

## The AI challenge for governments



Artificial intelligence (AI) capabilities have improved so rapidly since November 2022, when ChatGPT gained widespread public attention, that it has been disorienting for businesses and governments. The large language models (LLMs) powering AI have developed at a rate of 104x every three years since 2010. While technologists continue to work on fully understanding the capabilities and characteristics of existing LLMs, firms and ministries are nonetheless seeking to leverage and adapt to this technology. This is imperative because even if innovation were to stop today, it would take a decade or more for economies and bureaucracies to absorb and exploit fully the software capabilities announced in the last six months.

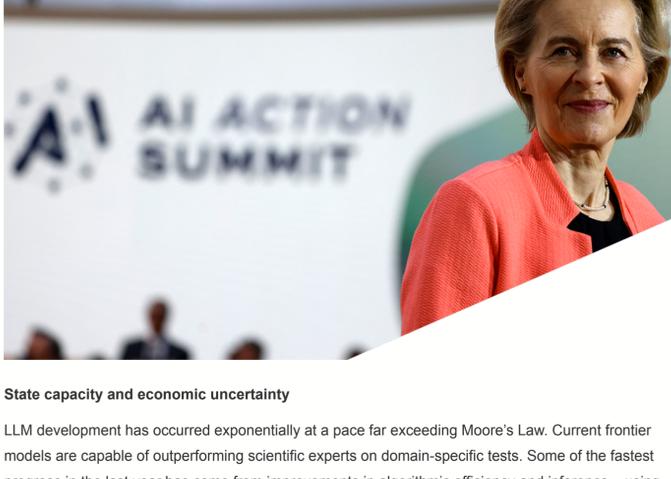
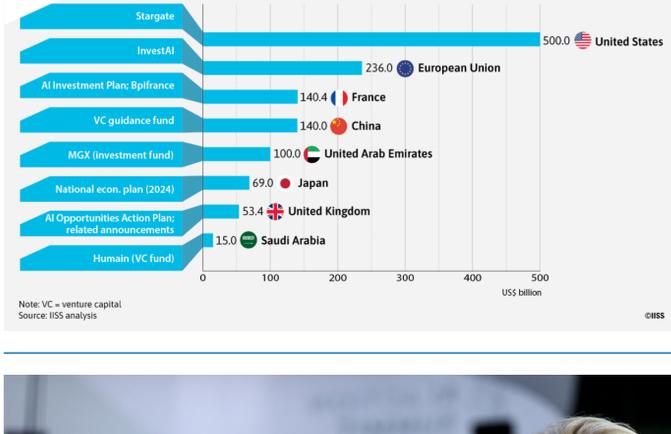
- AI in its current form is causing shifts in the technological and strategic landscapes globally.
- Governments face extraordinary challenges in responding to AI. They will be under pressure to leverage capital investments and international partnerships to capitalise on opportunities while mitigating significant geopolitical, social, environmental, economic and security risks.
- The leaders of frontier AI firms are racing to achieve 'superintelligence' – machines that produce insights inaccessible to even the smartest humans – and may do so within ten years or even by 2030.

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## Select public-private AI investments



## State capacity and economic uncertainty

LLM development has occurred exponentially at a pace far exceeding Moore's Law. Current frontier models are capable of outperforming scientific experts on domain-specific tests. Some of the fastest progress in the last year has come from improvements in algorithmic efficiency and inference – using models that think longer and in a more structured way about each question – rather than from increasing the amount of data and computing power used to train models. China's DeepSeek, for instance, demonstrated strong performance in early 2025 despite facing chip export restrictions imposed by the United States, largely due to its innovation in these areas.

Now that models are capable enough to be commercially relevant, this development cycle also exceeds the adaptive capacity of most public institutions. In addition, uncertainty surrounds the economic geography of AI. It is unclear whether most profits will accrue to a few dominant model providers or a broader ecosystem of startups building applications around them. The implications for national tax bases, data governance and domestic technological capability are significant.

Governments must determine whether and to what extent to mandate sovereign AI capabilities and how to ensure data protection in an era when most generative systems rely on transnational cloud infrastructure.

Indeed, the adoption of AI is prompting a reconfiguration of global cloud computing and related supply chains and infrastructure. US providers, such as Amazon, Microsoft and Google, are racing to establish AI-optimised data centres across geographies, prompting governments to revise their investment-screening mechanisms and reassess the national-security implications of foreign technology services.

Defence ministries are establishing AI task forces to integrate LLM-enabled technology into command, control and planning processes, raising complex questions about human accountability and system reliability. For instance, governments will need to develop more sophisticated doctrines for AI integration into lethal weapons systems, given that the meaning of broad, ex-ante commitments to keep a 'human in the loop' become clouded in wartime environments, particularly with the employment of autonomous and semi-autonomous systems that are less error-prone than humans.

Procurement systems and policy cycles – often built to prioritise stability and predictability, and to appease political constituencies – are proving ill-suited for fast-evolving technology and may slow AI uptake by civil servants in government. Without reform, states risk ceding influence over transformative tools to a handful of private firms located in only a few countries. Striking the right regulatory balance will be critical, as overregulation may stifle innovation and competitiveness, while under-regulation may leave societies exposed to economic dislocation.



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**GLOBAL DATA-CENTRE DEALS MADE IN 2024**



**THE EU HAS ANNOUNCED A PROGRAMME TO MOBILISE €200BN FROM THE PUBLIC AND PRIVATE SECTORS, OF WHICH €20BN WILL HELP BUILD AI GIGAFABRICS**



## From scarcity to abundance?

At the geopolitical level, AI is becoming a source of strategic advantage and national prestige. Governments have been scrambling to secure advantages for their domestic technology and defence sectors, and in doing so, they have joined an international competition to secure chips, energy, data and technological expertise. China and the US view AI as a key element in their strategic rivalry and as a lever of geopolitical influence. US export controls on chips have driven China to pursue indigenous innovation and algorithmic workarounds, while China, in turn, has restricted exports of critical minerals that feed global AI semiconductor supply lines. Both countries are investing billions to construct 'AI gigafactories' – chip-filled data centres that consume vast amounts of electricity. Both also perceive that there may be advantages to early innovation for their defence sectors – with AI advances powering, for example, new lethal autonomous platforms and decision-support systems for targeting – and, particularly in China's case, as ballast for existing strengths in manufacturing batteries, drones, and in advanced manufacturing using industrial robotics.

Saudi Arabia and the United Arab Emirates each have announced several multi-billion-dollar capital investments to accelerate AI adoption and build new data-centre and energy infrastructure, leveraging their positions as plausible partners of both China and the US to secure major partnerships and financial commitments from American firms (with help from the US government). For Europe, the news of an emerging US-led AI boom occurred amid a clash between Brussels and major American technology firms over social media and data privacy. This informed Europe's cautious, regulation-first approach, which culminated in the EU AI Act, which took effect on 1 August 2024. This approach has softened as AI advances proceeded and as leaders signalled that they did not want the EU to be left behind. In February 2025, for example, at the AI Action Summit in Paris, French President Emmanuel Macron's message to data-centre investors was to 'plug, baby, plug' into the country's nuclear-powered energy grid, while at the same summit the European Commission President Ursula von der Leyen emphasised cutting red tape and said that 'we want Europe to be one of the leading AI continents'.



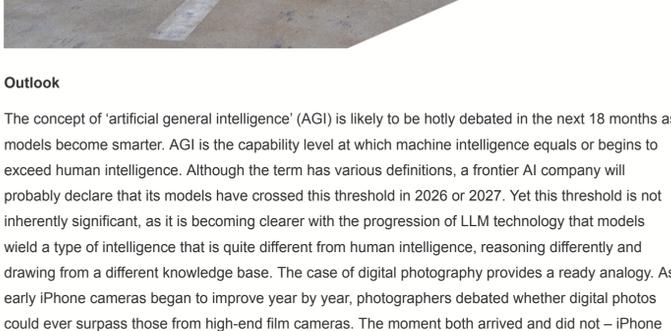
**ONE-DAY MARKET-CAP LOSSES IN THE US AFTER CHINA'S DEEPSEEK RELEASED A POWERFUL, OPEN-WEIGHT FRONTIER LLM IN JANUARY 2025**



**COST TO QUERY A FRONTIER AMERICAN LLM IN MARCH 2025 COMPARED TO DEEPSEEK'S V3 MODEL**



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## Outlook

The concept of 'artificial general intelligence' (AGI) is likely to be hotly debated in the next 18 months as models become smarter. AGI is the capability level at which machine intelligence equals or begins to exceed human intelligence. Although the term has various definitions, a frontier AI company will probably declare that its models have crossed this threshold in 2026 or 2027. Yet this threshold is not inherently significant, as it is becoming clearer with the progression of LLM technology that models wield a type of intelligence that is quite different from human intelligence, reasoning differently and drawing from a different knowledge base. The case of digital photography provides a ready analogy. As early iPhone cameras began to improve year by year, photographers debated whether digital photos could ever surpass those from high-end film cameras. The moment both arrived and did not – iPhone photos are now better in a host of ways but are also different, and the comparison is no longer relevant.

AI capabilities – including those in text, audio, video, and multimodal domains – will continue to improve significantly. Commercial products in which AI agents operate computers, much like plug-in remote workers, will probably be released in 2026 or 2027, and firms and public-sector organisations will need to decide when and how to leverage and govern these capabilities. The individuals running frontier AI labs in the US, who have visibility into products that will not be released to the public for many months, have given no indication that the pace of innovation may be slowing. Sceptics have accused these corporate leaders of hyping their products, but their predictive track records have, to date, been reasonably good. In any event, the speed limit of technological change in the coming years is likely to be governed not by frontier capabilities but by the speed at which societies and economies adapt. Thus, the challenge for governments will be to determine the mix of policies, both domestically and internationally, that can mitigate emerging risks, improve social and economic conditions, and harness the strategic advantages of these systems more quickly than their geopolitical rivals.



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