

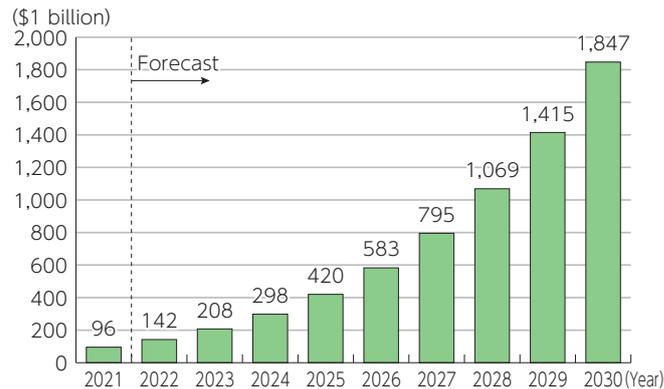
## Section 9 Trends in AI

### 1. Market overview

The size (in terms of sales) of the global AI market is expected to grow to 18.7148 trillion yen in 2022, up 78.4% from the previous year, and is then forecasted to grow at a moderately accelerating pace until 2030 (Figure 4-9-1-1).

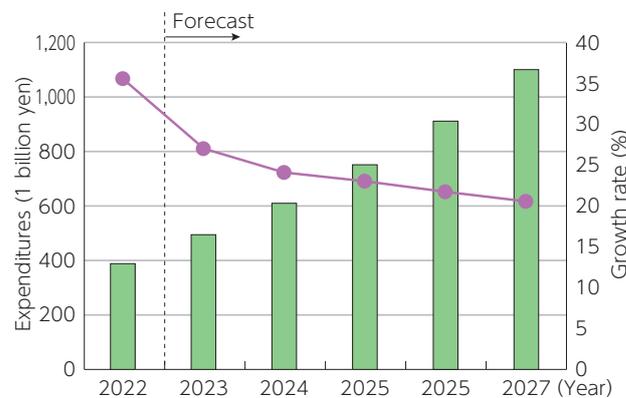
The size (in terms of expenditure) of the Japanese AI systems<sup>1</sup> market was 388.367 billion yen in 2022 (up 35.5% from the previous year), and is forecasted to continue to grow and expand to 1,103.477 billion yen in 2027 (Figure 4-9-1-2).

Figure 4-9-1-1 Changes and forecast in the size (in terms of sales) of the global AI market



(Source) Statista (Next Move Strategy Consulting)<sup>2</sup>

Figure 4-9-1-2 Size (in terms of expenditure) of the Japanese AI systems market and forecast



(Source) IDC "Japan Artificial Intelligence Systems Forecast" (April 27, 2023)<sup>3</sup>

### 2. Trends in AI in various countries

Thundermark Capital's AI Research Ranking, which is published annually, lists the countries, companies and universities that are leading research based on the number of papers published. Looking at countries, since 2020 the top three countries are the U.S., China, and the UK in that order, and while Japan has been in the top 10 every year, its ranking has been declining year by year.

Looking at organizations, Google topped the list in 2022, ahead of universities and companies around the

world, with Microsoft and Facebook also ranking in the top 10. The private companies ranked lower than top 10 include Amazon (U.S.), IBM (U.S.), Huawei (China), Alibaba (China), NVIDIA (U.S.), Tencent (China), Samsung (South Korea), Baidu (China), NTT (Japan), Apple (U.S.), and OpenAI (U.S.), and while companies with large sales are at the top of the ICT market, OpenAI, which specializes in AI, is making rapid progress.

<sup>1</sup> Hardware and software platforms for using AI functions and IT services related to the construction of AI systems

<sup>2</sup> <https://www.statista.com/statistics/1365145/artificial-intelligence-market-size/>

<sup>3</sup> <https://www.idc.com/getdoc.jsp?containerId=prJPJ50603323>



**Figure (related data) Changes in AI rankings by country (top 10)**

Source: Prepared based on Thundermark Capital's AI Research Ranking 2022  
 URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00259](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00259)  
 (Data collection)



**Figure (related data) Changes in AI rankings by organization (top 10)**

Source: Prepared based on Thundermark Capital's AI Research Ranking 2022  
 URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00260](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00260)  
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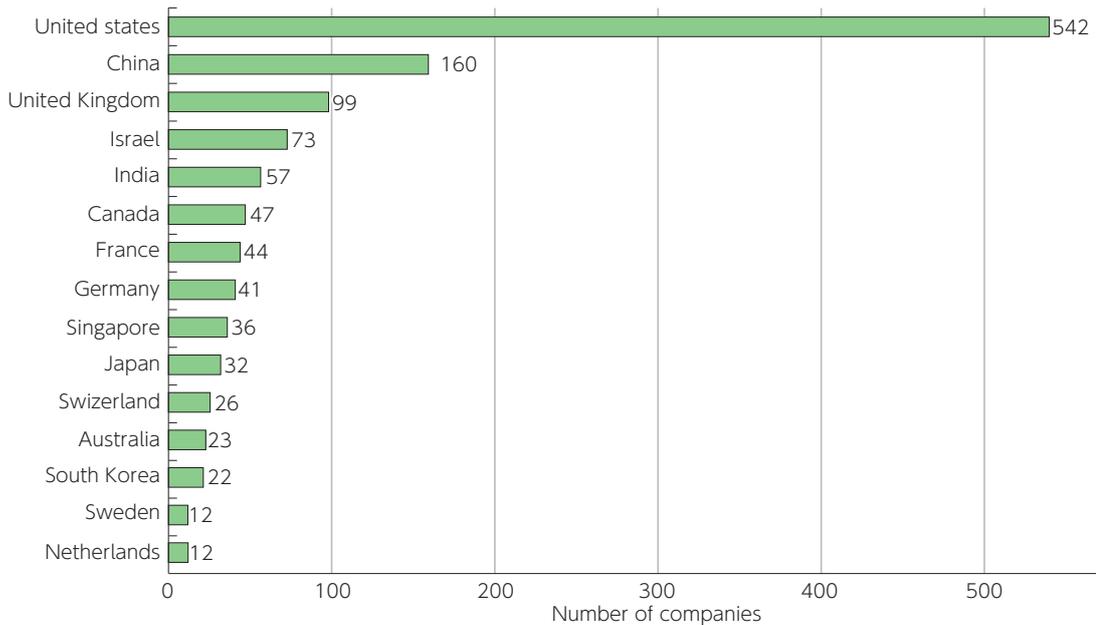
**Figure (related data) China's AI market expenditure forecast**

Source: IDC "China's Artificial Intelligence Market Will Exceed US\$26.7 Billion by 2026, according to IDC" (October 4, 2022)  
 URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00261](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00261)  
 (Data collection)

In recent years, social implementation of AI has advanced, and so-called generative AI, which generates sentences, images, sounds, etc., such as ChatGPT, Stable Diffusion, CeVIO AI, etc., is attracting attention. Investments in AI-related companies are increasingly ac-

tive, and according to the "Artificial Intelligence Index Report 2023" published by Stanford University, the U.S. leads the number of newly funded AI companies in 2022 with 542, followed by China with 160, and Japan is 10th with 32 (Figure 4-9-2-1).

**Figure 4-9-2-1 Number of newly funded AI companies by country (2022)**



(Source) Stanford University "Artificial Intelligence Index Report 2023"<sup>4</sup>

<sup>4</sup> [https://aiindex.stanford.edu/wp-content/uploads/2023/04/HAI\\_AI-Index\\_Report\\_2023.pdf](https://aiindex.stanford.edu/wp-content/uploads/2023/04/HAI_AI-Index_Report_2023.pdf)