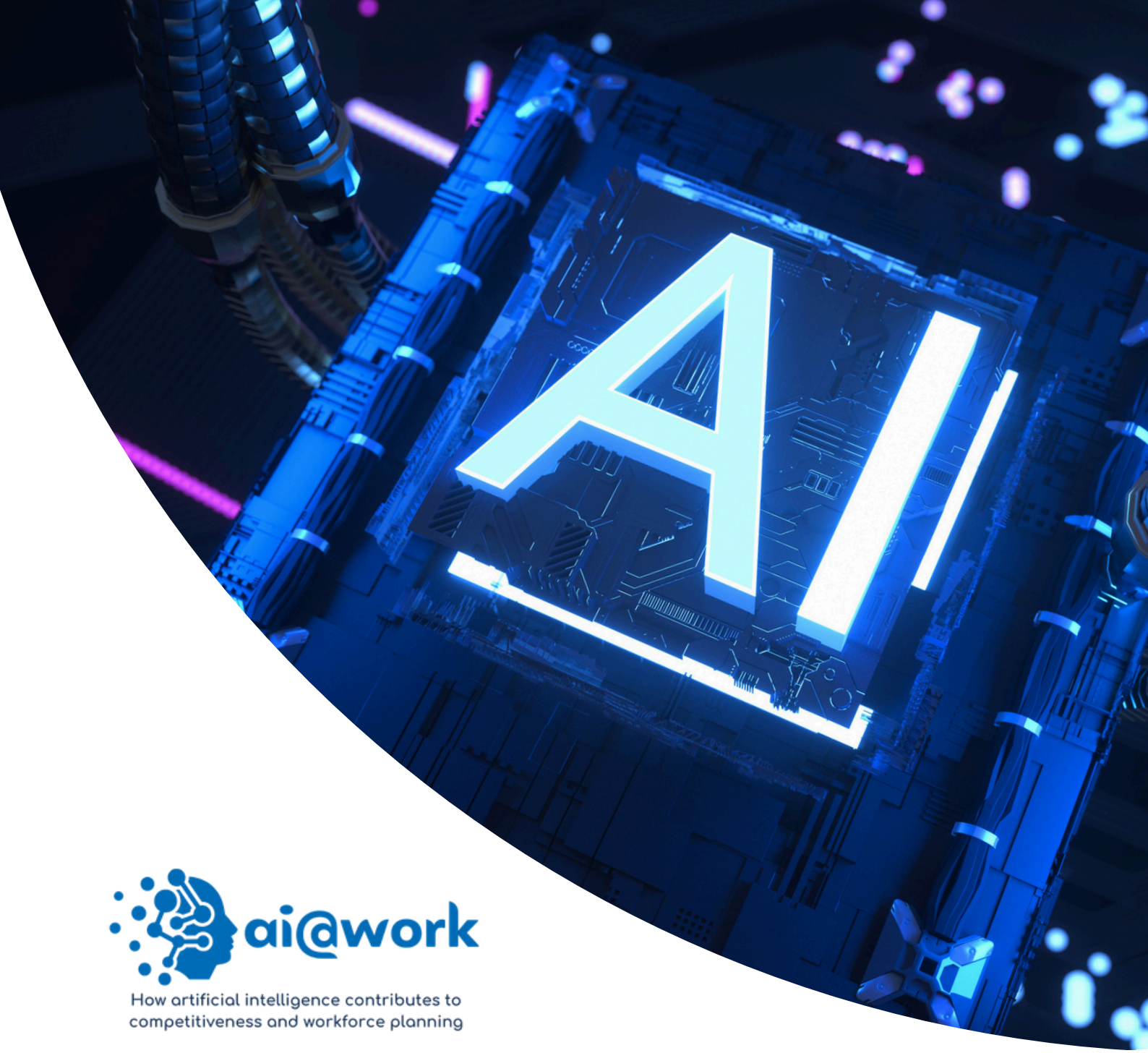


ai@work

How artificial intelligence contributes to competitiveness and workforce planning

AI competitiveness: How the EU compares to the US and China

Fact Sheet #13

Table of Contents

Introduction

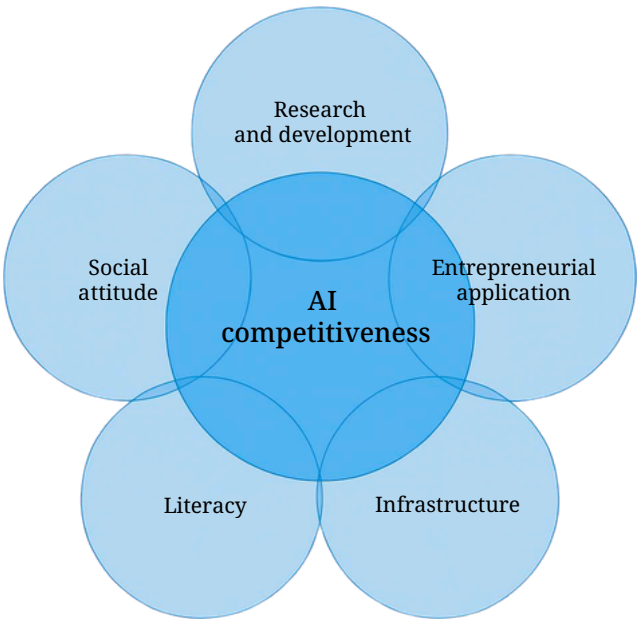
Competitiveness is of strategic importance for the European Union. The Draghi Report shows that the EU lags behind its main global competitors, namely the US and China, in several key areas linked to competitiveness (Draghi, 2024). One central aspect, for example, is Europe's failure to translate innovation into commercialisation, allowing an innovation gap to persist with the US and China, especially in advanced technologies. As a result of the Draghi Report, the EU developed its Competitiveness Compass (European Commission, 2025a). This covers three necessities for the EU to boost its competitiveness, one of which is to close the innovation gap by helping companies adopt new technologies such as AI. This has in turn led to the EU AI Factories Initiative (European Commission, 2025b), among other initiatives, which aims to create AI clusters that combine research, large computing capacity and entrepreneurial application at various locations in Europe.

AI is important to help companies in Europe increase their competitiveness, as AI can be a key driver for enhancing productivity (Aldasoro et al., 2026). Furthermore, implementing AI tools and applications can help companies reduce costs, develop innovative products and services, and counteract the shortage of skilled workers. The aim of this fact sheet is to examine the EU's performance in terms of AI competitiveness compared to the US and China as its main global competitors.

AI is multi-layered, therefore AI competitiveness affects many areas. For example, AI usage requires the persons using the technology to be digitally literate. However, in 2025, only 60% of Europeans have basic digital skills (Eurostat, 2025), while the European Commission's target under the Digital Compass for 2030 is 80% (European Commission, 2021). Furthermore, it is important for AI competitiveness that sufficient infrastructure is in place, that AI is developed and applied in a variety of ways, and that society is open to AI. The multi-layered structure first requires the identification of key factors influencing AI competitiveness so that a comprehensive analysis can be conducted (Figure 1).

For each component, the analysis below provides up to three indicators that are relevant and complete in the sense that they contain current data for the EU, the US and China. Each category is accompanied by a brief key takeaway.

Figure 1: Components of AI competitiveness

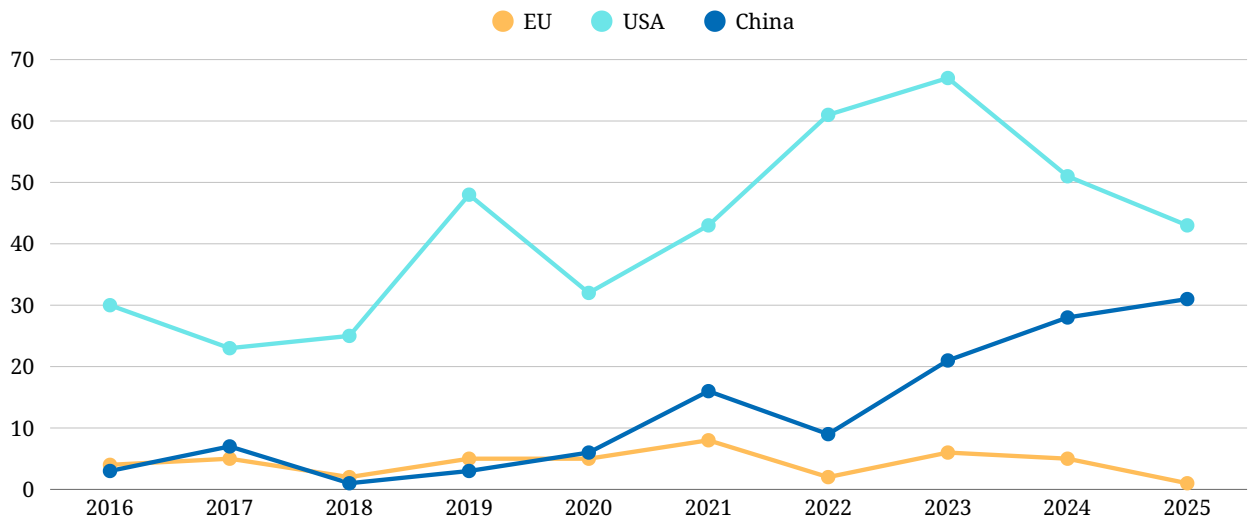


Source: own

Research and development

Figure 2: AI models

Number of notable AI models* based on the developing organisation's origin

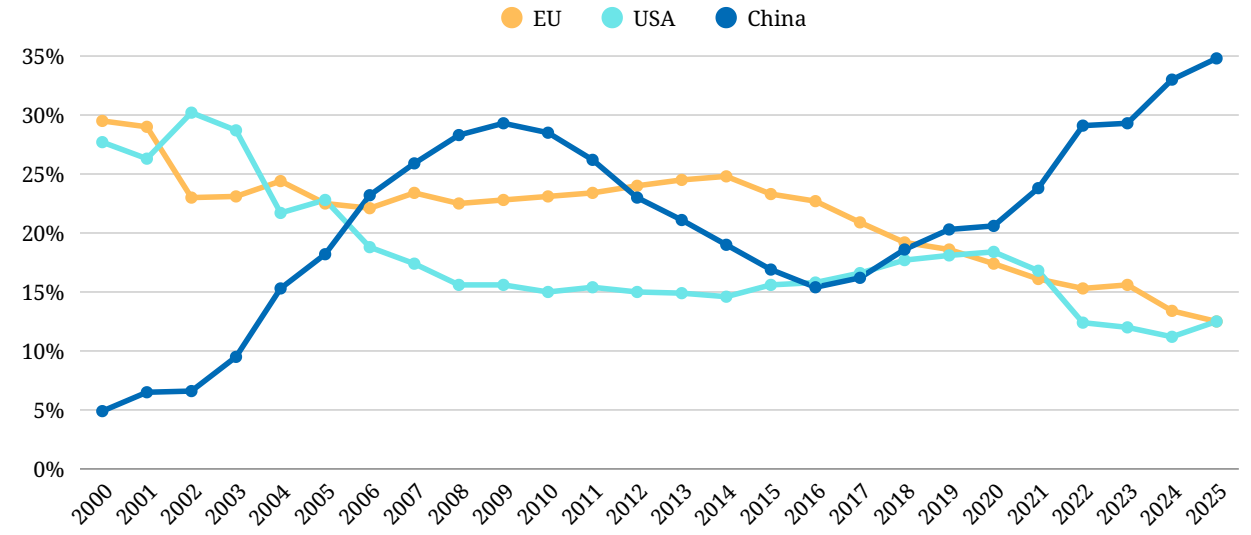


Source: Epoch AI, 2026

* Only AI models are covered that were state-of-the-art when released, have over 1000 citations, 1,000,000 monthly active users or an equivalent level of historical significance. AI models that have been developed cooperatively by several organisations from different regions are allocated proportionally.

Figure 3: AI publications

Share of all global AI publications*

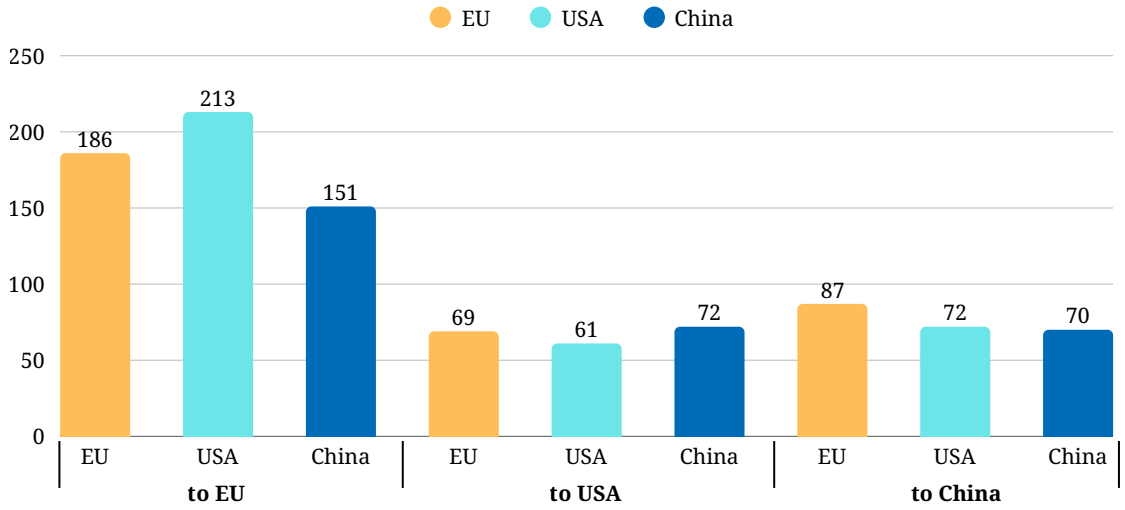


Source: OECD.AI, 2026 based on data from OpenAlex

* A paper is considered to be about AI if it is tagged with a field of study that is categorised as either "artificial intelligence" or "machine learning" in the OpenAlex taxonomy.

Figure 4: Cross-regional AI patent spillovers

Average number of days it takes for a radical AI novelty technology filed by one region to appear in a patent in another or the same region



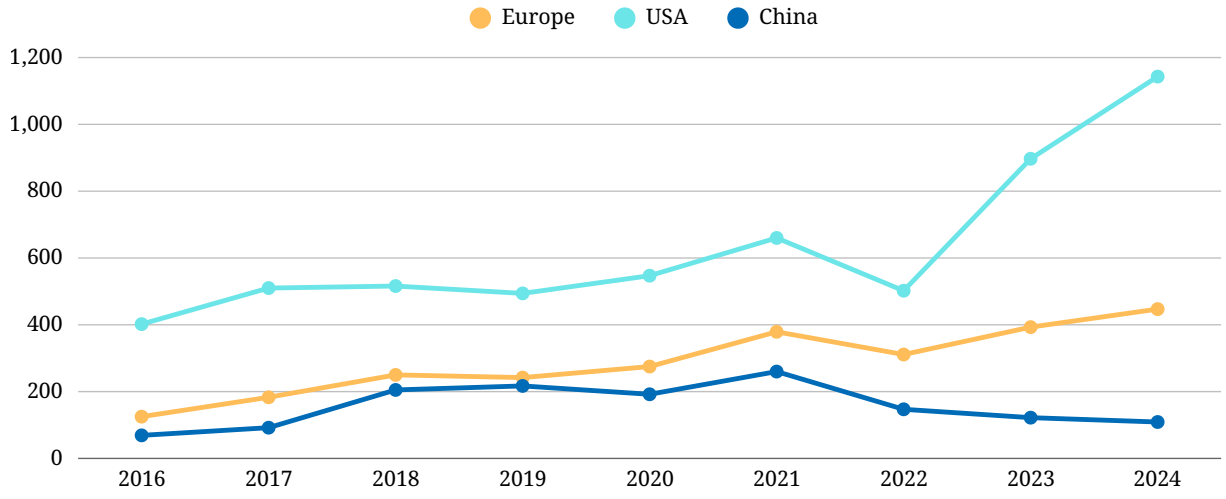
Source: García-Herrero et al., 2025 based on data from WIPO

Key takeaway

The EU is not only lagging behind the US and China in developing notable AI models and publishing AI-related research articles. Companies in Europe also need significantly more time to adapt innovative AI technologies from other regions and to spread AI innovations within their own domestic markets.

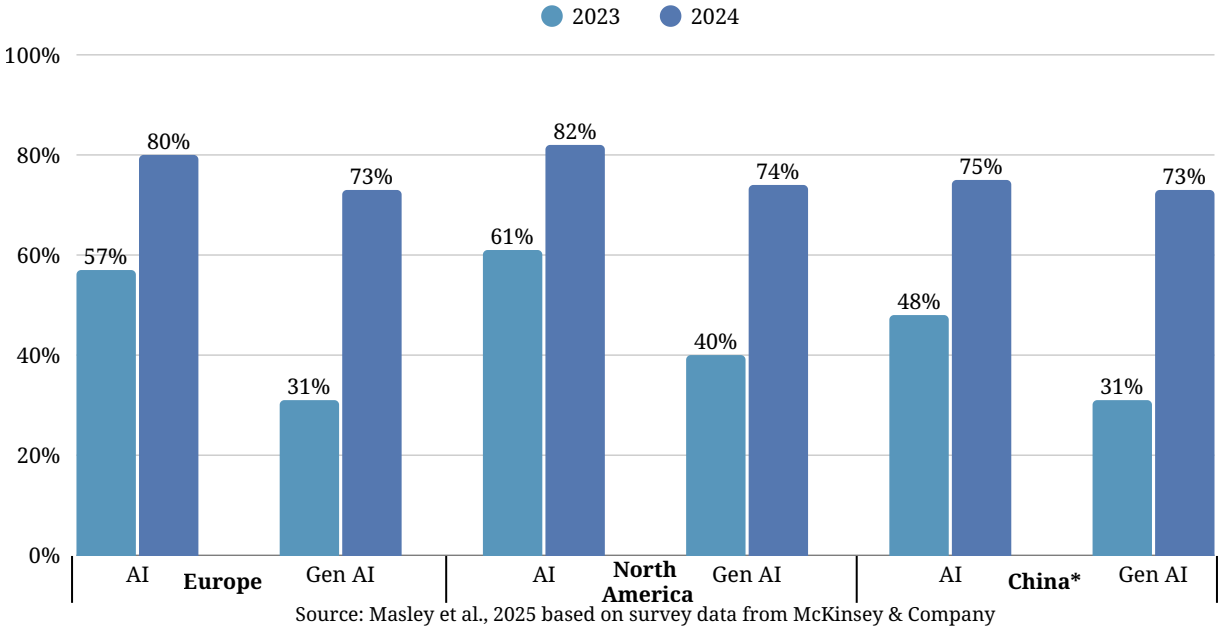
Entrepreneurial application

Figure 5: AI start-ups
Number of newly funded AI companies



Source: Masley et al., 2025 based on data from Quid

Figure 6: AI usage by companies
Share of companies using AI and generative AI

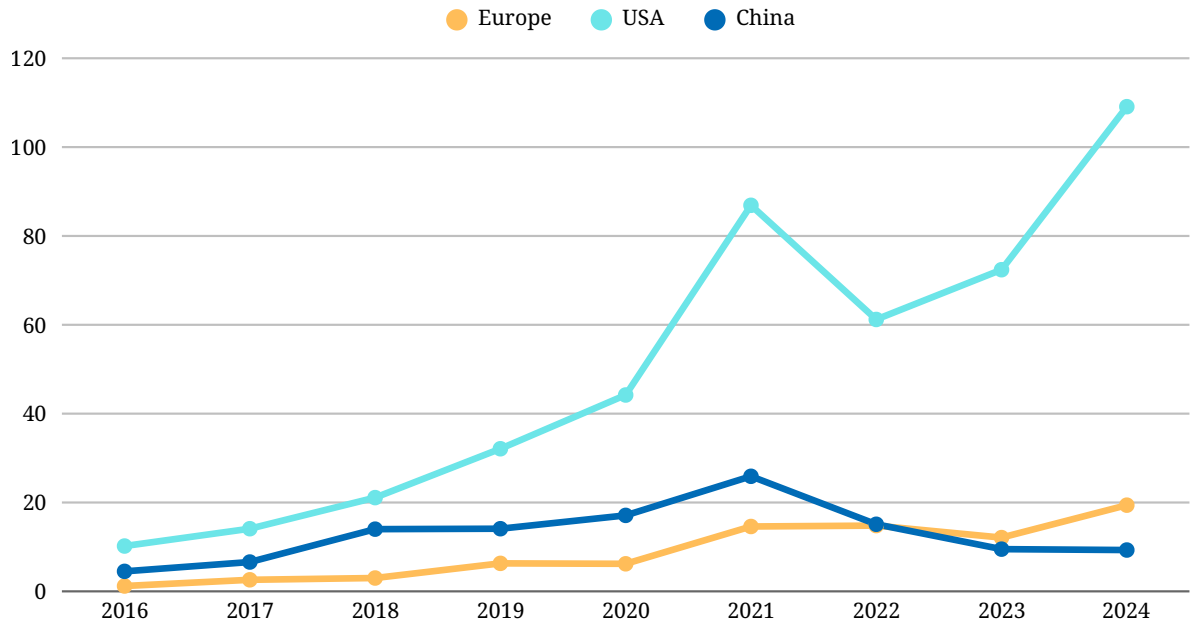


Source: Masley et al., 2025 based on survey data from McKinsey & Company

* Greater China (incl. Hong Kong, Taiwan and Macau). The survey mainly covered large companies: 42% of respondents say they work for organisations with more than 500 million US dollars in annual revenues.

Figure 7: Private investment in AI

In billions of US dollars



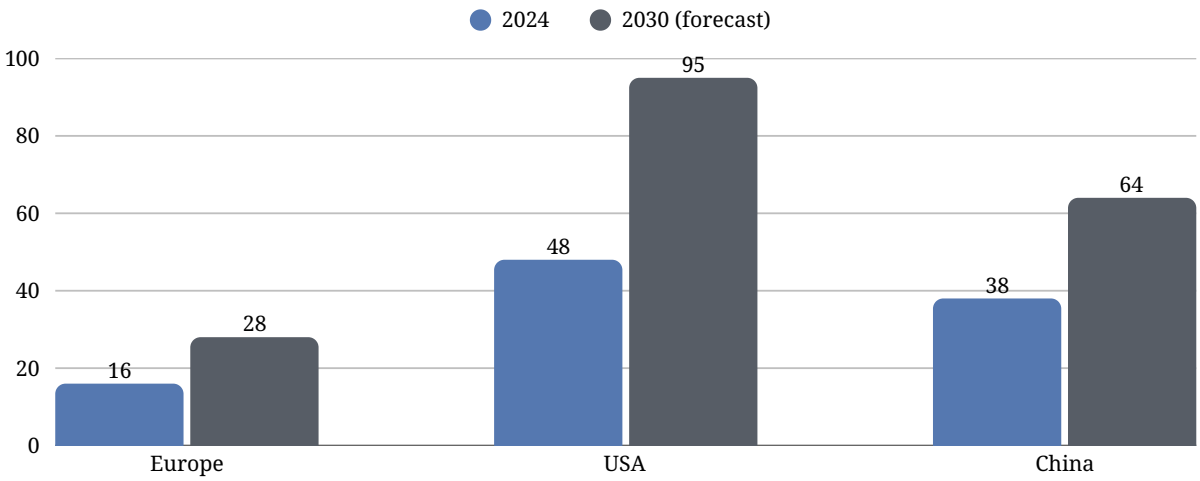
Source: Masley et al., 2025 based on data from Quid

Key takeaway

The EU is lagging behind the US in terms of entrepreneurial AI application but is still ahead of China. The US dominates in terms of AI start-ups and private investment in AI. However, the investment data does not take into account the sharp rise in investment in AI data centres in 2025, which was mainly driven by US hyperscalers.

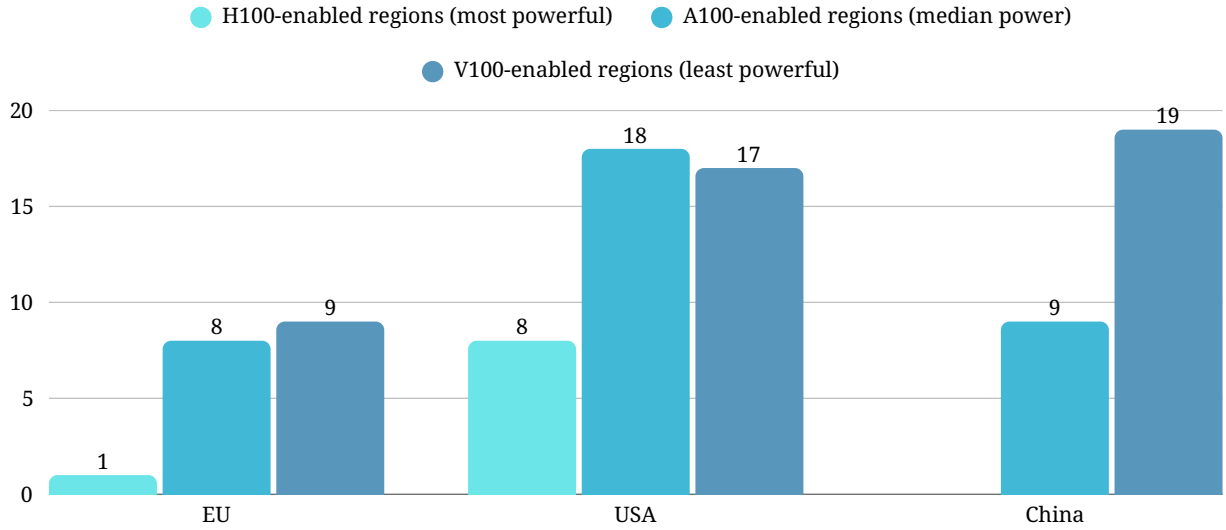
Infrastructure

Figure 8: Data centre capacity
IT connection power in GW in 2024 and forecast for 2030



Source: Bitkom, 2024 based on data from Borderstep Institute

Figure 9: Quality of AI compute
Number of regions offering public cloud AI compute by GPU quality, October 2023

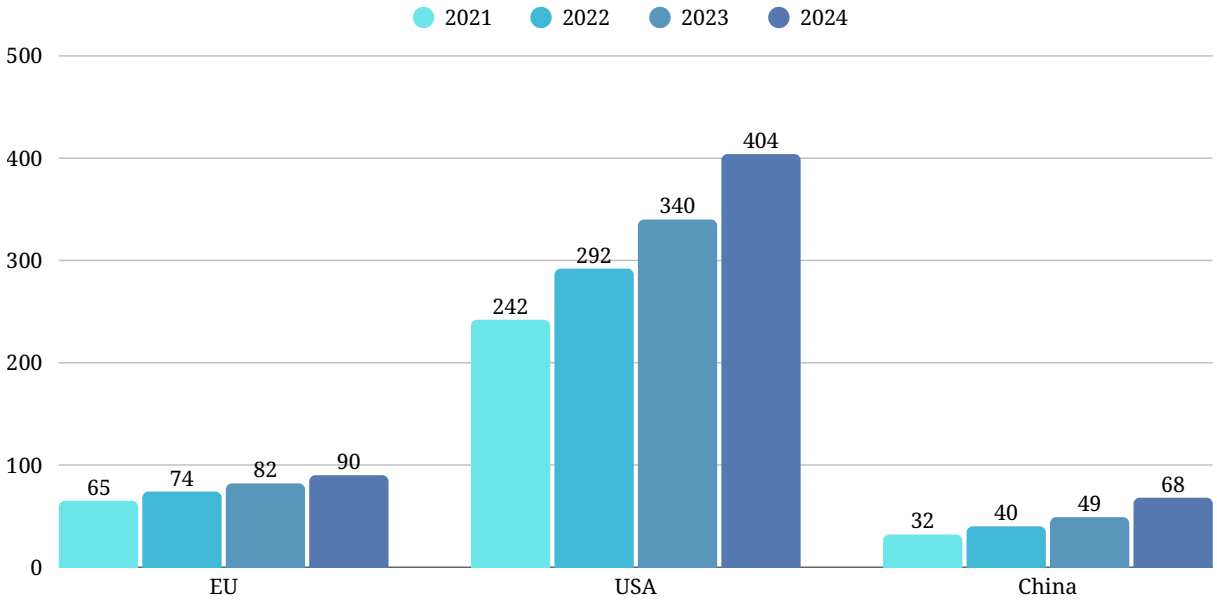


Source: Lehdonvirta et al., 2025

In total, the study identified 187 cloud regions across six major public cloud providers (AWS, Azure, Google Cloud, Alibaba, Huawei and Tencent) through the providers' public-facing websites and customer user interfaces, located in 39 economies. Only the most AI-relevant GPU types at the time were covered (H100, A100 and V100).

Figure 10: Access to training data

Data market* value in millions of euros



Source: European Commission, 2025c, 2024

*The data market is the marketplace where digital data is exchanged as "products" or "services" as a result of the processing of raw data.

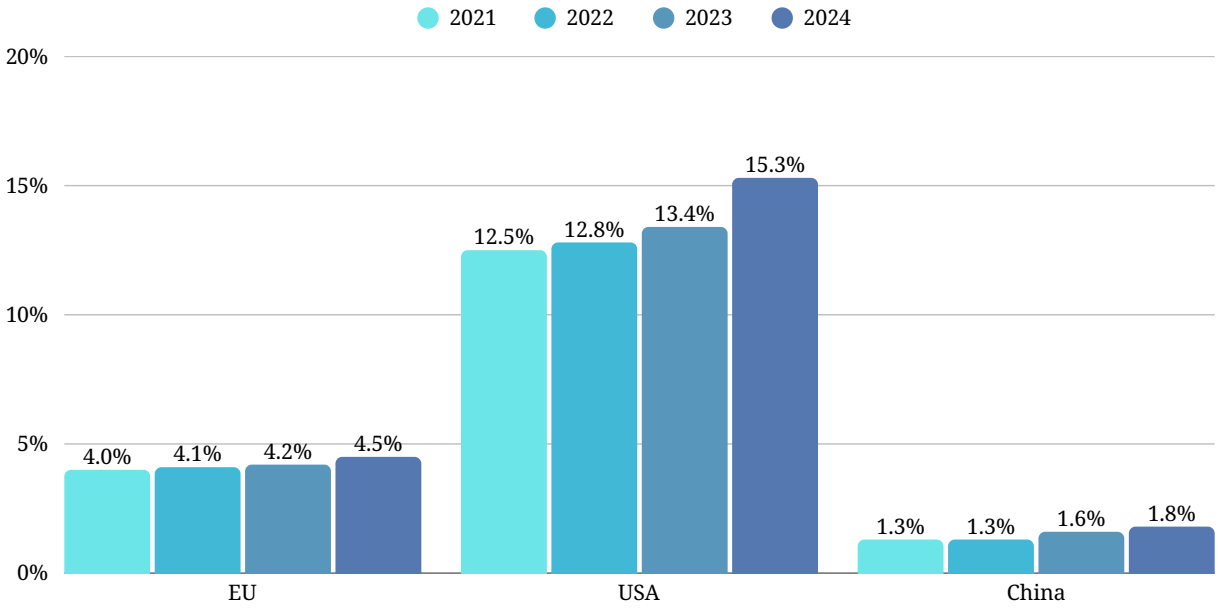
Key takeaway

While the US not only leads in data centre capacity but also quality by hosting the newest and most powerful GPUs (graphics processing units) worldwide. The EU is still largely relying on older GPU generations in its public cloud regions, similarly to China. Despite the EU having a larger data market volume than China, Europe's data market is only expanding at a comparatively slow pace and is currently just around a quarter of the size of the US market.

Literacy

Figure 11: Data professionals

Employment share of data professionals*



Source: European Commission, 2025c, 2024

* Data professionals are workers who collect, store, manage and/or analyse, interpret, and visualize data as their primary activity or as a relevant part of their activity.

Table 1: Computer science education

Availability of computer science (CS) education in EU Member States (white), USA and China

CS cross curricular	CS in some schools/districts	CS as an elective course everywhere	CS mandatory in primary or secondary only	CS mandatory in primary and secondary
• Netherlands	• Belgium • France • Spain • USA	• Denmark • Germany	• Austria • China • Croatia • Cyprus • Greece • Hungary • Ireland • Italy • Latvia • Luxembourg • Portugal • Slovenia	• Bulgaria • Czechia • Estonia • Finland • Lithuania • Malta • Poland • Romania • Slovakia • Sweden

Source: Masley et al., 2025 based on data from Raspberry Pi Computing Education Research Centre

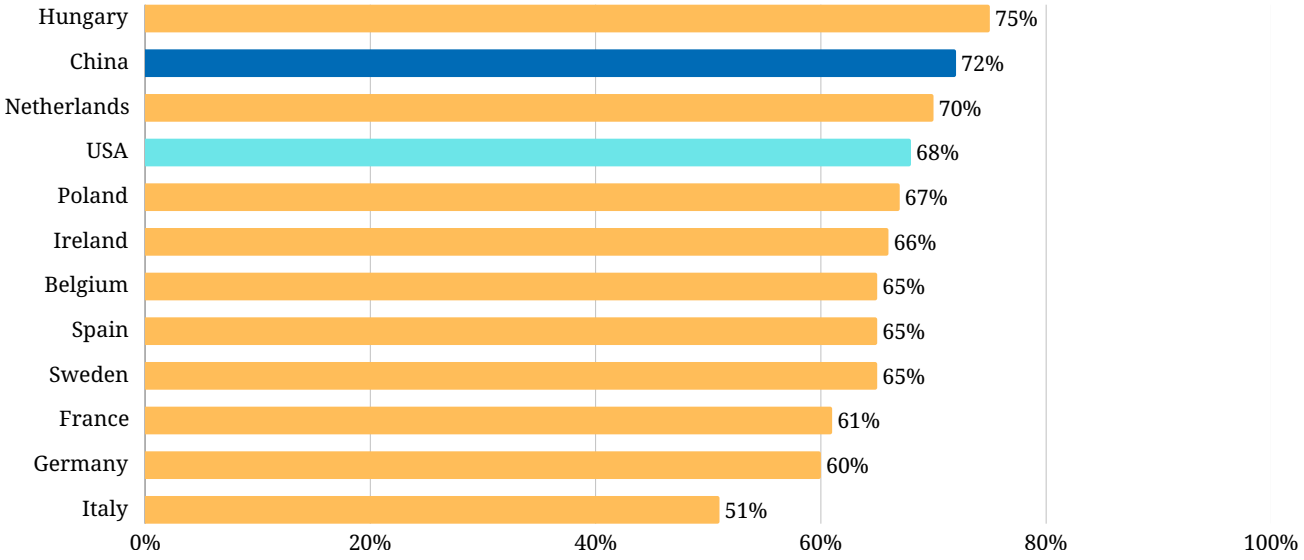
Key takeaway

Many EU countries are comparatively well positioned in terms of computer science education, as they have already integrated it as a mandatory subject in their school systems, at least at secondary level. This is a key advantage given the fundamental importance of computer science for AI development. While the US has the highest proportion of data professionals in its labour market, computer science education is not yet widely established there. In this regard, the EU – alongside China – is ahead in providing broader early-stage computer science training.

Social attitude

Figure 12: Basic understanding of AI

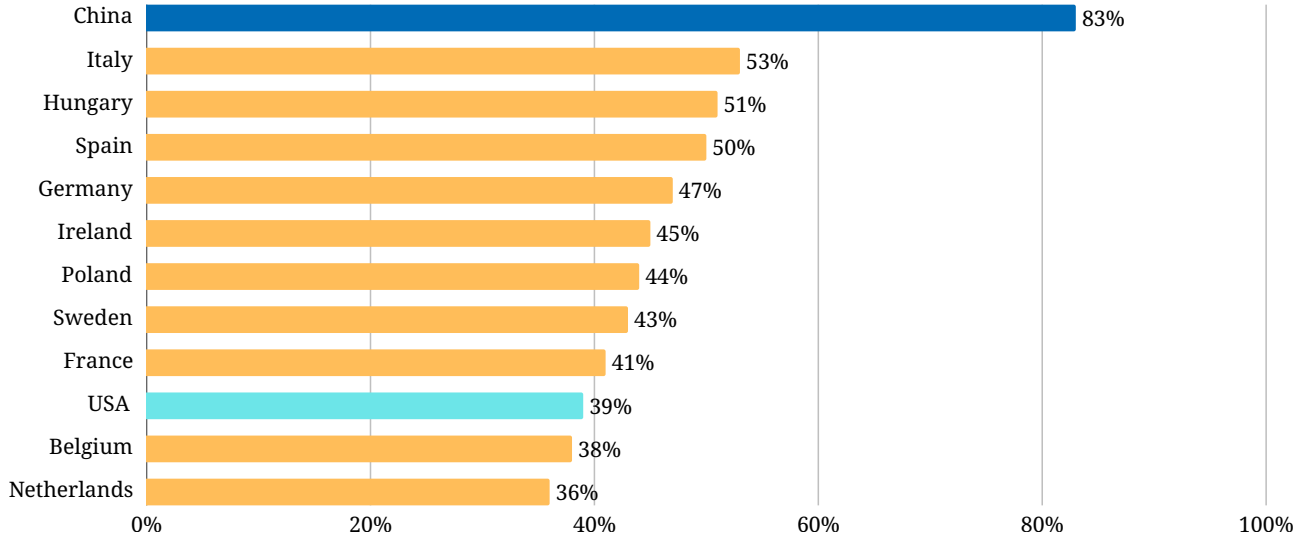
Respondents who agree with the statement "I have a good understanding of what artificial intelligence is" in selected EU Member States (yellow), USA and China, 2024



Source: Masley et al., 2025 based on survey data from Ipsos

Figure 13: Benefits and drawbacks of AI

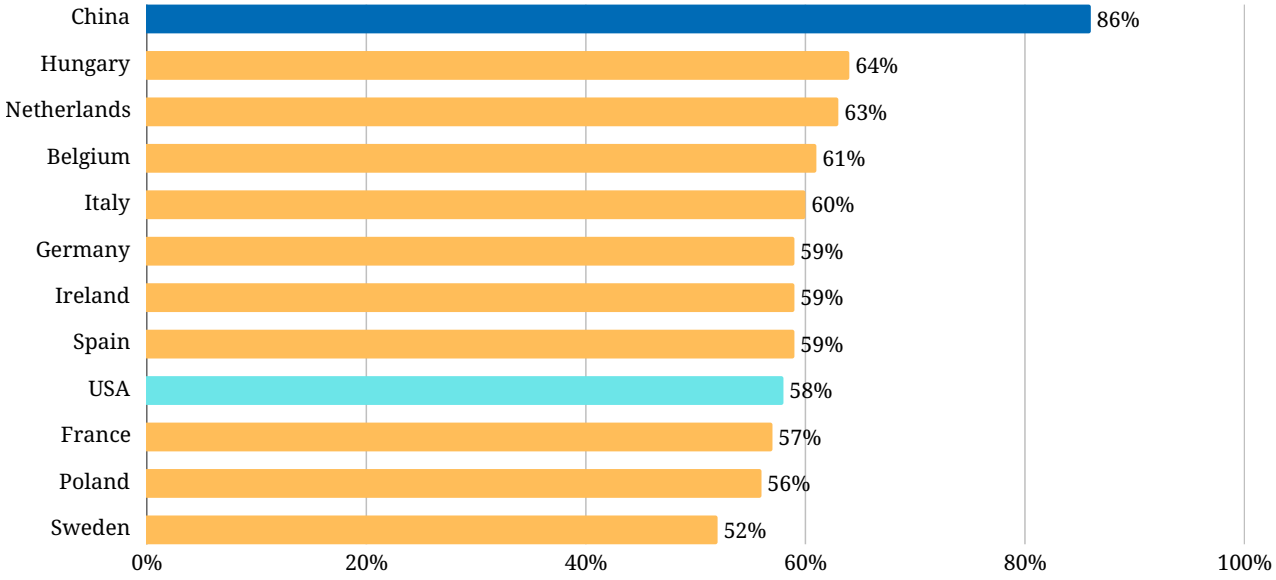
Respondents who agree with the statement "Products and services using AI have more benefits than drawbacks" in selected EU Member States (yellow), USA and China, 2024



Source: Masley et al., 2025 based on survey data from Ipsos

Figure 14: Future expectations of AI

Respondents who agree with the statement ”Products and services using artificial intelligence will profoundly change my daily life in the next 3–5 years” in selected EU Member States (yellow), USA and China, 2024



Source: Masley et al., 2025 based on survey data from Ipsos

Key takeaway

Society in China has the most positive attitude towards AI, seeing more advantages than disadvantages and future potentials. Societies in the EU and the US have a similar attitude towards AI. A lack of societal support for AI could also have negative consequences for other components of AI competitiveness.

Conclusion

Overall, the EU remains structurally behind the US in most core dimensions of AI competitiveness, while maintaining a mixed position relative to China. The EU underperforms in leading AI model development, high-impact research, private investment and access to state-of-the-art computing infrastructure. The US clearly dominates in AI start-ups, data market access, private capital, data centre capacity and cutting-edge GPU availability, reinforcing its leadership in AI commercialisation and scale. China, while trailing the US in several areas, benefits from strong societal support for AI and rapid domestic diffusion.

The EU's relative strengths lie in a strong computer science education system that can develop many AI talents and a larger data market than China's. However, slow data market growth, limited access to advanced compute and slower AI technology adoption constrain Europe's ability to translate innovation into scalable commercial success. As a result, the EU continues to face an innovation-to-commercialisation gap, consistent with the findings of the Draghi Report.

Outlook

In line with the Competitiveness Compass, closing this gap will require the acceleration of AI adoption and diffusion across companies in Europe. Initiatives such as the AI Factories Initiative are therefore strategically important, as they directly address key EU weaknesses by combining research excellence, large-scale computing capacity and entrepreneurial application. If implemented effectively, these clusters can help to improve access to advanced compute, shorten technology transfer cycles and strengthen Europe's ability to commercialise AI innovations. However, without a significant increase in private investment and faster market scaling, the EU risks falling further behind the US and only partially converging with China in global AI competitiveness.

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Published by: **EEI, 2026**

Ai@Work Consortium:

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