Opinion **Artificial intelligence**

The US and Europe need a strategy for the geopolitical contest over AI

Rising middle powers will play a key role in the struggle for global technological supremacy

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Open AI, Gemini and Claude logos. Current training runs for Claude, Anthropic's AI model, ChatGPT from OpenAI and Gemini from DeepMind/Google cost in the range of $100mn © FT montage/Getty Images

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Newspaper headlines regularly herald the stunning breakthroughs of the leading frontier large language models in artificial intelligence. Much less discussed, however, is that underneath these feats of technology lie ever larger "training runs". These train algorithms on massive data sets. To do so requires thousands of expensive advanced semiconductor chips and a startling amount of electricity.

The growth of US and UK AI companies will eventually be constrained by the lack of sufficient computing and electrical power which, if not remedied urgently, may force them to locate important facilities and capabilities in other countries. This is about to unleash a frantic global scramble for financial subsidies, both for the most advanced chips and, especially, for low-cost electricity.

Geopolitical competition will become intense between a US- and UK-centric AI ecosystem and a China-centric one. Wealthy middle powers without clear allegiance to either, such as the United Arab Emirates and Saudi Arabia, will have substantial sway.

Here is how. Current training runs for Claude, Anthropic's AI model, ChatGPT from OpenAI and Gemini from DeepMind/Google cost in the range of $100mn. This will rise exponentially, with the chief executive of Anthropic estimating that future models could cost as much as an astonishing $1bn to $10bn. They also require enormous amounts of electricity.

Where will entrepreneurs from the UK and US seek these resources? Well, to take one example, Sam Altman, the CEO of Open AI, has said he is seeking up to $7tn for a partnership with investors, chipmakers and power providers to build semiconductor chip foundries. The plan includes raising money from Middle Eastern investors.

To attract AI companies and talent, the UAE points to its large cash reserves, which can pay for premium computer chips and cheap, plentiful electricity. The UAE has pitched itself as a haven for AI growth, while Saudi Arabia is trying to attract the best AI companies with similar promises of largesse.

Experts have raised concerns that if "training runs" occur in the UAE and Saudi Arabia, where there are less stringent privacy protections, anonymised data of US, UK and other citizens will be transferred there. Some top-tier AI talent would also move, and hacking could be a concern. One scenario suggests that both data and advanced technical knowhow could then move easily to China and Russia, due to the region's close alignment with those powers.

Western attention in the Middle East might be focused currently on rising tensions between Israel and Iran. But, taken together, these developments on AI mean that it is past time for the US, UK and their allies to start thinking strategically on this as well. They have two options.

First, the US, UK and Europe could go it alone and try to keep the lead in developing and training the most advanced AI models at home. This would require an immense effort to expand electric power generation. Currently, neither the Biden administration's executive order on AI nor the recent EU AI Act specifically mention the looming shortage of electricity. But such a massive increase in demand would require, for example, fast-tracking regulation on modern nuclear reactors, doubling down on clean energy and allowing some inexpensive baseload "transition" fuels such as natural gas to continue to operate.

A second option is to create a values-based ecosystem around AI, which could include traditional allies in Europe and Asia, but also rising powers such as the UAE and Saudi Arabia.

To achieve this would be a challenge, but it is likely to be the best long-term approach. The US, UK and Europe would create clear, joint values around AI — including on data protection, privacy, how advanced models are trained and what they can be used for. The UK is the furthest along in this endeavour, with its AI safety summit framework; the EU has legislated but doesn't host the most technically advanced companies; and the US has made limited progress through executive orders, but has passed no legislation.

Once these values are defined, these governments would build a tightly controlled network of countries that sign up to these values and agree not to collaborate with China or Russia. Only these signatories will have access to the most advanced computing chips and assist each other with electricity generation.

It is time for governments in Europe and the US to choose a strategy that ensures they don't lose control over their data, their talent and the training of AI models.