabilities under massive scenarios (such as social networking, logistics, manufacturing). This dual support of "hardcore technology + vast market" constitutes the key to Chinese enterprises maintaining resilience in fierce global competition.

Part II Key Development Directions of Artificial Intelligence

2.1 Value Analysis of AI Agent Startups

2.1.1 Development Trends of AI Agents

With continuous breakthroughs in foundation model capabilities, planning algorithms, and interaction technologies, AI agents are moving from theoretical exploration toward scaled application, becoming a core driving force for industrial intelligent transformation. Currently, this field exhibits a dual trend of "parallel development of generalization and specialization" and "co-evolution of single-agent intelligence and multi-agent collaboration". As relevant regulatory standards are gradually improved and technical bottlenecks are continuously overcome, AI agents are expected to achieve a fundamental shift from "tool assistance" to "autonomous collaboration" within the next three to five years, truly becoming a new type of productivity tool driving the digital economy.

An AI agent is an intelligent system integrating advanced algorithms, models, and interaction mechanisms, capable of autonomously perceiving the environment, understanding task requirements, and executing corresponding operations, possessing a complete intelligent process of "perception—understanding—decision—execution". Among these, perception is the foundation, obtaining environmental information through sensors or data interfaces; understanding is the key, conducting semantic parsing and logical reasoning based on acquired information to grasp the essence of the task; decision-making is the core, formulating optimal action plans based on understanding results; execution is the goal, transforming decisions into specific operations to complete the task. With continuous advances in Natural Language Processing (NLP), Machine Learning (ML), Reinforcement Learning (RL), and other technologies, AI agents are transforming from simple automation tools into highly autonomous and adaptive intelligent agents, becoming the bridge connecting human needs with the digital world.

The development of AI agents is rapidly advancing toward multi-technology integration. The deepening of natural language processing technology enables AI agents to understand human language more precisely, achieving efficient interaction whether in spoken dialogue or written text. The continuous evolution of machine learning, especially deep learning, provides AI agents with powerful learning capabilities, enabling them to automatically extract features and discover patterns from massive data, continuously optimizing their own performance. The application of reinforcement learning technology allows AI agents to learn optimal behavioral strategies through trial and error and reward mechanisms during interaction with the environment. Furthermore, the integration of knowledge graph technology provides AI agents with rich knowledge reserves, enabling them to reason and make decisions based on structured knowledge systems, thereby better responding to complex and changing task scenarios. The fusion of these technologies not only enhances the intelligence level of AI agents but also expands their application scope.

The characteristics of AI agents are mainly reflected in three aspects: high autonomy, strong adaptability, and deep interaction capability.

- High autonomy: Enables them to independently complete tasks in complex and changing environments, autonomously perceiving environmental changes and automatically adjusting behavioral strategies, such as making real-time decisions in autonomous driving scenarios without human intervention.
- Strong adaptability: Allows AI agents to quickly respond to different tasks and environments, adjusting knowledge structures and behavioral patterns through learning algorithms and model optimization, such as automatically switching language models in cross-lingual communication.
- Deep interaction capability: Enables them to engage in natural, efficient, and multimodal interaction with humans, not only understanding text but also recognizing voice, images, gestures, and other modalities, and optimizing interaction content based on feedback, such as achieving multiple interaction methods to control devices in smart home scenarios.

These characteristics collectively drive AI agents' transformation from tools to partners, enabling their widespread application across multiple fields, meeting diverse user needs, and becoming indispensable intelligent partners in human life.

2.1.2 Value Creation Analysis of AI Agent Startups

Based on full-sample statistical analysis, AI agents have been established as the core track with the greatest value creation potential and explosive growth in the current artificial intelligence field. Data shows that the number of startups in the global AI agent field has reached 1,107. Although not occupying an absolute majority in quantity, their total valuation is as high as $2,100 billion, accounting for nearly half (48%) of the global AI total valuation. This significant "value inversion" phenomenon—that is, the valuation share far exceeding the quantity share—indicates that a large number of high-valuation super-unicorns have emerged in this field, with an extremely obvious trend of capital concentrating toward the head.

Focusing on the China market, AI agents also occupy a dominant position, with 172 enterprises and a total valuation of $220.9 billion, accounting for 35% of China's total AI valuation. Notably, China's enterprise quantity in this field accounts for approximately 16% of the global total in the same field, and valuation accounts for approximately 11% of the global total in the same field. This indicates that although there is a certain gap between China and the global market (mainly the US) in overall scale, as the world's second-largest AI agent innovation pole, it has formed an industrial cluster with considerable scale and volume.

From the geographic distribution dimension of countries and cities (see Figure 2-1, Figure 2-2, and Figure 2-3), the global competitive landscape of AI agents presents a "US-China dual leadership" pattern, with innovation resources highly concentrated in core city nodes. The United States occupies an absolutely dominant position with 638 companies and a total valuation of approximately $1,789.3 billion, controlling the vast majority of capital and technical resources in this field globally; China follows closely, ranking second globally with 172 companies and a valuation of approximately $220.8

billion, with a scale far exceeding that of the United Kingdom (49 companies, approximately $22.9 billion) and countries such as Germany and France.

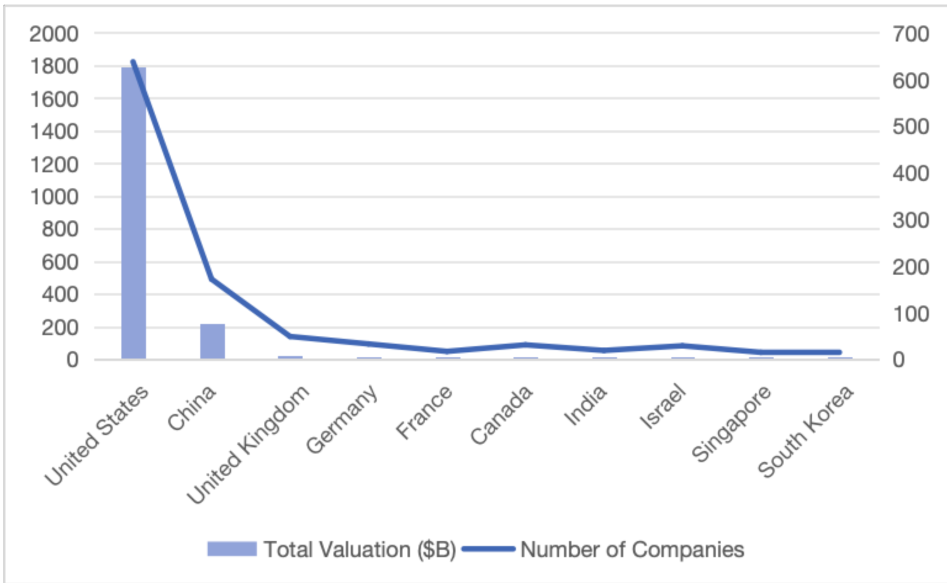

Figure 2-1　Top 10 Countries/Regions by Global AI Agent Valuation

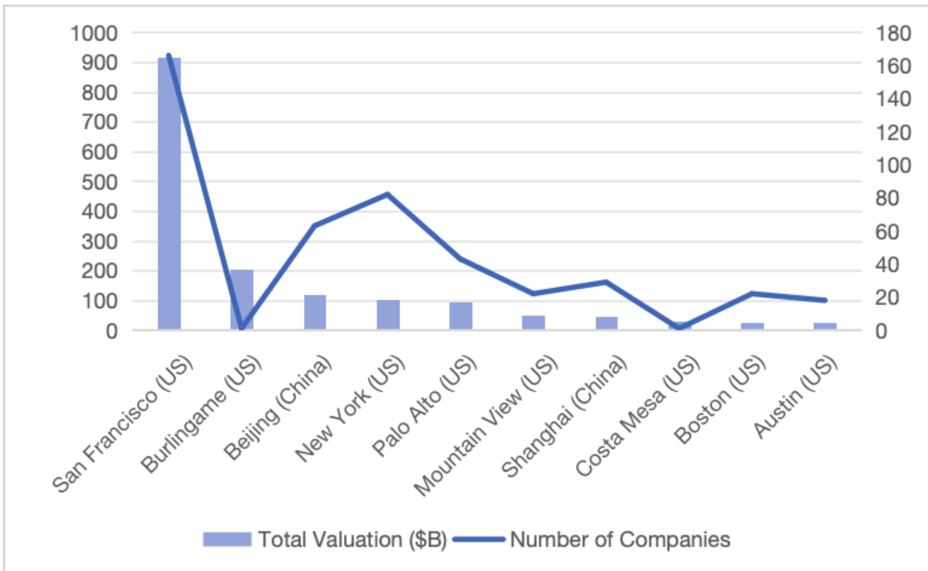

Figure 2-2　Top 10 Cities by Global AI Agent Valuation

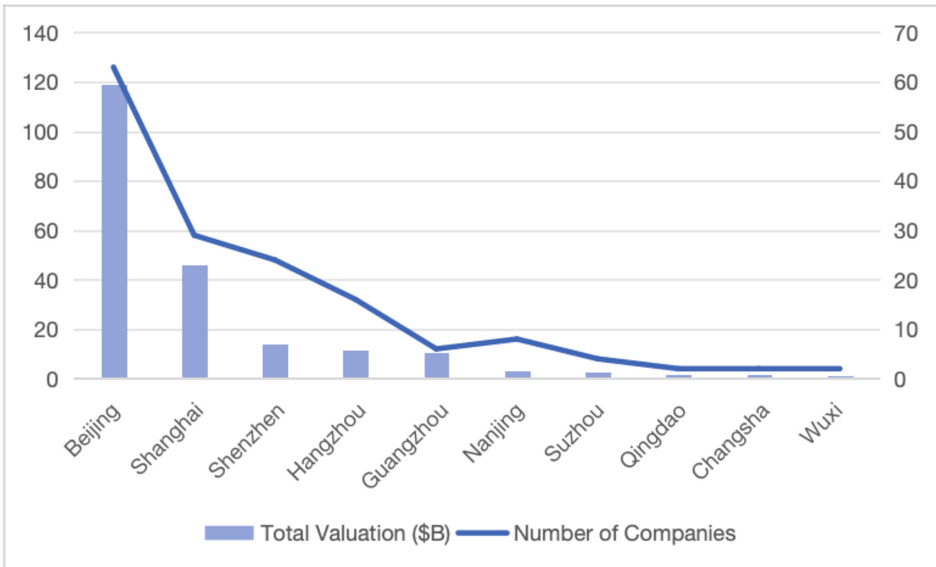

Figure 2-3 Top 10 Cities by China AI Agent Valuation

At the city level, global AI agent innovation centers exhibit an extremely strong “head effect”. San Francisco in the United States ranks first globally with 166 companies and an astonishing valuation of approximately $916.1 billion, together with surrounding cities such as Palo Alto and Mountain View, constituting Silicon Valley, the unshakeable global innovation highland for AI agents. It is a matter of pride that Beijing, as the leader of Chinese innovation, ranks among the global Top 3 cities with 63 companies and a total valuation of approximately $119.2 billion, becoming the only non-US city capable of competing with core US city clusters. Within China, Beijing leads with absolute advantage, followed by Shanghai (29 companies, approximately $46 billion), Shenzhen (24 companies, approximately $14.1 billion), and Hangzhou (16 companies, approximately $11.4 billion), forming an industrial pattern of coordinated development among the Beijing-Tianjin-Hebei region, the Yangtze River Delta, and the Pearl River Delta.

2.1.3 Representative Enterprises

According to data shown in Table 2-1, the average valuation of global AI agent head enterprises has reached $101.957 billion, mainly due to giants such as OpenAI and Anthropic, which master underlying large model technology, pulling up the overall average. The average for Chinese head enterprises is $10.289 billion, with a gap of approximately 10 times between the two. This gap objectively reflects that the competitive high ground in the current global AI agent field is still primarily defined by breakthroughs at the foundation model layer. However, the catch-up speed of Chinese enterprises is astonishing. The listed enterprises include both established tech giants such as Kuaishou Technology and Pony.ai, as well as emerging "AI Four Little Dragons" such as Moonshot AI, Zhipu AI, and DeepSeek, showing China's unique ecosystem advancing in parallel at both the application layer and the model layer. Particularly noteworthy is that Beijing Kuaishou Technology Co., Ltd. has entered both the global and China top ten lists, demonstrating that the strength of Chinese head enterprises in specific fields already possesses global competitiveness.

Table 2-1 List of Global and China AI Agent Startups (Top 10)

Global Average Value: $101.957 Billion USD	China Average Value: $10.289 Billion USD
Anduril Industries, Inc.	Beijing Chusudu Technology Co., Ltd. (Momenta)
Anthropic PBC	Beijing Volcano Engine Technology Co., Ltd.
Applied Intuition Inc.	Beijing Kuaishou Technology Co., Ltd.
Beijing Kuaishou Technology Co., Ltd.	Beijing Pony.ai Technology Co., Ltd.
Mistral AI SAS	Beijing Moonshot AI Technology Co., Ltd.
OpenAI, L.L.C.	Beijing Zhipu Huazhang Technology Co., Ltd. (Zhipu AI)
Perplexity AI, Inc.	Guangzhou WeRide Technology Co., Ltd.
Safe Superintelligence Inc.	Hangzhou DeepSeek Artificial Intelligence Basic Technology Research Co., Ltd. (DeepSeek)
Scale AI, Inc.	Shanghai SenseTime Intelligent Technology Co., Ltd.
xAI Corp.	Shanghai Xiyu Jizhi Technology Co., Ltd. (MiniMax)

*Sorted alphabetically by company name

Global and Chinese representative enterprises are defining the future of AI agents through different strategic paths. Globally, OpenAI, as the industry leader, has established the technical paradigm of general intelligent agents (AGI) through its GPT series models and ChatGPT products, and is committed to building super-intelligent agents capable of autonomous planning and execution of complex tasks; xAI, relying on Musk's resource ecosystem, focuses on the Grok agent with real-time search capabilities and unique personality, exploring new boundaries of human-machine interaction; Anthropic takes “Constitutional AI” and safety as its core differentiators, with its Claude series’ performance in long-text processing and logical reasoning making it the preferred choice for enterprise-grade high-reliability agents.

In the China market, Zhipu AI, originating from the Tsinghua University ecosystem, adheres to independent R&D of GLM pre-training models, committed to building China’s “Model as a Service” agent foundation; MiniMax has carved out a unique path, focusing on anthropomorphic interaction and emotional intelligence, occupying a place in the C-end companion agent field through products such as Glow; Beijing Volcano Engine Technology Co., Ltd., as the cloud service platform under ByteDance, provides industries with the computing power and model infrastructure needed to build enterprise-grade agents through the “Doubao” large model and powerful recommendation algorithm technology, empowering B-end industrial upgrading.

From the value creation driving dimensions (Figure 2-4 and Figure 2-5), global and Chinese AI agent enterprises show significant path differences. Global AI startups are highly dependent on “technological novelty”, with their proportion as high as 39%, and “risk and team” accounting for 33%, reflecting that the investment logic of international markets (particularly Silicon Valley) tends to bet on top scientist teams conducting disruptive underlying technological innovation, with technological barriers being the core source of their value. In contrast, the value drivers of Chinese AI startups are more balanced and pragmatic. “Market factors” account for the highest proportion at 31% (only 15% globally), with “technological novelty” and “risk and team” each accounting for 29%. This data characteristic profoundly reveals the unique genes of China’s AI agent industry: while pursuing technological breakthroughs, enterprises attach extremely high importance to scenario implementation and business model closed loops, tending to quickly find monetization paths for agents in the vast consumer and industrial markets. This “technology + market” dual-wheel drive model is the key for Chinese enterprises to achieve corner overtaking in the second half of AI agent competition.

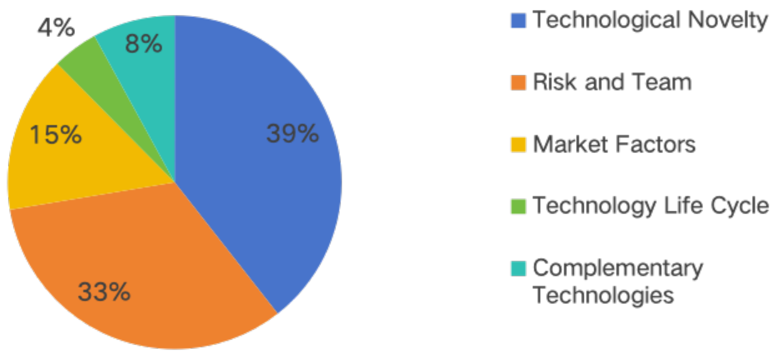

Figure 2-4　Value Creation Dimensions of Global AI Agent Startups (%)

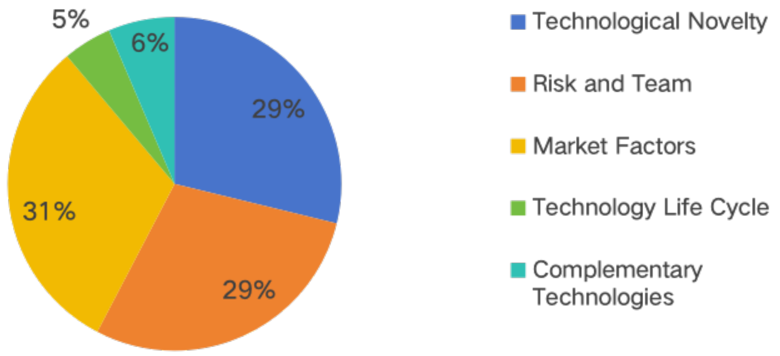

Figure 2-5　Value Creation Dimensions of China AI Agent Startups (%)

2.1.4 Development Impact Analysis (AI Agents)

From the macro perspective of the development dimension, the evolution of AI agents toward complex workflows and autonomous execution capabilities is highly dependent on the support of large-scale cloud infrastructure and the input of interdisciplinary high-end talent. This high entry threshold objectively favors capital-and technology-intensive high-income economies, with the risk of further exacerbating the global digital divide. However, the diversity of technological evolution also provides windows for policy intervention. With the rapid iteration of small model technology and edge computing, computing thresholds and inference costs are significantly decreasing, providing developing countries with viable technological alternative paths. By reducing dependence on centralized cloud infrastructure, developing countries have the potential to achieve technological “leapfrogging” development in specific vertical fields such as agricultural agents and primary medical diagnosis. To seize this strategic opportunity, the international community needs to deepen close and pragmatic South-South cooperation mechanisms. Through extensive sharing of model training experience, opening high-quality datasets and application practices, assisting developing countries in optimizing resource allocation, avoiding duplicate investment in underlying infrastructure and foundation model R&D, the construction of indigenous agent capabilities can be accelerated, and enable AI technology to effectively empower global sustainable development goals.

2.2 Value Analysis of Embodied Intelligence Startups

2.2.1 Development Trends of Embodied Intelligence

As a core wave of the new generation of artificial intelligence, embodied intelligence is rapidly becoming the focus of global technological innovation. With continuous breakthroughs in key technologies such as multimodal large models, general operating systems, dexterous actuators, and computing platforms, embodied intelligence is accelerating its evolution from laboratory research toward engineering and industrialization. By deeply integrating large-scale pre-trained models with physical or virtual carriers, embodied intelligence constructs a complete intelligent closed loop of “perception—cognition—action”, reconstructing the new paradigm of human-machine collaboration. In the future, the scaled deployment of embodied intelligence will drive fundamental transformation in fields such as intelligent manufacturing and smart services, injecting strong momentum into global digital and intelligent development.

Embodied intelligence refers to a new form of intelligence that relies on specific physical or virtual carriers, capable of real-time interaction with the environment, achieving state acquisition, decision optimization, and behavioral feedback. Among these, “embodied” emphasizes the ability to actively perceive and interact with the environment through a carrier; “intelligence” refers to the autonomous identification, understanding, planning, and execution of complex tasks based on data-driven and knowledge-reasoning approaches. This form not only connects virtual intelligence with the physical world but is also a key paradigm driving AI agents toward scaled deployment.

Currently, the product forms of embodied intelligence are increasingly diverse, mainly divided into two categories:
- Physical Embodied Intelligence: With physical robots as the main carriers, encompassing general-purpose humanoid robots, industrial robots, and service robots. Some leading enterprises’ robot products are already capable of undertaking complex operations such as handling hazardous components and inspecting confined spaces in real scenarios; others serve as venue guides, providing interactive services for visitors including overview explanations and route guidance.
- Hybrid Embodied Intelligence: Through the integration of cloud-based large models, edge computing, and multimodal interaction technologies, achieving virtual-physical symbiotic intelligent collaboration. Typical applications include AI glasses capable of providing real-time assistance for consumer and travel scenarios, as well as multilingual AI transparent screens with double-sided transparent design, the latter already providing efficient solutions for cross-lingual instant communication in public places such as airports, subways, and hotels.

The core characteristics of embodied intelligence are mainly reflected in three dimensions: multimodal fusion capability, perception-action coupling capability, and autonomous learning and knowledge transfer capability.
- Multimodal Fusion Capability: Able to integrate multiple-perceptual information such as vision, touch, and hearing, and combine action feedback to achieve precise

collaborative execution in complex environments.

- Perception-Action Coupling Capability: Obtaining environmental information in real time through sensors and tightly integrating it with internal cognitive models to achieve closed-loop control of decision-making and execution. This tight coupling enables the system to adjust behavior in real time to respond to dynamic environmental changes.
- Autonomous Learning and Knowledge Transfer Capability: Accumulating experience through interaction with the environment, forming associative cognition of "action—effect", and transferring acquired experience to new tasks or scenarios, thereby continuously improving intelligence levels.

2.2.2 Value Creation Analysis of Embodied Intelligence Startups

Based on full-sample statistical analysis, although embodied intelligence is still an emerging segment in the overall AI industry valuation, China's participation and contribution in this track are extremely high, showing a strong momentum of "leading in quantity, catching up in valuation". Data shows that there are 199 startups in the global embodied intelligence field, with a total valuation of approximately $228.2 billion. However, focusing on the China market, there are 101 embodied intelligence enterprises, accounting for 15% of China's total AI enterprises, with a total valuation of $70.7 billion, accounting for 11% of China's total valuation. Particularly striking is China's extremely high global share in this segment—its company quantity accounts for 51% of the global total in the same field, meaning more than half of the world's embodied intelligence startups come from China, and the valuation amount also accounts for 31% globally. This data indicates that, relying on a powerful hardware supply chain and manufacturing foundation, China has become a core pole of global embodied intelligence innovation, jointly dominating the industrial landscape of this field with the United States.

From the geographic distribution dimension of countries and cities (see Figure 2-6, Figure 2-7, and Figure 2-8), the global map of embodied intelligence shows a significant "duopoly" characteristic, with obvious city cluster effects. The United States ranks first globally in valuation with 62 companies and a total valuation of approximately $151.1 billion; China ranks first in quantity with 101 companies, with a valuation of approximately $70.67 billion. The two countries far outpace Germany, the United Kingdom, Canada, and other countries ranked behind them.

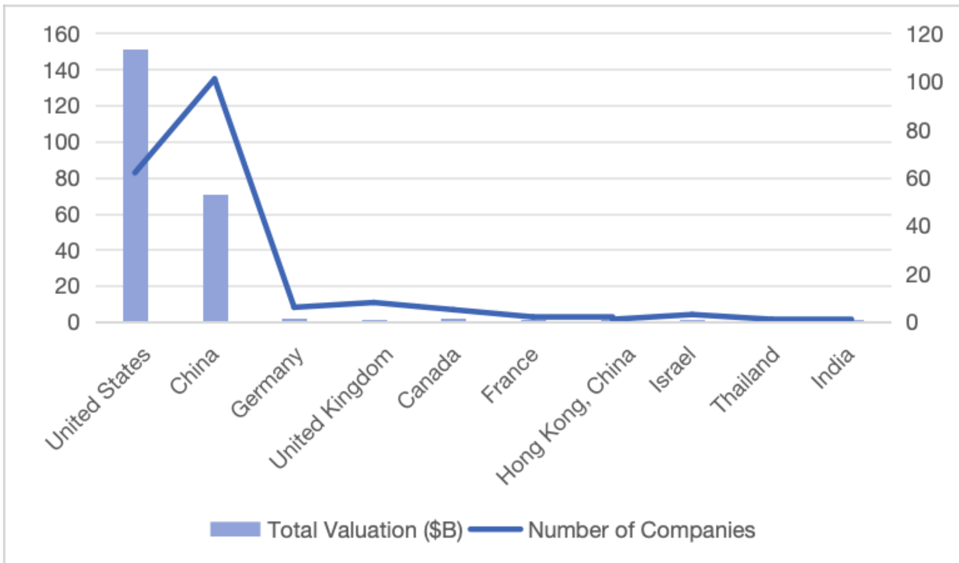

Figure 2-6 Top 10 Countries/Regions by Global Embodied Intelligence Valuation

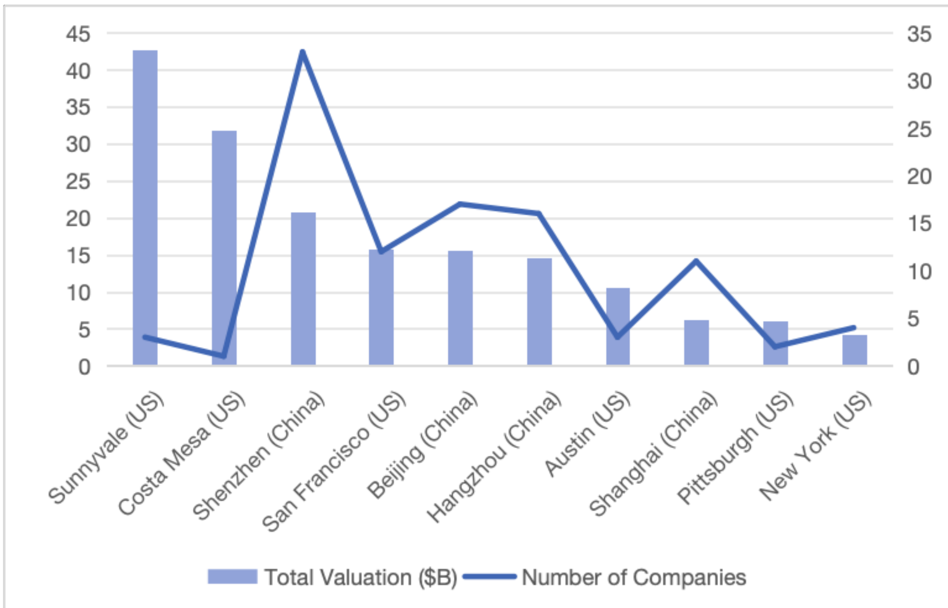

Figure 2-7 Top 10 Cities by Global Embodied Intelligence Valuation

At the city level, among the global Top 10 cities, Sunnyvale and Costa Mesa in the

United States occupy the top two valuation positions due to having ultra-high valuation head enterprises (such as Anduril). Notably, Shenzhen ranks third globally and first among Chinese cities with 33 companies and a valuation of approximately $20.8 billion, fully confirming Shenzhen’s absolute advantage in robot manufacturing and industrial chain integration as the “Hardware Silicon Valley”. In addition, Beijing (17 companies), Hangzhou (16 companies), and Shanghai (11 companies) also rank among the global leaders, jointly constituting China’s “Beijing-Shanghai-Hangzhou-Shenzhen” embodied intelligence innovation quadrangle. Particularly Hangzhou, with star enterprises such as Unitree Technology, has risen abruptly in the quadruped robot and humanoid robot fields.

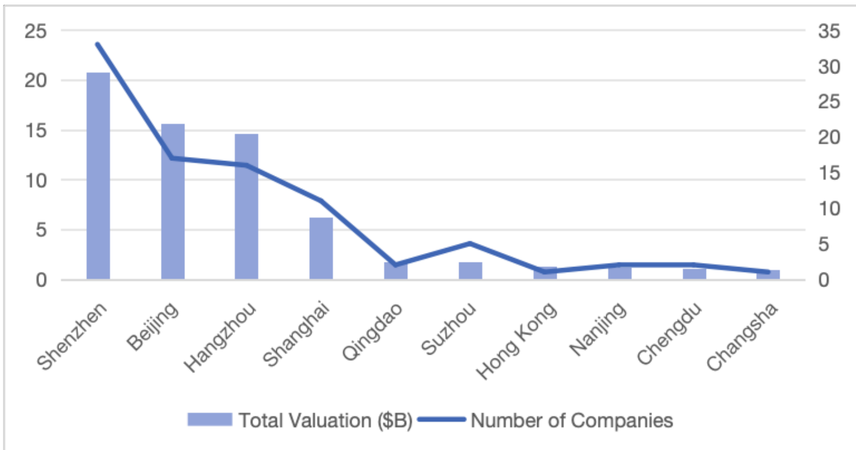

Figure 2-8 Top 10 Cities by China Embodied Intelligence Valuation

2.2.3 Representative Enterprises

According to data shown in Table 2-2, the average valuation of global embodied intelligence head enterprises has reached $10.635 billion, significantly higher than the Chinese head enterprise average of $2.275 billion, mainly attributable to the ultra-high valuation of US defense and general robotics giants such as Anduril Industries pulling up the average. However, analyzing the global Top 10 list reveals a highly symbolic phenomenon: three Chinese enterprises—Beijing Galbot, CloudMinds, and Hangzhou Unitree Technology—are prominently listed, indicating that Chinese embodied intelligence enterprises have broken through geographic limitations in technical strength and commercial potential, entering the global first echelon. The listed enterprises cover diverse tracks from general-purpose humanoid robots (Figure AI, Galbot), quadruped robots (Unitree Technology) to defense autonomous systems (Anduril) and industrial collaborative robots (Flexiv, Dobot), showing that the industry is evolving from single-purpose dedicated equipment toward general-purpose intelligent terminals.

Table 2-2 List of Global and China Embodied Intelligence Startups (Top 10)

Global Average Value: $10.635 Billion USD	China Average Value: $2.275 Billion USD
Anduril Industries, Inc.	Beijing MegaRobo Technology Co., Ltd. (MegaRobo)
Apptronik, Inc.	Beijing Galaxy General Robot Co., Ltd. (Galbot)
Beijing Galaxy General Robot Co., Ltd. (Galbot)	CloudMinds (Beijing) Co., Ltd.
CloudMinds (Beijing) Co., Ltd.	Hangzhou Unitree Technology Co., Ltd. (Unitree Robotics)
Figure AI, Inc.	Leju (Shenzhen) Robotics Co., Ltd.
Hangzhou Unitree Technology Co., Ltd. (Unitree Robotics)	Qingdao AInnovation Technology Group Co., Ltd. (AInnovation)
Physical Intelligence, Inc.	Shanghai Flexiv Robotics Ltd. (Flexiv)
Saronic Technologies, Inc.	Shenzhen Pudu Technology Co., Ltd. (Pudu Robotics)
SKILD AI LLC	Shenzhen Yuejiang Technology Co., Ltd. (Dobot)
The Bot Company Pty Ltd	SmartMore Corporation Limited

*Sorted alphabetically by company name

Global and Chinese representative enterprises are defining the future forms of embodied intelligence through rapid iteration of technology and products. Globally, Figure AI, Inc., as a unicorn in the humanoid robot field, through cooperation with OpenAI, has successfully implanted large model reasoning capabilities into the robot body, achieving end-to-end natural language instruction execution. Not only has it been selected as a global representative enterprise, but it is also a technological bellwether for the industry; Apptronik, Inc. focuses on building the general-purpose humanoid robot Apollo, aiming to solve labor shortage problems in logistics and manufacturing sectors.

In the China market, Hangzhou Unitree Technology Co., Ltd. (Unitree) has been selected as both a global and Chinese representative enterprise. As the global leader in legged robots, it has not only achieved large-scale mass production and cost reduction of high-performance quadruped robots but has also demonstrated excellent motion control and AI evolution capabilities in its general-purpose humanoid robot H1/G1 series, serving as a model of “Intelligent Manufacturing in China” going global. Beijing Galbot Technology Co., Ltd. focuses on the combination of embodied large models and dexterous manipulation, committed to making robots serve millions of households; Beijing MegaRobo Technology Co., Ltd. delves deeply into the life sciences field, reshaping drug R&D processes through highly automated robot workstations, demonstrating the deep empowerment of embodied intelligence in vertical industries.

From the value creation driving dimensions (see Figure 2-9 and Figure 2-10), there are significant differences in innovation focus between global and Chinese embodied intelligence enterprises. Global AI startups are highly dependent on “technological novelty”, with its proportion as high as 43%, reflecting that international markets (particularly the United States) currently still regard embodied intelligence as a hard tech breakthrough battle, focusing on solving the collaborative challenges of the brain (large models) and cerebellum (motion control). In contrast, the value drivers of Chinese AI startups show a “technology + market” dual-wheel drive characteristic, with “technological novelty” (32%) and “market factors” (29%) having quite close shares. This data characteristic profoundly reveals the competitive advantages of Chinese enterprises: while maintaining technological follow-up, relying on the vast domestic manufacturing scenarios and consumer market, they place more emphasis on product commercialization implementation and supply chain integration, tending to quickly achieve closed loops in specific scenarios such as logistics distribution, industrial quality inspection, and home companionship, and feeding back technological iteration through scaled application.

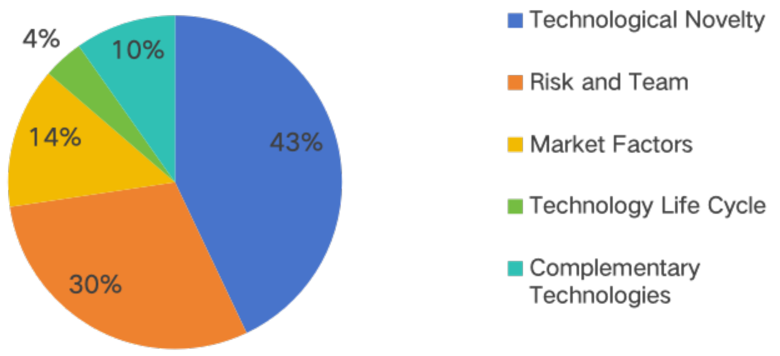

Figure 2-9 Value Creation Dimensions of Global Embodied Intelligence Startups (%)

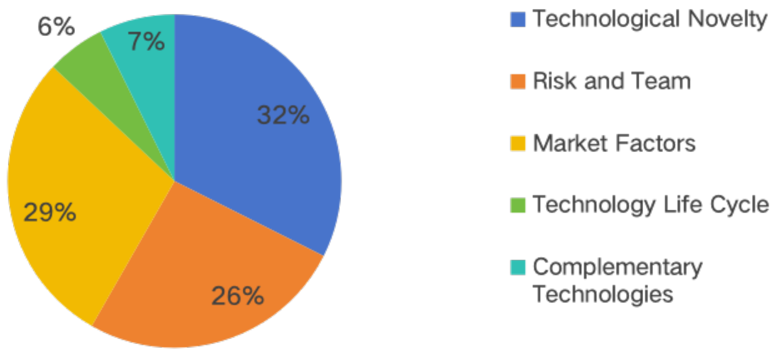

Figure 2-10 Value Creation Dimensions of China Embodied Intelligence Startups (%)

2.2.4 Development Impact Analysis (Embodied Intelligence)

From the macro perspective of the development dimension, China's emphasis on scaled application and supply chain integration in the embodied intelligence field is generating significant spillover effects for the vast developing economies. Macro data shows that China accounts for 51% of global embodied intelligence startups and has established a dominant position in the hardware supply chain. This industrial landscape provides developing countries with a new alternative path to access physical AI technology. Compared with traditional technology transfer models that are typically high-cost and highly restricted, developing countries can introduce mature embodied intelligence hardware and software-hardware integrated solutions in a more cost-effective manner by deepening South-South cooperation with emerging economies. Particularly in key fields such as agricultural robots, infrastructure inspection, and disaster emergency response, the on-the-ground application of embodied intelligence shows high adaptability. The democratized widespread adoption of physical AI technology not only helps enhance total factor productivity in traditional industries but can also directly and effectively alleviate the deep-seated problems currently prevalent in developing countries in specific industries, such as structural labor shortages and insufficient protection for hazardous operations, thereby providing solid technical support for enhancing economic resilience in the Global South and achieving sustainable development.

Part III Important Application Scenarios of Artificial Intelligence

3.1 AI + Healthcare

The development trend of AI + Healthcare demonstrates a deep integration of technological innovation and application expansion, reshaping medical service models and significantly improving medical efficiency and quality. With the rapid advancement of artificial intelligence technology, the healthcare sector has become an important frontier for its application. From disease diagnosis to treatment plan formulation, from medical imaging analysis to drug R&D, application scenarios for AI are continuously expanding, driving healthcare's transformation from traditional models toward intelligent and precision-oriented directions. Globally, numerous medical institutions, technology enterprises, and research institutes have invested substantial resources in technology R&D and application exploration; the market scale of AI + Healthcare continues to expand, demonstrating tremendous development potential and broad application prospects.

AI + Healthcare refers to a model that utilizes artificial intelligence technologies—encompassing machine learning, deep learning, natural language processing, and computer vision—to optimize and innovate medical services. Through intelligent tools and platforms, it provides physicians with support for auxiliary diagnosis, treatment plan recommendations, and medical imaging analysis, while offering patients personalized health management services. The core of AI + Healthcare lies in leveraging data-driven methods to provide precise medical services based on patients' medical records, symptoms, examination results, and other information, thereby improving medical efficiency and quality while reducing medical costs.

The product forms of AI + Healthcare are rich and diverse, covering domains from intelligent diagnostic systems to virtual medical assistants. Intelligent diagnostic systems can rapidly and accurately identify disease characteristics by analyzing medical imaging, electronic medical records, and other data, assisting physicians in diagnosis. Virtual medical assistants can provide patients with services such as appointment scheduling, health consultation, and medication reminders through natural language interaction. Furthermore, intelligent surgical navigation systems, drug R&D platforms, and patient health management apps integrate AI technology, not only improving the efficiency and accuracy of medical services but also providing patients with more convenient and personalized medical experiences. As technology continues to mature, the product forms of AI + Healthcare will further expand and deepen to meet the needs of diverse medical scenarios.

The main characteristics of AI + Healthcare are reflected in three aspects: precision diagnosis, intelligent assistance, and data-driven decision-making.
- Precision Diagnosis: By analyzing large volumes of medical imaging and clinical data, utilizing deep learning algorithms to identify disease characteristics, providing physicians with accurate diagnostic recommendations and reducing misdiagnosis rates.
- Intelligent Assistance: Utilizing natural language processing and machine learning technologies to provide physicians with treatment plan recommendations, surgical navigation support, etc., helping physicians complete medical work more efficiently.
- Data-Driven Decision-Making: By collecting and analyzing various data generated during medical processes, providing decision-making support for medical institutions, optimizing the allocation of medical resources and management processes.

These characteristics collectively promote the intelligent transformation of healthcare, laying a solid foundation for the future development of medicine.

Based on full-sample statistical data, AI + Healthcare is not only an extremely active segment in the global AI industry but also one of the core battlegrounds in the technological competition between China and the United States. Globally, the number of startups in the AI + Healthcare field has reached 500, with a total valuation as high as $446 billion, accounting for approximately 10% of the total valuation of global AI startups. This data fully confirms the industry status of healthcare as the “first scenario” for AI technology implementation. Focusing on the China market, AI + Healthcare also demonstrates strong development resilience, with a total of 82 enterprises shortlisted, accounting for 12% of China’s total AI enterprises, and their total valuation reaching

$67.8 billion, accounting for 11% of China's total valuation. Notably, China's enterprise quantity and valuation amount in this field account for 16% and 15% of the global total in the same field, respectively. These two close figures indicate that China's AI + Healthcare industry occupies an important place in the global landscape, and the average quality of enterprises maintains good synchronization with global levels without obvious valuation bubbles or undervaluation, demonstrating a steady growth trend.

From the geographic distribution dimension of countries and cities (see Figure 3-1, Figure 3-2, and Figure 3-3), the global innovation landscape of AI + Healthcare presents a "one superpower, one strong power" bipolar pattern. The United States occupies an absolutely dominant position with 273 enterprises and a total valuation of approximately $342.1 billion, controlling over half of global innovation resources; China ranks second with 82 enterprises and a valuation of approximately $67.8 billion, leading the second echelon and far exceeding the United Kingdom (30 enterprises) and subsequent countries such as France and Israel in scale. At the city level, global Top 10 cities' positions are mainly occupied by US biotechnology centers (such as New York, San Francisco, Cambridge, and Boston) and China's core first-tier cities. Particularly noteworthy is the performance of Chinese cities: Beijing ranks first in China and sixth globally with 28 companies, demonstrating strong innovation incubation capabilities; while Shanghai, although having fewer companies than Beijing (17), has a total valuation as high as $23.8 billion, ranking first in China and fourth globally. This indicates that Shanghai has greater advantages in cultivating high-valuation, mature medical AI unicorns, forming an industrial highland represented by SenseTime and United Imaging Intelligence; Shenzhen and Hangzhou also rank among the forefront, jointly constituting a regionally distributed innovation cluster for AI + Healthcare in China.

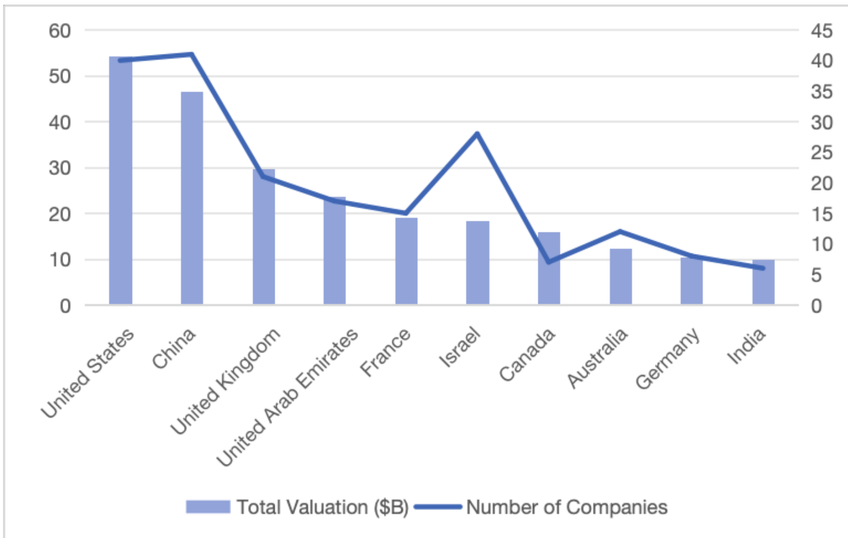

Figure 3-1 Top 10 Countries/Regions by Global AI + Healthcare Valuation

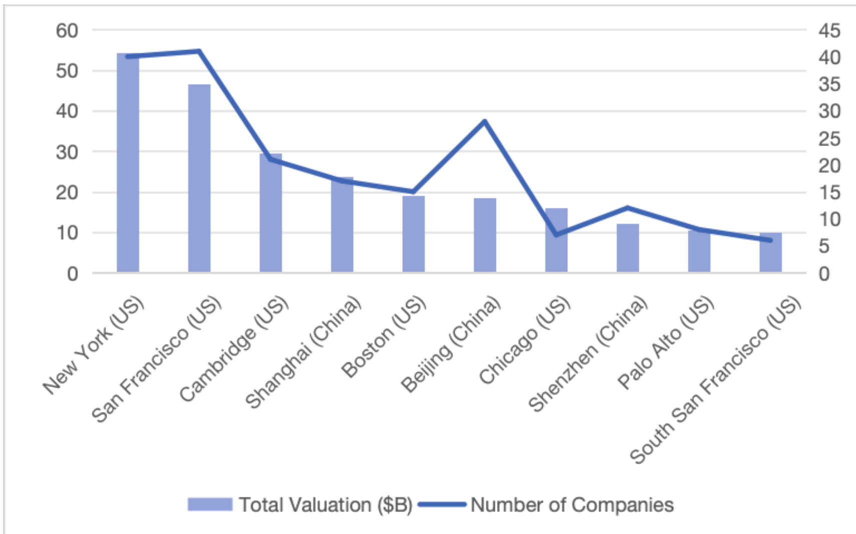

Figure 3-2 Top 10 Cities by Global AI + Healthcare Valuation

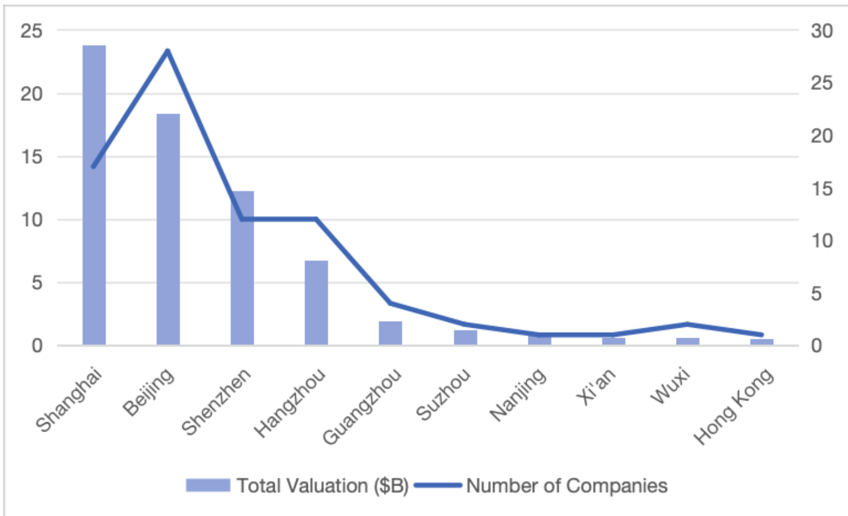

Figure 3-3 Top 10 Cities by China AI + Healthcare Valuation

According to data shown in Table 3-1, the average valuation of global AI + Healthcare head enterprises has reached $7.031 billion, significantly higher than the Chinese head enterprise average of $2.972 billion. This gap reflects that top global AI medical enterprises currently still hold advantages in capital accumulation, commercial implementation, and market maturity, but it also means that Chinese enterprises possess enormous room for catch-up in future valuation growth and market expansion. Notably, in the global Top 10 list, Shanghai SenseTime Intelligent Technology Co., Ltd. and Shenzhen XtalPi Technology Co., Ltd. are prominently listed. This not only demonstrates that China's AI medical head enterprises already possess global competitiveness and influence but also reveals the integrated development trend of "technology without borders" in this field. From the perspective of sub-tracks, listed enterprises cover diversified fields from AI pharmaceuticals (such as Tempus, XtalPi), medical imaging and auxiliary diagnosis (such as Shukun Technology, United Imaging Intelligence), to medical large models and clinical document generation (such as Abridge, Baichuan Intelligence), and specialized medical management (such as Shanghai LinkedCare, Spring Health), indicating that the industry is deeply penetrating the entire chain from single imaging recognition to drug R&D, clinical decision support, and health management.

Table 3-1 List of Global and China AI + Healthcare Startups (Top 10)

Global Average Value: $7.031 Billion USD	China Average Value: $2.972 Billion USD
Abridge AI, Inc.	BioMap (Beijing) Intelligence Technology Co., Ltd.
GeneDx, Inc.	Beijing Baichuan Intelligent Technology Co., Ltd. (Baichuan AI)
Group 42 Holding Ltd. (G42)	Nanjing Weiyun Artificial Intelligence Research Institute Co., Ltd.
Hippocratic AI, Inc.	Shanghai United Imaging Intelligence Co., Ltd. (UII)
OpenEvidence, LLC	Shanghai LinkedCare Information Technology Co., Ltd. (LinkedCare)
Shanghai SenseTime Intelligent Technology Co., Ltd.	Shanghai SenseTime Intelligent Technology Co., Ltd.
Shenzhen Jingtai Technology Co., Ltd. (XtalPi)	Shanghai Xiaodu Artificial Intelligence Co., Ltd. (Xiaodu)
Spring Health, Inc.	Shenzhen SIBIONICS Co., Ltd. (SIBIONICS)
Sword Health Inc.	Shenzhen Jingtai Technology Co., Ltd. (XtalPi)
Tempus, Inc.	Shukun Technology Co., Ltd. (Shukun Technology)

*Sorted alphabetically by company name

Among representative enterprises globally and in China, various companies have established industry barriers through unique technological entry points, driving transformation in the medical industry. Globally, OpenEvidence focuses on utilizing artificial intelligence to index and summarize massive biomedical literature, providing medical professionals with highly accurate and timely clinical evidence support, greatly lowering the threshold for physicians to access cutting-edge knowledge and make evidence-based medical decisions; Tempus is committed to building massive clinical and molecular databases, utilizing AI analysis technology to drive the development of precision medicine, particularly in oncology, helping physicians customize more personalized treatment plans for patients and achieve data-driven cancer treatment; Shenzhen XtalPi Technology Co., Ltd., as a model of globalized layout, relies on an intelligent drug R&D platform of “quantum physics + AI” to significantly shorten the new drug discovery cycle, becoming a key hub connecting frontier algorithms with the global pharmaceutical industry.

Focusing on the China market, BioMap (Beijing) Intelligent Technology Co., Ltd., as a pioneer in the field of life science large models, is committed to decoding the protein language through its xTrimo platform, providing underlying AI capability support for life science R&D and accelerating the development of innovative drugs and biomaterials; Shanghai LinkedCare Information Technology Co., Ltd. delves deeply into the consumer medical field, particularly in dentistry and medical aesthetics tracks, providing clinics with digital management and supply chain solutions through the SaaS + AI model, driving the standardization and intelligent transformation of grassroots medical services; while XtalPi, simultaneously selected as a global and Chinese representative enterprise, continues to lead the construction of the AI pharmaceutical ecosystem domestically, empowering Chinese pharmaceutical enterprises to achieve the leap from imitation to innovation. The emergence of these benchmark enterprises vividly illustrates that AI + Healthcare is moving from proof-of-concept to a new stage of scaled commercial application.

From the value creation driving dimensions (see Figure 3-4 and Figure 3-5), global and Chinese AI + Healthcare enterprises present completely different innovation logics. Global AI startups are highly dependent on “technological novelty”, with its proportion as high as 44%, reflecting that international markets (especially the United States) in the medical AI field focus more on breakthroughs in source technologies, such as novel drug target discovery algorithms or pioneering biocomputing models, with technological barriers being the core source of their value. In contrast, the value drivers of Chinese AI startups are more balanced, with “technological novelty” and “market factors” each accounting for 30%. This data characteristic profoundly reveals the uniqueness of the Chinese market: on the one hand, enterprises still attach importance to hard technology R&D; on the other hand, due to China’s vast population base and complex medical service scenarios, how to quickly transform technology into products that meet market demands (such as hospital information system upgrades, grassroots screening popularization) and achieve closed loops in business models have become key elements for Chinese enterprises to create value. Furthermore, both maintain a high proportion of 28% in the "risk and team" dimension, indicating that the particularity of the medical industry determines that whether globally or in China, possessing interdisciplinary top-tier teams and the ability to control medical risks remain the cornerstones of enterprise success.

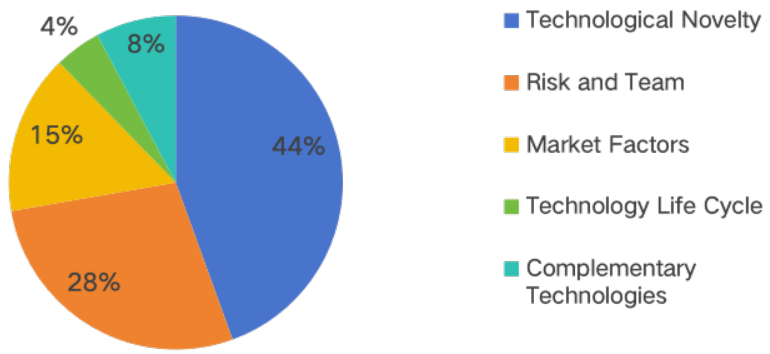

Figure 3-4　Value Creation Dimensions of Global AI + Healthcare Startups (%)

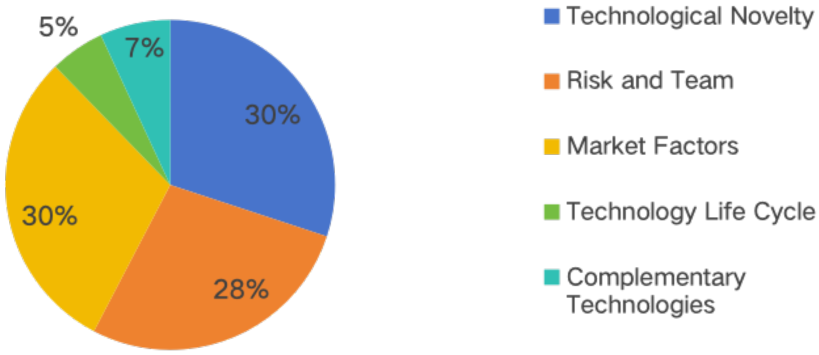

Figure 3-5　Value Creation Dimensions of China AI + Healthcare Startups (%)

This industrial closed loop from underlying technological innovation to actual medical scenario implementation, while reshaping commercial value, achieves high alignment with the United Nations Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health and Well-being). However, the current development of global medical AI is extremely uneven. Macro data shows that US enterprises account for 77% of global related valuations, while regions such as Sub-Saharan Africa with the most scarce medical resources have almost zero share. This huge technological gap poses a substantive challenge to global health equity. Faced with this reality, South-South cooperation in the AI + Healthcare field provides a key breakthrough path for developing countries. The international community and relevant stakeholders should promote the establishment of a “Global Medical AI Public Goods Alliance”, reducing underlying technology entry barriers through multinational cooperation to open-source pre-trained medical large models and share high-quality medical datasets. In particular, it is necessary to support emerging economies in developing AI-assisted diagnostic tools adapted to local disease spectra (such as malaria, dengue fever, and other tropical infectious diseases) based on local data, thereby narrowing regional technology gaps and comprehensively improving the inclusiveness and service effectiveness of global grassroots medical systems.

3.2 AI + Scientific Discovery

The development trend of AI + Scientific Discovery demonstrates a dual trend of technology-driven and domain-fusion development, accelerating the process of scientific research and greatly expanding the boundaries of scientific exploration. With the continuous advancement of artificial intelligence technology, its application in scientific research is gradually moving from theoretical exploration to practical application, becoming an important force driving scientific discovery. From fundamental physics to biomedicine, from astronomy to materials science, application scenarios for AI are continuously expanding, providing scientists with brand-new research tools and methods. Globally, numerous scientific research institutions and universities have invested resources to explore AI applications in different scientific fields; the market scale and influence of AI + Scientific Discovery are also continuously expanding, demonstrating tremendous development potential and broad application prospects.

AI + Scientific Discovery refers to a model that utilizes artificial intelligence technologies—including machine learning, deep learning, data mining, and natural language processing—to optimize and innovate scientific research processes. Through intelligent tools and platforms, it helps scientists process and analyze massive scientific data, discover hidden patterns and regularities within the data, thereby accelerating the process of scientific discovery. The core of AI + Scientific Discovery lies in utilizing data-driven methods combined with domain knowledge to provide new perspectives and solutions for scientific research, driving innovation in scientific theory and advancement in experimental technology.

The product forms of AI + Scientific Discovery are rich and diverse, covering domains from data analysis platforms to intelligent experimental assistants. Data analysis platforms can process and analyze large-scale scientific data, such as genomics data and astronomical observation data, helping scientists quickly discover patterns in data. Intelligent experimental assistants can provide scientists with experimental design and data analysis support by simulating experimental conditions and optimizing experimental parameters. Furthermore, there are scientific literature mining tools, intelligent prediction models, etc. These products integrate AI technology, not only improving the efficiency and accuracy of scientific research but also providing scientists with more convenient and efficient research experiences. As technology continues to mature, the product forms of AI + Scientific Discovery will further expand and deepen to meet the needs of diverse scientific research scenarios.

The main characteristics of AI + Scientific Discovery are reflected in three aspects: data-driven discovery, intelligence assisted research, and cross-domain fusion innovation.
- Data-Driven Discovery: By analyzing massive scientific data, utilizing machine learning and deep learning algorithms to mine hidden patterns and regularities, providing new hypotheses and directions for scientific research.
- Intelligent Assisted Research: Utilizing natural language processing and machine learning technologies to provide scientists with comprehensive support in literature mining, experimental design, data analysis, etc., helping scientific research work to be completed more efficiently.
- Cross-Domain Fusion Innovation: By combining knowledge and technologies from different disciplinary fields, promoting the application of AI in more scientific fields

and facilitating interdisciplinary integration.

These characteristics collectively promote the intelligent transformation of scientific research, making it more efficient, precise, and innovative, laying a solid foundation for the future development of science.

Based on full-sample statistical data, AI + Scientific Discovery is currently in a critical period of transformation from frontier exploration to industrial implementation, exhibiting characteristics of coexisting high technological barriers and high growth potential. Globally, there are 331 startups in this field, with a total valuation reaching $245.2 billion. Although its quantity share does not occupy an absolute advantage in the global landscape, this reflects that a large number of enterprises in this field are still in early-stage R&D phases, with enormous future appreciation potential.

Focusing on the China market, AI + Scientific Discovery demonstrates extremely high activity, with a total of 74 enterprises entering the field, accounting for approximately 11% of China's total AI enterprises, with a total valuation of $46.9 billion. More importantly, China's enterprise quantity and valuation amount in this field account for 22% and 19% of the global total in the same field, respectively. This proportion is significantly higher than China's average share in the overall AI sector, indicating that China already possesses a globally leading scale advantage in the "hard technology" track combining basic science and artificial intelligence, and is becoming an important pole driving the transformation of global scientific paradigms.

From the geographic distribution dimension of countries and cities (see Figure 3-6, Figure 3-7, and Figure 3-8), the global landscape of AI + Scientific Discovery presents a pattern dominated by China and the United States with breakthroughs at multiple points. The United States occupies half of the globe space with 163 enterprises and a total valuation of approximately $172.9 billion, particularly maintaining leadership in biocomputing and quantum technology; China follows closely, ranking second with 74 enterprises and a valuation of approximately $46.9 billion, with a scale far exceeding the United Kingdom (32 enterprises) and subsequent countries such as Canada and Germany.

At the city level, because scientific discovery is highly dependent on top-tier scientific research resources, global Top 10 cities are almost all world-class academic and sci-tech innovation centers. Notably, Beijing ranks first globally with 28 companies, surpassing San Francisco (22) and Cambridge (19). This benefits from Beijing's dense concentration of universities and research institutes and policy support, making it the global innovation source for AI for Science. Furthermore, Shenzhen (6th globally), Shanghai (3rd in China), and Hangzhou (4th in China) also perform well, forming a multi-polar support for China in this field; US innovation is highly concentrated in the West Coast tech circle centered on San Francisco and the East Coast biomedicine circle centered on Cambridge/Boston.

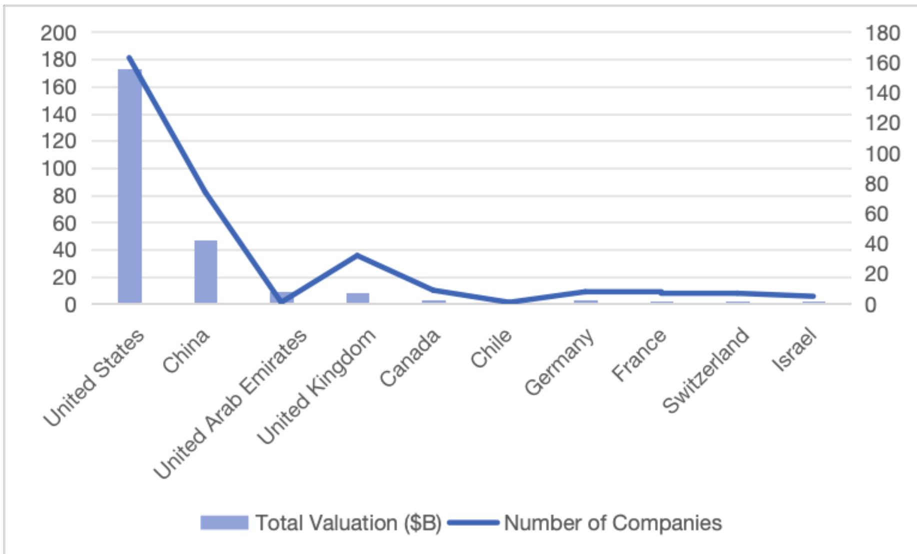

Figure 3-6 Top 10 Countries/Regions by Global AI + Scientific Discovery Valuation

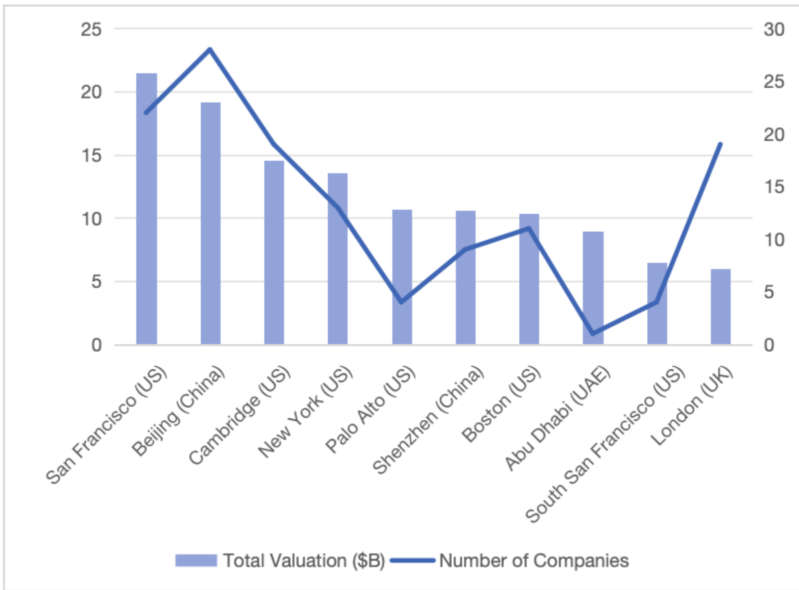

Figure 3-7 Top 10 Cities by Global AI + Scientific Discovery Valuation

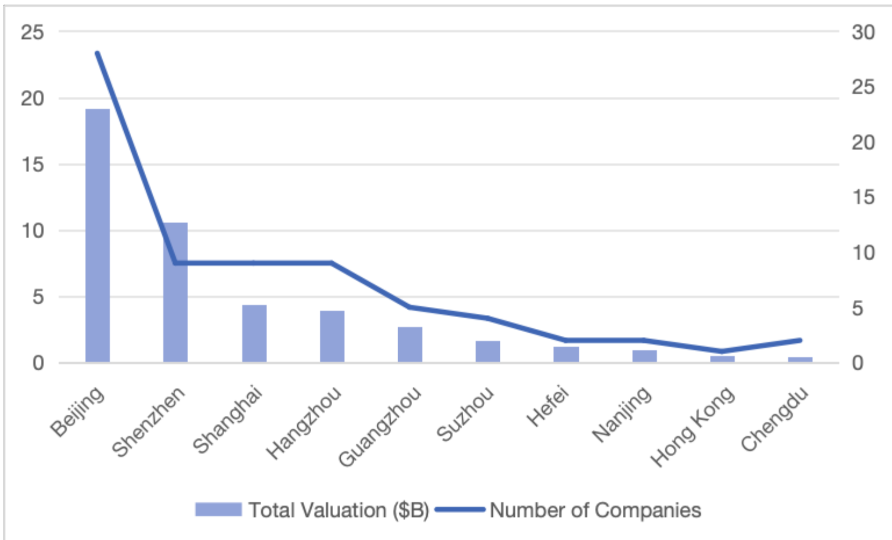

Figure 3-8 Top 10 Cities by China AI + Scientific Discovery Valuation

According to data shown in Table 3-2, the average valuation of head enterprises in the global AI + Scientific Discovery field is as high as $4.176 billion, far exceeding the Chinese same-category enterprise average of $1.619 billion. This indicates that global markets have greater capital investment intensity in this frontier field, with relatively more mature business models and technology validation. However, in-depth analysis of the list reveals a significant trend: multiple Chinese enterprises such as Beijing MegaRobo Technology, Beijing Qudong Technology, and Shenzhen XtalPi Technology have simultaneously entered the global Top 10 ranks. This not only breaks the previous absolute monopoly of European and American enterprises in basic scientific R&D tools but also proves that China already possesses world-class competitiveness in sub-tracks such as automated laboratories, AI computing infrastructure, and drug R&D. From the industry distribution perspective, although biomedicine (such as Insitro, GeneDx, BioMap) remains the most important application scenario for AI scientific discovery, the list also sees the emergence of enterprises such as KoBold Metals (mineral exploration), SandboxAQ (quantum technology), and Xinhangji (EDA chip design), showing that AI technology is crossing single disciplines and penetrating broader basic science fields such as materials science, geology, and quantum physics, driving a profound transformation of the research paradigm from “experimental verification” to “computational simulation and prediction”.

Table 3-2 List of Global and China AI + Scientific Discovery Startups (Top 10)

Global Average Value: $4.176 Billion USD	China Average Value: $1.619 Billion USD
Beijing MegaRobo Technology Co., Ltd. (MegaRobo)	BioMap (Beijing) Intelligence Technology Co., Ltd. (BioMap)
Beijing Qudong Technology Co., Ltd. (VirtAITech)	Beijing Fenzizhixin Technology Co., Ltd. (MoleculeMind)
GeneDx, Inc.	Beijing MegaRobo Technology Co., Ltd. (MegaRobo)
Generate Biomedicines, Inc.	Beijing Qudong Technology Co., Ltd. (VirtAITech)
Group 42 Holding Ltd. (G42)	Beijing Shenshi Technology Co., Ltd. (DP Technology)
Insitro, Inc.	Jitai Technology (Hangzhou) Co., Ltd. (METiS Therapeutics)
KoBold Metals Co	Nuodi Intelligence (Beijing) Co., Ltd. (Knowledgeworks)
Lila Sciences, Inc.	Qiyuan Shijie (Beijing) Technology Co., Ltd. (Qiyuan World)
Sandbox AQ Inc.	Shenzhen Jingtai Technology Co., Ltd. (XtalPi)
Shenzhen Jingtai Technology Co., Ltd. (XtalPi)	Xinxingji Technology Co., Ltd. (X-EPIC)

*Sorted alphabetically by company name

Among representative enterprises globally and in China, various leaders are utilizing AI to reconstruct the underlying logic of scientific exploration. Globally, SandboxAQ, spun off from Alphabet, focuses on the combination of quantum technology and AI, using simulation technology to solve complex problems in drug R&D, materials science, and cybersecurity, demonstrating the tremendous potential of “quantum + AI” in breaking through computing bottlenecks; Insitro, founded by renowned scientist Daphne Koller, is committed to building a closed-loop system of high-throughput biology and machine learning, fundamentally reshaping the drug discovery process by generating massive high-quality biological data to train predictive models.

Focusing on the China market, Beijing DP Technology Co., Ltd., as a firm practitioner of the “AI for Science” concept, relies on its pioneering “multi-scale modeling + machine learning” algorithm (DeepPotential) to effectively solve the pain point of balancing accuracy and efficiency in microscopic molecular simulation, providing a powerful underlying computing platform for materials design and drug R&D; BioMap focuses on the R&D of ultra-large-scale models in the life sciences field, with its xTrimo platform committed to decoding the “language of life” of proteins, accelerating the design of innovative drugs and biomaterials. Meanwhile, Shenzhen XtalPi Technology Co., Ltd., as a benchmark enterprise simultaneously selected for both the global and China lists, relies on a comprehensive R&D platform of “quantum physics + artificial intelligence + automated robotics”. It not only connects innovation resources across China and the United States but has also established global leadership in crystal structure prediction and drug solid-state R&D. The exploration of these enterprises indicates that AI + Scientific Discovery is gradually evolving from a single tool-assisted role to a core engine driving original scientific innovation.

From the value creation driving dimensions (see Figure 3-9 and Figure 3-10), there are significant differences in innovation paths between global and Chinese AI + Scientific Discovery enterprises. Global AI startups are highly dependent on “technological novelty”, with its proportion as high as 39%, far exceeding other dimensions. This reflects that the field of scientific discovery is essentially driven by source technology breakthroughs (such as AlphaFold’s disruption of structural biology), with technological barriers being the core moat for enterprises. In contrast, although Chinese AI startups also value “technological novelty” (28%), “market factors” account for the highest proportion, reaching 33%. This data characteristic indicates that while possessing core technologies, Chinese enterprises place greater emphasis on the engineering implementation and commercial monetization of technology. For example, by providing automated experimental equipment or CRO services to quickly enter the market, this “interim commercialization” model helps enterprises maintain survival and achieve financial self-sufficiency during the long-cycle process of scientific exploration. Furthermore, “risk and team” occupies a high proportion in both (30% globally, 26% in China), indicating that this field has extremely high dependence on interdisciplinary top-tier talent.

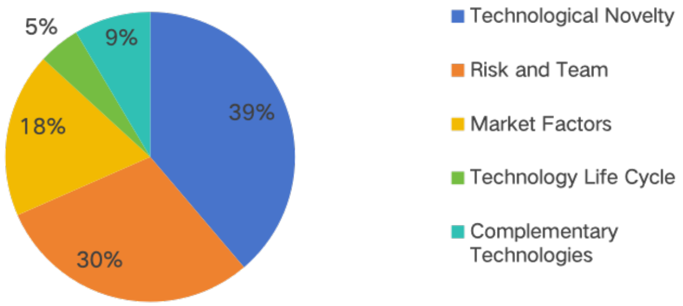

Figure 3-9 Value Creation Dimensions of Global AI + Scientific Discovery Startups (%)

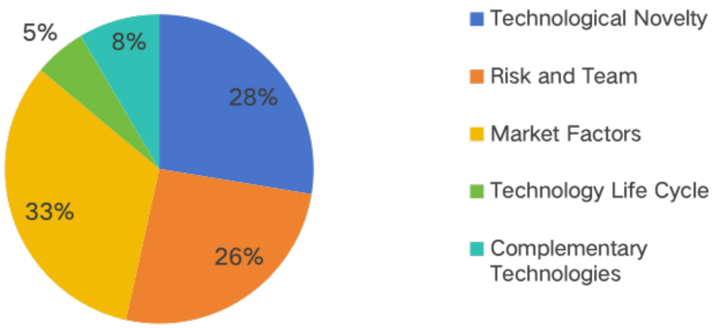

Figure 3-10 Value Creation Dimensions of China AI + Scientific Discovery Startups (%)

The engineering implementation capabilities and scale advantages demonstrated by Chinese enterprises in the “AI for Science” field provide an empirical foundation for the popularization of global technological innovation, and are deeply aligned with core goals such as SDG 9 (Industry, Innovation and Infrastructure) and SDG 13 (Climate Action). As a general enabling technology, AI + Scientific Discovery is not only a tool for improving basic research efficiency but also a key means to address global challenges such as climate change. Data shows that China ranks first globally in the number of startups in this field, with Beijing surpassing San Francisco to become the core source with the advantage of 28 enterprises. This distribution pattern creates feasible conditions for cross-border technology spillover and South-South knowledge transfer. To maximize technology dividends, it is recommended to establish a “Global South AI for Science Network”. Through this multilateral mechanism, emerging economies can effectively share AI R&D capabilities in fields such as climate change modeling, exploration of next-generation green materials, and agricultural biological breeding, thereby empowering vast developing countries to accelerate the improvement of indigenous scientific research infrastructure and enhancing the overall resilience of global responses to sustainable development challenges through technological synergy.

3.3 AI + Education

The development trend of AI + Education demonstrates characteristics of rapid advancement and deep integration, profoundly changing the forms and models of education. With the continuous advancement of artificial intelligence technology, the education sector has become an important frontier for AI technology applications. From personalized learning to intelligent tutoring, from educational management to teaching assessment, application scenarios for AI are continuously expanding, driving education’s transformation from traditional models toward intelligent and personalized directions. Globally, an increasing number of educational institutions and enterprises have begun actively exploring AI applications in education, investing substantial resources in technology R&D and product innovation; the market scale of AI + Education is also continuously expanding, demonstrating broad development prospects.

AI + Education refers to a model that utilizes artificial intelligence technologies—including machine learning, natural language processing, computer vision, etc.—to optimize and innovate educational processes. Through intelligent tools and platforms, it provides students with personalized learning experiences while helping teachers conduct teaching management and assessment more efficiently. The core of AI + Education lies in utilizing data-driven methods to provide customized teaching content and feedback based on students' learning progress, interests, and abilities, thereby significantly improving learning effectiveness and educational quality.

The product forms of AI + Education are rich and diverse, covering domains from intelligent learning platforms to virtual teaching assistants. Intelligent learning platforms can recommend suitable learning paths and content based on student learning data, achieving personalized learning for thousands of individuals. Virtual teaching assistants can provide students with real-time Q&A and tutoring services through natural language interaction. Furthermore, there are intelligent homework grading systems, learning behavior analysis tools, etc. These products integrate AI technology, not only improving teaching efficiency but also providing students with more convenient and efficient learning experiences. As technology continues to mature, the product forms of AI + Education will further expand and deepen to meet the needs of diverse educational scenarios.

The main characteristics of AI + Education are reflected in three aspects: personalized learning, intelligent tutoring, and data-driven decision-making.
- Personalized Learning: By analyzing student learning data, tailoring learning plans for each student to precisely meet diverse learning needs.
- Intelligent Tutoring: Utilizing natural language processing technology to provide students with real-time Q&A and guidance, helping students immediately resolve pain points in learning.
- Data-Driven Decision-Making: By collecting and analyzing various data generated during educational processes, providing scientific decision-making support for

teachers and educational administrators, optimizing teaching management and resource allocation.

These characteristics collectively promote the intelligent transformation of education, making it more efficient, precise, and personalized, laying a solid foundation for the future development of education.

Based on full-sample statistical analysis, although this field accounts for a relatively limited share in the global AI industry total, China’s participation is extremely high, presenting significant “duopoly” and “high agglomeration” characteristics. Data shows that there are 112 AI + Education companies globally, accounting for approximately 2.2% of the global AI total. However, focusing on the China market, AI + Education enterprises have reached 50, accounting for approximately 7% of China’s total AI enterprises. A more critical statistic is that China’s global share in this segment is extremely high, with company quantity and valuation amount accounting for 45% and 47% of the global total in the same field, respectively. This means that in the global AI education landscape, China not only occupies half the territory but also jointly dominates the industry’s development direction with the United States.

From the geographic distribution dimension of countries and cities (see Figure 3-11, Figure 3-12, and Figure 3-13), the competitive landscape of AI + Education is highly concentrated in China and the United States. The United States ranks first globally with 46 companies and a total valuation of approximately $47.987 billion; China follows closely, competing on equal terms with 50 companies (quantity surpassing the US) and a valuation of approximately $46.057 billion. The two countries collectively occupy over 90% of global market share, far exceeding the United Kingdom (approximately $1.086 billion) ranked third. At the city level, the performance of Chinese cities is particularly striking. In the global Top 10 cities’ list, Shanghai ranks first globally with 7 companies and a total valuation as high as $18.493 billion, demonstrating a strong head enterprise agglomeration effect; Beijing ranks second globally with the advantage of 16 companies, being the most active region for enterprise incubation; Shenzhen and Hangzhou also perform well, ranking third and seventh, respectively. In contrast, although San Francisco, New York, and Palo Alto in the United States also rank among the top ten, in terms of single-city valuation explosive power, Shanghai occupies a clear advantage in this sample data. This city-core industrial cluster effect provides fertile soil for technology implementation and deep cultivation of application scenarios.

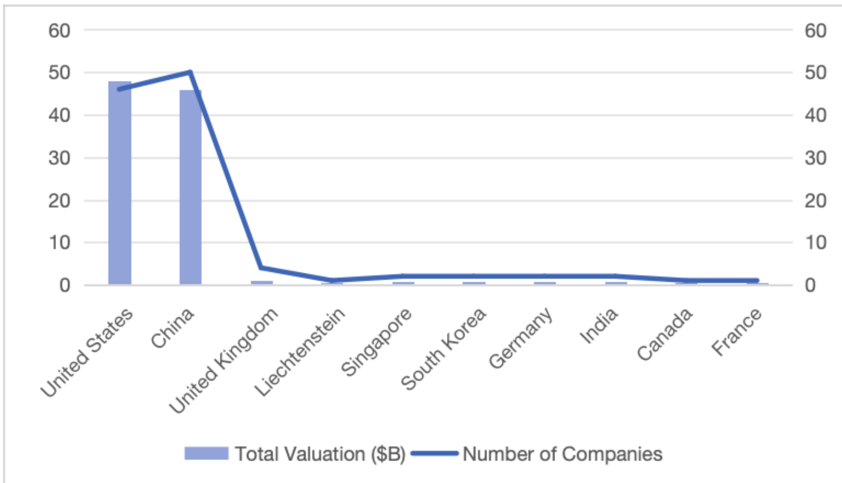

Figure 3-11 Top 10 Countries/Regions by Global AI + Education Valuation

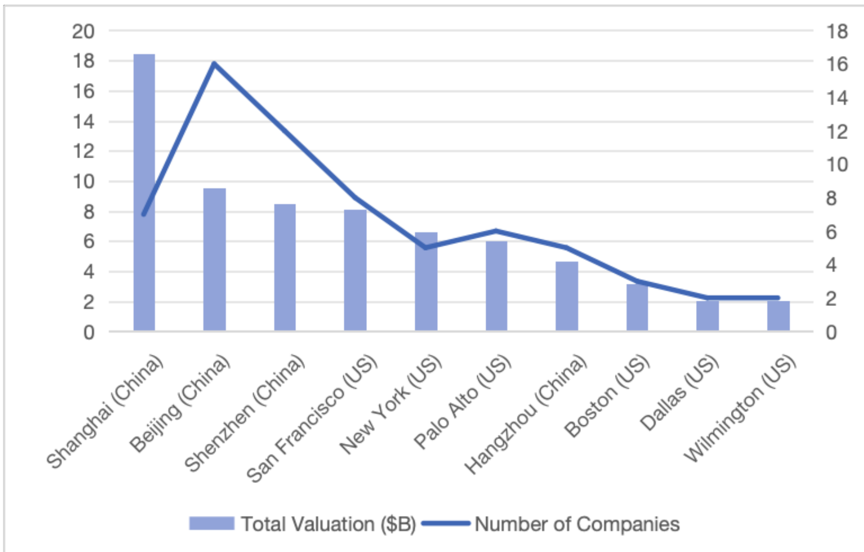

Figure 3-12 Top 10 Cities by Global AI + Education Valuation

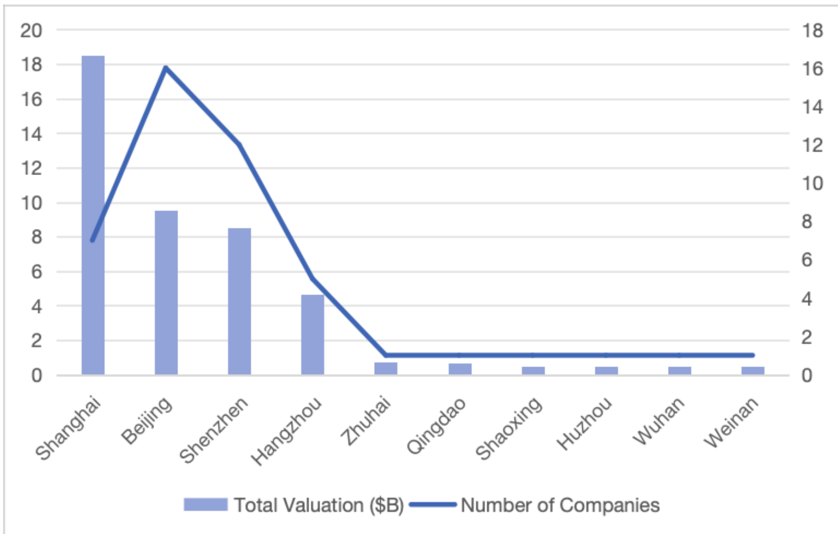

Figure 3-13 Top 10 Cities by China AI + Education Valuation

In the competitive landscape of head enterprises, the valuation gap between global and China AI + Education Top 10 startups is extremely small, and Chinese enterprises dominate the global list. According to data shown in Table 3-3, the average valuation of global Top 10 enterprises is $2.968 billion, while the average for China Top 10 is $2.684 billion, with the two almost on a par. Notably, observing the "List of Global AI + Education Startups (Top 10)" reveals that it includes multiple Chinese enterprises such as Beijing Qudong Technology, Hangzhou DeepSeek, Leju Robotics, Xmov, SenseTime, Xiaodu, and CodeMao. This further confirms that Chinese enterprises are already in the global first echelon in terms of technical strength and commercial value. These enterprises cover the entire industrial chain from underlying computing power optimization (Qudong Technology), large model fundamental research (DeepSeek) to application-layer intelligent hardware (Xiaodu), STEAM education (CodeMao), and virtual content generation (Xmov), showing that the industry has transformed from single "photo search for answers" to deeper technology empowerment.

Table 3-3 List of Global and China AI + Education Startups (Top 10)

Global Average Value: $2.968 Billion USD	China Average Value: $2.684 Billion USD
Beijing Qudong Technology Co., Ltd. (VirtAITech)	Beijing Qudong Technology Co., Ltd. (VirtAITech)

GPTZero, Inc.	Guangdong Leapfive Technology Co., Ltd. (Leapfive)
Hangzhou DeepSeek Artificial Intelligence Basic Technology Research Co., Ltd. (DeepSeek)	Hangzhou DeepSeek Artificial Intelligence Basic Technology Research Co., Ltd. (DeepSeek)
Leju (Shenzhen) Robotics Co., Ltd.	Leju (Shenzhen) Robotics Co., Ltd.
MagicSchool AI, Inc.	Mofa (Shanghai) Information Technology Co., Ltd. (Xmov)
Merlyn Mind Inc.	Shanghai SenseTime Intelligent Technology Co., Ltd.
Mofa (Shanghai) Information Technology Co., Ltd. (Xmov)	Shanghai Xiaodu Artificial Intelligence Co., Ltd. (Xiaodu)
Shanghai SenseTime Intelligent Technology Co., Ltd.	Shanghai Youbijie Education Technology Co., Ltd. (UBTECH Education)
Shanghai Xiaodu Artificial Intelligence Co., Ltd. (Xiaodu)	Shenzhen Dianmao Technology Co., Ltd. (CodeMao)
Shenzhen Dianmao Technology Co., Ltd. (CodeMao)	Shenzhen Xuanyuan Technology Co., Ltd.

*Sorted alphabetically by company name

Global and Chinese representative enterprises are redefining the future of education through their respective innovation paths. Among global representative enterprises, Merlyn Mind Inc. focuses on building AI digital assistants for teachers, automating classroom workflows through natural language processing technology, aiming to liberate teachers from tedious administrative work and return to the essence of teaching. Meanwhile, Shanghai SenseTime Intelligent Technology Co., Ltd. and Shanghai Xiaodu Artificial Intelligence Co., Ltd., simultaneously selected as global and Chinese representative enterprises, represent typical characteristics of the Chinese path: SenseTime utilizes its deep accumulation in computer vision to develop AI education solutions integrating teaching materials, teaching aids, and teaching platforms, and has launched C-end intelligent consumer hardware such as "Yuan Luobo" (SenseRobot), achieving dual-wheel drive of B-end and C-end; Xiaodu Artificial Intelligence relies on Baidu's large model capabilities to provide personalized tutoring and interactive services for home scenarios through hardware terminals such as smart screens and learning tablets. Furthermore, Chinese representative enterprise Xmov (Shanghai) Information Technology Co., Ltd. provides more vivid and interactive virtual lecturer solutions for online education through high-quality 3D virtual human technology, greatly enriching the presentation forms of teaching content.

Finally, from the value creation dimensions (see Figure 3-14 and Figure 3-15), global and Chinese AI + Education enterprises present completely different driving logics. Global AI startups are highly dependent on “technological novelty”, with its proportion as high as 42%, indicating that international markets place greater value on breakthroughs in underlying algorithms and disruptive technology applications (such as innovations of generative AI in personalized teaching); “risk and team” accounts for 30%, reflecting the emphasis on top talent and entrepreneurial backgrounds. In contrast, the value creation distribution of Chinese AI startups is relatively balanced but with different emphases, with “market factors” accounting for the highest proportion at 32%. This indicates that Chinese enterprises are more adept at finding implementation scenarios in the vast education consumer market, creating value through business model innovation and rapid market penetration; “risk and team” (28%) and “technological novelty” (27%) follow closely, showing that the Chinese market is in a process of transformation from model-driven to technology-driven, valuing both technology implementation capabilities and teams’ market-oriented operation levels.

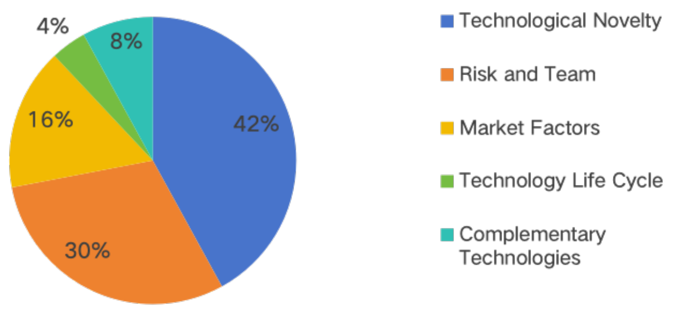

Figure 3-14 Value Creation Dimensions of Global AI + Education Startups (%)

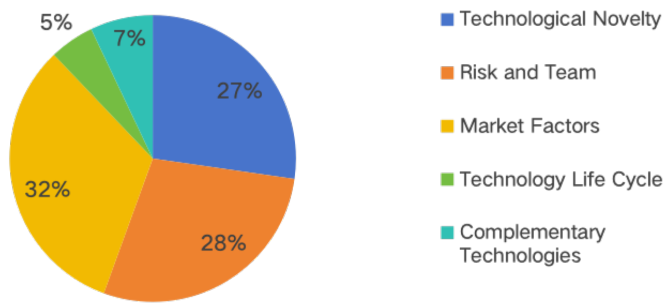

Figure 3-15　Value Creation Dimensions of China AI + Education Startups (%)

Achieving large-scale penetration of technology in the vast education consumer market not only validates the effectiveness of relevant business models but also highlights the tremendous potential of AI + Education in advancing SDG 4 (Quality Education). Currently, China's enterprise quantity and valuation in this field are on a par with the United States, demonstrating the feasibility for developing economies to achieve leapfrog development in the digital education track. However, while AI reshapes the education system, we must be highly vigilant against the risk of the continuously expanding "digital education divide": in vast developing regions, student populations lacking stable internet access and basic intelligent devices are easily marginalized by the wave of intelligent education. To ensure educational equity, the development of AI + Education must be embedded within an inclusive policy framework. In promoting global education and South-South cooperation, the international community should advocate and promote an "offline-first" AI education application model. By introducing technologies such as edge computing to lightweight deployed cloud-dependent AI tutoring models to local terminals, it can ensure that students in underdeveloped areas with low-bandwidth or no-network environments can still access high-quality, personalized intelligent learning resources, thereby effectively leveraging AI's policy intervention utility in eliminating educational inequality.

3.4 AI + Agriculture

The development trend of AI + Agriculture demonstrates a significant trend of technology empowerment and industrial fusion, driving agricultural production toward intelligent, efficient, and sustainable directions. With the continuous maturation of artificial intelligence technology, its application in the agricultural field is gradually moving from theoretical research to practical application, becoming an important means to improve agricultural production efficiency, ensure food security, and promote sustainable agricultural development. From precision agriculture to intelligent breeding, from agricultural product quality inspection to agricultural supply chain management, application scenarios for AI are continuously expanding, providing strong support for the transformation and upgrading of the agricultural industry. Globally, numerous agricultural technology enterprises, agricultural research institutions, and government departments have invested resources to explore AI applications in agriculture; the market scale and influence of AI + Agriculture are also continuously expanding, demonstrating tremendous development potential and broad application prospects.

AI + Agriculture refers to a model that utilizes artificial intelligence technologies—including machine learning, deep learning, image recognition, natural language processing, and the Internet of Things—to optimize and innovate agricultural production processes. Through intelligent tools and platforms, it helps farmers and agricultural enterprises achieve precision planting, intelligent breeding, pest and disease monitoring, agricultural product quality inspection, and other functions, thereby significantly improving agricultural production efficiency, reducing costs, and ensuring agricultural product quality. The core of AI + Agriculture lies in utilizing data-driven methods combined with professional knowledge in the agricultural field to provide intelligent solutions for agricultural production, driving agriculture toward modernization and ‘intelligentization’.

The product forms of AI + Agriculture are rich and diverse, covering domains from intelligent monitoring systems to agricultural robots. Intelligent monitoring systems can collect real-time data on soil moisture, temperature, lighting, etc. through sensor networks, combined with meteorological data, to provide farmers with precise planting recommendations. Agricultural robots can perform tasks such as sowing, irrigation, and harvesting, improving agricultural production efficiency. Furthermore, there are intelligent pest and disease monitoring systems, agricultural product quality inspection equipment, agricultural supply chain management platforms, etc. These products integrate AI technology, not only improving the efficiency and quality of agricultural production but also providing more convenient and efficient services for farmers and agricultural enterprises. As technology continues to mature, the product forms of AI + Agriculture will further expand and deepen to meet the needs of diverse agricultural production scenarios.

The main characteristics of AI + Agriculture are reflected in three aspects: precision production, intelligent management, and service-oriented expansion.

- Precision Production: By analyzing farmland soil, meteorological and crop growth data, utilizing machine learning algorithms to provide precise planting and irrigation recommendations, reducing resource waste and improving yield and quality.
- Intelligent Management: Utilizing Internet of Things and image recognition technologies to achieve automated monitoring and management of agricultural production processes, such as intelligent breeding systems that can monitor animal health status in real time and automatically adjust breeding environments.
- Service-Oriented Expansion: By integrating upstream and downstream resources in the agricultural industry chain, providing services such as agricultural product quality inspection, market forecasting, and supply chain optimization, helping agricultural enterprises enhance market competitiveness.

These characteristics collectively promote the intelligent transformation of agriculture, making agricultural production more efficient, precise, and sustainable, laying a solid foundation for the future development of agriculture.

Based on full-sample statistical data, although AI + Agriculture accounts for a relatively small share in the global artificial intelligence industry overall, it is one of the segments where China performs most prominently, demonstrating extremely high international competitiveness. Globally, there are 79 startups in the AI + Agriculture field, accounting for approximately 1.5% of the total number of global AI startups, with a total valuation of $23.1 billion. However, focusing on the China market, performance in this field far exceeds the global average: China possesses 26 AI + Agriculture enterprises, accounting for approximately 4% of China's total AI enterprises, with their total valuation as high as $9.9 billion, accounting for 2% of China's total valuation. The most critical data is that China's enterprise quantity in this field accounts for 33% of the global total in the same field, while valuation amount accounts for as much as 43% of the global total in the same field. This share approaching half the territory (43%) is extremely rare among all AI segments, fully demonstrating that China's investment in AI-enabled agricultural modernization and 'intelligentization' is not only massive but has also produced extremely high-value head enterprises, making China an important pole in global AI + Agriculture development.

From the geographic distribution dimension of countries and cities (see Figure 3-16, Figure 3-17, and Figure 3-18), the global competitive landscape of AI + Agriculture presents a significant "China-US dual leadership" characteristic, and China's agglomeration effect in head cities even surpasses that of the United States. At the national level, China ranks first globally with 26 companies, slightly higher than the United States' 22; in total valuation, the United States narrowly defeats China with approximately $10.6 billion versus China's $9.9 billion, with the two countries far outranking Singapore (approximately $720 million) and subsequent countries such as India and the United Kingdom.

At the city level, global AI + Agriculture innovation centers have undergone a profound eastward shift. Beijing ranks first globally with absolute advantage, with 8 companies and a total valuation as high as $6.83 billion; its valuation scale even exceeds the combined total of second-ranked Shenzhen ($1.74 billion) and third-ranked Boston in the United States (approximately $1 billion). Shenzhen, Suzhou, Shanghai, and Hangzhou have also made the list, indicating that China has formed an industrial cluster with Beijing as the core R&D highland and Shenzhen and Suzhou as hardware and application implementation centers. In contrast, US AI agricultural innovation is more dispersed, failing to form a single core city with absolute dominance like Beijing.

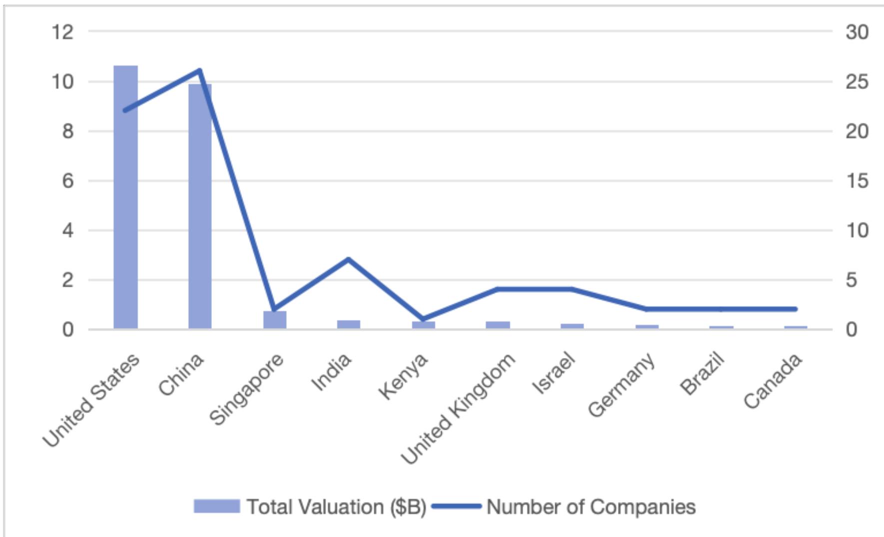

Figure 3-16 Top 10 Countries/Regions by Global AI + Agriculture Valuation

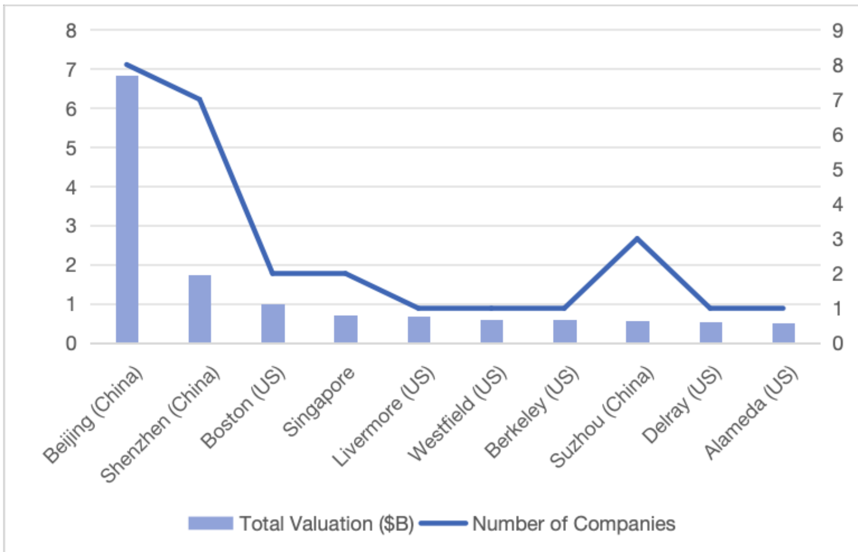

Figure 3-17 Top 10 Cities by Global AI + Agriculture Valuation

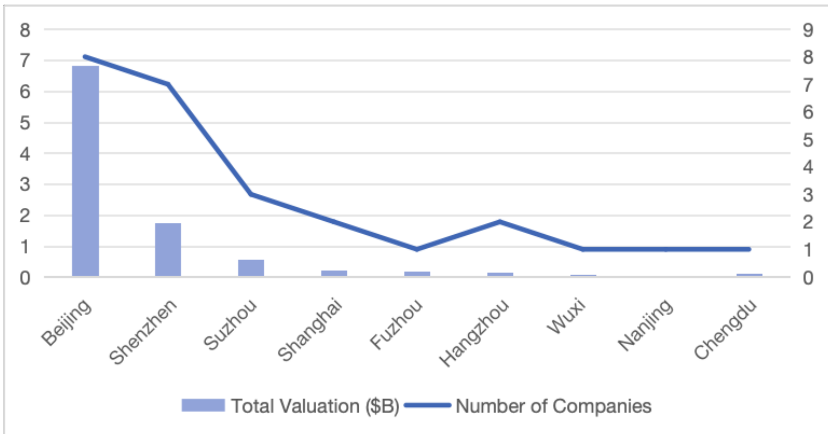

Figure 3-18   Top 10 Cities by China AI + Agriculture Valuation

According to data shown in Table 3-4, the average valuation of global Top 10 AI + Agriculture enterprises is $1.106 billion, while the average for Chinese same-category enterprises is $890 million. Compared with other industries, the valuation gap between domestic and foreign enterprises in the AI + Agriculture field is relatively small, mainly benefiting from China's deep accumulation in hardware and application layers such as drones, automated control, and supply chain management. Particularly noteworthy is that in the global Top 10 list, multiple Chinese enterprises (or enterprises with deep Chinese backgrounds) such as Beijing MegaRobo Technology, Beijing Yunsheng Intelligence, CloudMinds, and Shenzhen Qianhai Yueshi occupy half the territory. This fully demonstrates that Chinese AI + Agriculture enterprises already possess extremely strong global competitiveness in technology implementation capabilities and market scaling. From the perspective of sub-tracks, listed enterprises present obvious characteristics of "software-hardware combination": on the one hand, there are intelligent agricultural machinery and autonomous driving technologies represented by Monarch Tractor and FJ Dynamics, committed to solving labor shortage problems; on the other hand, there are data-driven precision agriculture services represented by BeeHero (intelligent pollination) and Taranis (crop monitoring). Furthermore, the inclusion of enterprises such as Qianhai Yueshi, which focuses on agricultural cold chain logistics digitization, also marks that AI technology is deeply extending from pure production links to circulation and supply chain links, building a whole-industry-chain intelligent ecosystem.

Table 3-4 List of Global and China AI + Agriculture Startups (Top 10)

Global Average Value: $1.106 Billion USD	China Average Value: $0.89 Billion USD
BeeHero Inc.	Beijing Aqrose Technology Co., Ltd. (Aqrose Technology)
Beijing MegaRobo Technology Co., Ltd. (MegaRobo)	Beijing MegaRobo Technology Co., Ltd. (MegaRobo)
Beijing Yunsheng Intelligent Technology Co., Ltd.	Beijing Yunsheng Intelligent Technology Co., Ltd.
CloudMinds (Beijing) Co., Ltd.	CloudMinds (Beijing) Co., Ltd.
FJ DYNAMICS TECHNOLOGY LTD	Fujian Imperial Vision Technology Group Co., Ltd. (Imperial Vision)
Monarch Tractor, Inc.	Multiway Robotics (Shenzhen) Co., Ltd. (Multiway Robotics)
Profluent Bio, Inc.	Shanghai Tianrang Intelligent Technology Co., Ltd. (Tianrang)
Shenzhen Qianhai Yueshi Information Technology Co., Ltd.	Shenzhen Huazhi Intelligent Manufacturing Technology Co., Ltd.
Shiru Technologies, Inc.	Shenzhen Qianhai Yueshi Information Technology Co., Ltd.
Taranis, Inc.	Suzhou EAVision Robotic Technologies Co., Ltd. (EAVision)

*Sorted alphabetically by company name

Among representative enterprises globally and in China, a group of leading enterprises is reshaping the agricultural ecosystem through differentiated technological routes, among which Beijing MegaRobo Technology Co., Ltd. and Shenzhen Qianhai Yueshi Information Technology Co., Ltd. were simultaneously selected as global and Chinese representative enterprises, demonstrating their cross-regional industry influence. Although MegaRobo is renowned for life science automation, in the agricultural field it has become a model of “AI + Bio-agriculture” by building advanced automated laboratories and intelligent breeding platforms, utilizing AI to accelerate the R&D iteration of agricultural biotechnology; Shenzhen Qianhai Yueshi Information Technology Co., Ltd. delves deeply into the agricultural supply chain, utilizing artificial intelligence and Internet of Things technologies to build a cold chain logistics digitization platform, significantly reducing agricultural product circulation losses and improving overall supply chain efficiency. At the global dimension, FJ Dynamics, as a pioneer in digital agriculture, utilizes Beidou navigation and AI algorithms to achieve unmanned driving and precision operation of agricultural machinery such as tractors and rice transplanters, with business spanning multiple major agricultural countries worldwide. In the China market, Suzhou Jimu Robotics Technology Co., Ltd. has developed plant protection drones with binocular visual perception capabilities targeting China's complex and diverse terrain, effectively solving the mechanized operation challenges in non-structured scenarios such as hilly and mountainous areas. These enterprises collectively demonstrate the comprehensive penetration of AI + Agriculture from laboratory breeding, field precision operations to farm-to-table supply chain management, driving global agriculture toward standardization and 'intelligentization'.

From the value creation driving dimensions (see Figure 3-19 and Figure 3-20), there are obvious differences in development logic between global and Chinese AI + Agriculture enterprises. Global AI startups are highly dependent on "technological novelty", with its proportion as high as 39%, reflecting that international markets (particularly Europe and America) in agricultural technology focus more on source technology innovations such as biological breeding and gene editing combined with AI, as well as the R&D of new agricultural robots. In contrast, Chinese AI startups present characteristics dominated by "market factors", accounting for 31% (only 18% globally), ranking first. This profoundly reveals the pragmatic industrial characteristics of China's AI + Agriculture: enterprises focus more on solving actual pain points in agricultural production (such as labor shortages, circulation losses), acquiring market share through rapid scaled application of technologies such as drone plant protection and smart supply chains. At the same time, the proportion of "risk and team" in both is close (28% globally, 26% in China), indicating that agricultural technology features long cycles and complex environments, placing extremely high demands on teams' compound backgrounds and risk resistance capabilities. Overall, the global focus is on "0 to 1" technological invention, while China focuses on "1 to N" market application and efficiency improvement.

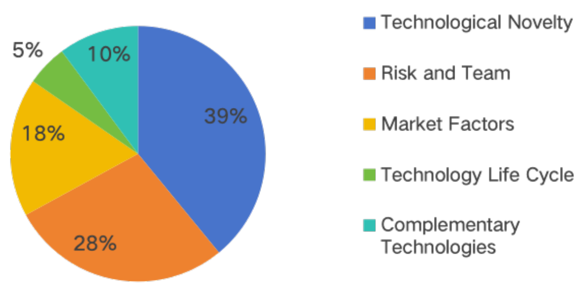

Figure 3-19　Value Creation Dimensions of Global AI + Agriculture Startups (%)

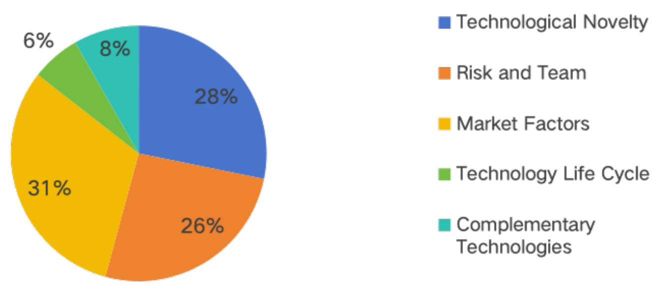

Figure 3-20　Value Creation Dimensions of China AI + Agriculture Startups (%)

This pragmatic application model expanding from underlying hard technology R&D to vast lower-tier markets, while building commercial competitive barriers, endows AI + Agriculture with key strategic value in achieving SDG 2 (Zero Hunger) and SDG 12 (Responsible Consumption and Production). Currently, China accounts for 43% of global valuation and 33% of enterprise numbers in this field, with Beijing ranking first globally among cities with a valuation of $6.83 billion. This “hard technology + large market” development path, through large-scale implementation of applications such as drone precision plant protection, smart cold chain logistics, and automated agricultural machinery, validates the feasibility that dispersed smallholder farmers can also substantially benefit from advanced AI technology, providing an empirical model with promotional value for addressing global food security challenges. This opens new space for South-South cooperation for developing countries similarly dominated by smallholder economies. In the future, the international community should explore establishing a "Global South Smart Agriculture Alliance", dedicated to promoting low-cost, easy-to-operate AI agricultural solutions adapted to local geographical and economic characteristics on a global scale. Through technological intervention, it will enhance total factor productivity in agriculture and effectively reduce supply chain losses, ensuring that the intelligent transformation of the global food system aligns with the core demands of sustainable development.

Conclusion: Toward Inclusive AI Development

2025 marks a critical watershed for the global artificial intelligence industry as it transitions from the “Wow Factor” to the “Utility Factor”. Based on full-sample tracking and analysis of nearly 6,000 AI startups worldwide, this report reveals that amid a torrent of capital reaching $400 billion annually and heading toward the $4 trillion mark, the AI industry is undergoing a rational return from early-stage “imaginary potential” to “commercial implementation and sustainable development”. The AI startup ecosystem has evolved from a mere competition over technical parameters into a complex, multi-dimensional game spanning computing infrastructure, top-tier talent reserves, and application-layer value capture.

Current trajectories indicate that this technological revolution is unfolding within an extremely polarized global landscape. High-income countries command the absolute majority of global innovation resources and venture capital, while the vast low- and middle-income countries, constrained by the “4C” framework (Connectivity, Compute, Context, and Competency), not only struggle to integrate into the core AI value chain but also face the severe risk of seeing entry-level cognitive jobs automated, thereby falling into “premature de-industrialization”. Without proactive policy intervention, AI is highly likely to become a centrifugal force in the global economy, further widening the digital divide between “haves” and “have-nots”, and undermining decades of international progress toward inclusive trade and development.

Nevertheless, the continuous evolution of technological paradigms also provides strategic opportunities to break this impasse. The proliferation of highly efficient small models and edge computing has dramatically reduced inference costs, while the rise of embodied intelligence is reshaping the path to automation in the physical world. These shifts enable developing countries to potentially bypass dependence on centralized cloud computing, offering a narrow but viable window for developing “Sovereign AI” and targeted specialized applications.

Therefore, ensuring AI serves as a global public good and a catalyst for the Sustainable Development Goals (SDGs) requires decisive international action in the following four areas:

1. Democratization of Compute and Infrastructure: Establish regional AI compute alliances and strongly support the deployment of edge computing and small-model ecosystems to significantly lower the hardware barriers to AI applications and reduce path dependence on the hyperscale cloud providers of a handful of countries.
2. Human Capital and Capacity Building: Implement targeted policies to curb the “brain drain” of AI talent from developing countries; simultaneously, reform education systems proactively with a focus on cultivating AI literacy and human-machine collaboration skills, to address the structural employment shocks and labor market polarization brought about by automation.
3. Contextualized AI for the Sustainable Development Goals: Deepen South-South cooperation to develop localized AI applications in critical areas such as climate-resilient agriculture, precision medicine, and scientific discovery; actively promote open-source datasets and models that reflect local linguistic diversity and cultural context, breaking the Anglo-centric monopoly on underlying data and context.
4. Governance and Inclusive Trade Frameworks: Develop international frameworks for cross-border data flows that balance technological innovation with data sovereignty; simultaneously, prudently address market risks arising from “vendor financing”, ensuring that infrastructure investments in developing countries do not devolve into unsustainable debt cycles or technological lock-in.

The future of AI should not be monopolized and determined by a small number of high-income countries and technology giants. Only through coordinated international development cooperation and an inclusive global governance framework can we transcend the barriers of capital and technology, and shape an intelligent future that is inclusive, equitable, and truly serves the sustainable development goals of all humanity.

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Appendix

1. Introduction to the OxValue Valuation Model

The OxValue valuation model is a leader in the AI-driven technology valuation space, built upon nearly a decade of technology valuation research by the relevant R&D team at the University of Oxford. The model's design is based on a groundbreaking Technology Value Utility theoretical framework, focusing on technological novelty, technology life cycle, market size, the presence of complementary technologies, and team capabilities and potential risks to determine valuation. Specifically, the OxValue valuation model is based on the VEST (Valuation of Early-stage Technology) tool, a unique and innovative methodology that leverages big data, econometric models, and machine learning for empirical estimation and model validation, conducting in-depth analysis to estimate the monetary value of a patent invention or a startup.

The core technology of the OxValue valuation model is embodied in the construction of AI-driven, large-scale professional databases across multiple industries and the intelligent optimization and updating of valuation algorithms. Building upon industry-specific valuation algorithms and market dynamics database operations, the AI engine enables pioneering expansion in the collection of valuation data, graphical presentation of valuation data, industry forecasting and risk analysis, competitive benchmarking analysis, and screening and recommendation of investment institutions. This makes the valuation process more rigorous and streamlined, the valuation results more comprehensive and intuitive, and enables more precise and direct access to target investors after obtaining valuation results.

As a disruptor in the global technology valuation field, OxValue valuation technology has received high recognition from international organizations such as WIPO (World Intellectual Property Organization) and Innovate UK, and has been prominently recommended by the UN Technology Innovation Platform. Meanwhile, its core theory has won the 2017 European Academy of Management Best Paper Award, the 2021 Falling Walls Science Breakthrough Award, and the 2024 Alibaba Cloud Global Summit Best AI Project Practice Award. The OxValue valuation model can provide accurate, efficient, objective, and economical technology valuation engines for multiple industries, empowering diverse entities including startups, financial institutions, investors, research institutions, and government agencies. It provides important reference indicators for technology investment, transfer, and commercialization decisions, accelerates the generation and scaling of new quality productive forces, and plays an important role in sustained and stable economic development.

2. Technical Pathway of the OxValue Valuation Model

The OxValue valuation model completes the entire valuation system through a theoretical framework, an architecture supported by two types of databases, three aspects of AI-driven guidance, and comprehensive data compliance (Figure 1).

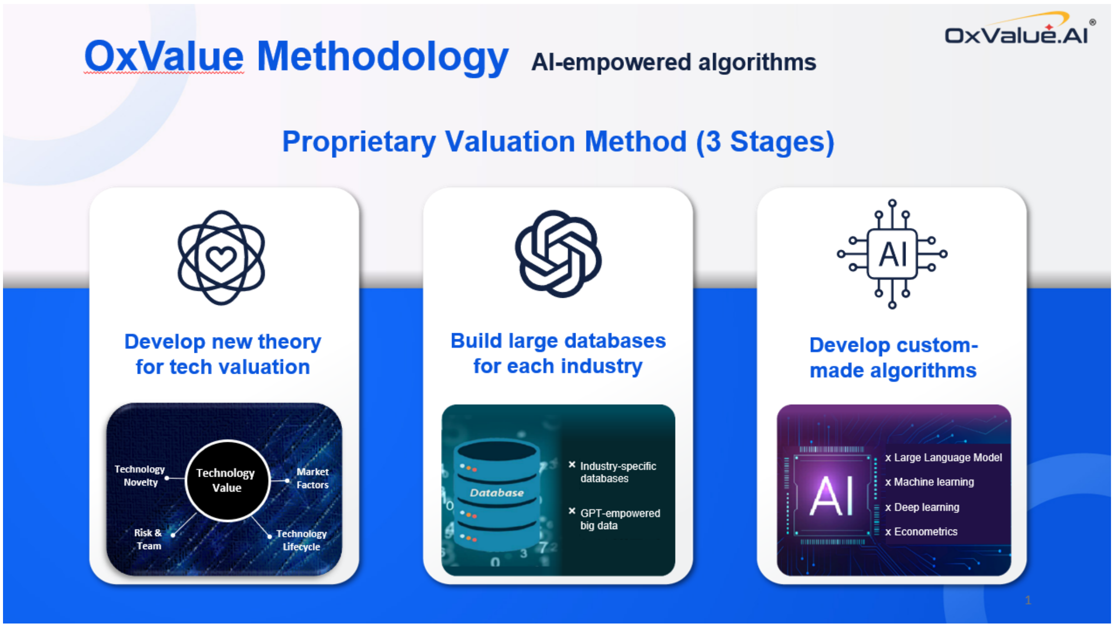

Figure 1 OxValue Valuation Framework

(1) A Theoretical Framework

OxValue technology valuation is grounded in the Technology Value Utility Theory pioneered by the OxValue AI valuation R&D team (Fu et al., 2017, 2024, 2026; Fu & Liu, 2022). This theory posits that the value of a technology is determined by the functional utility it can satisfy—that is, what market demand the technology meets, the degree to which it meets that demand (determined by the technology's novelty), whether the technical and institutional conditions required to fully meet market requirements (i.e., to fully realize its value) are satisfied, the position of the technology within the life cycle of its technical field (emerging, ascending, mature, declining), and the risks involved in realizing the technology's value (team capability). In short, this theory synthesizes five factors—technological novelty, market factors, technology life cycle, risk and team, and complementary technologies—taking the market utility of technology value as the standard parameter for judgment. It creates a disruptive, precise, objective, accessible, and economical advanced methodology for the valuation of patents and even startups.

(2) Support from Two Types of Databases

The construction of the OxValue system includes the establishment of two proprietary databases, supporting large-scale vertical databases for each industry.

i. Industry-Specific Databases

The purpose of the proprietary industry-specific databases is to complete data storage and analysis during the valuation process. These databases are divided by industry, expanding and becoming increasingly precise and comprehensive as industry valuation cases continue to grow.

ii. GPT-Enabled Big Data Foundation

The purpose of the GPT-enabled big data foundation is to provide data support for multiple macro and market analysis dimensions in the valuation report. In addition, for dynamic adjustments to technology valuation at specific time points, this database is also required to provide corresponding data to generate fluctuation curves and trend forecasts. To date, OxValue's valuation system and databases have utilized a total of 150 million patents, 340,000 startups, 58 million innovation teams, and data from various industries for testing and calculation.

(3) Three Aspects of AI-Driven Guidance

The construction of the OxValue valuation system achieves automated AI-driven guidance and data processing in three aspects.

During the training phase of industry valuation algorithm models, machine learning and deep learning methods are employed to train the generation of valuation models. Particularly for the floating changes in patent valuation based on time dimensions, AI is used to dynamically analyze industry trend data and technology development information, thereby dynamically adjusting the technology valuation of patents at different time nodes.

During the data collection phase of the valuation process, AI large language models and multimodal data processing mechanisms are adopted to improve data collection efficiency. AI large language-supported chatbots engage in human-computer interaction with users, answering users' questions about the valuation questionnaire and guiding them to submit correct answers. Users can submit documents, images, videos, audio recordings, and other multimodal data related to the valuation subject. AI will automatically organize the data and autonomously answer the designated questions in the valuation questionnaire, completing the valuation data collection process more efficiently.

During the generation and publication phase of technology valuation reports, AI assists in efficiently generating report text and corresponding data charts. The report includes not only a summary analysis and review of the valuation subject but also industry development trend analysis, opportunity and risk analysis, competitor analysis, and even matching recommendations for investment institutions.

(4) Comprehensive Data Compliance

The OxValue valuation system strictly adheres to comprehensive data compliance requirements. For example, considering compliance factors such as cross-border data transmission, all OxValue China-related data and algorithms are stored entirely within China, with storage and deployment conducted through local cloud service providers (such as Alibaba Cloud, Tencent Cloud, etc.).

3. Validity of the OxValue Valuation Model

The OxValue valuation model demonstrates superior predictive capability compared to most existing valuation methods. For example, researchers applied the OxValue valuation model to test 370 UK biopharmaceutical and medical technology companies, achieving a predictive capability exceeding 92%. At the same time, the company has completed nearly a hundred on-the-ground tests and localization developments domestically, achieving a 100% accuracy rate for the valuation of startups aged five years and under; when including startups over five years old, the valuation accuracy rate is 86%.

The characteristics of the OxValue valuation method also include:

(1) High. High accuracy. The OxValue intelligent valuation engine achieves a valuation accuracy rate exceeding 90% across multiple industries. Currently, the valuation methods developed in the fields of digital technology, biomedicine, and medical devices achieve accuracy rates of 86%, 91%, and 92% respectively. The industry average is only 21%.

(2) Fast. Fast valuation time. Utilizing fully automated deep learning algorithms and valuation report generation (GPT APIs), valuation results can be obtained within five minutes when data is complete.

(3) Economical. Low valuation cost. Based on vertical large models and big data training algorithms, with intelligent generation of results, the cost is less than one-tenth of traditional due diligence methods.

(4) Secure. Data protection security. Assessment data is derived from non-sensitive and objective data, not involving privacy issues of the valuation subject.

(5) Broad. Broad applicability. The platform valuation services cover eight popular industries and are particularly suitable for startups and innovation teams lacking financial data or comparable cases.

By providing startups and investors with the tools needed to correctly assess technology value, the OxValue valuation model will bring numerous benefits. Valuation transparency enables financial markets to operate more efficiently, allocate capital more effectively, and improve M&A decisions for all relevant parties. At the same time, this tool will also benefit governments by enabling them to better evaluate, assess, and acquire technology, providing guidance for intellectual property management decisions in areas such as technology transfer and public fund allocation.