

# DeepSeek: An AI Innovation Milestone, Not a Disruptor

Markets may have been shocked by headlines about China's DeepSeek breakthrough, but many in the AI industry were not. And when you peek under the hood, there's plenty of good news.



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## Key takeaways

- DeepSeek's progress is an incremental step forward in the AI innovation journey, and if AI models do indeed become much cheaper to train and run, AI adoption will accelerate.
- DeepSeek's results are impressive, but its technology was built on open-source code, not made from scratch; in addition, its widely cited \$6 million training figure likely represents only the final training iteration.
- AI related investments and innovations are still needed to drive progress towards new AI breakthroughs, including includes artificial general intelligence.



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## DeepSeek in brief

DeepSeek is a China-based AI company that just made global headlines about its AI model's breakthroughs in efficiency and cost-effectiveness. The firm built its open-source model using a mixture-of-experts (MoE) training on other leading models, as well as an optimized architecture that only uses a subset of their model's parameters for each input. This reduces computational costs while performing on par with other leading large language models (LLMs) for simple use cases.

As this news gained traction globally on January 27, the markets fell sharply. But we believe the recent market volatility is a bit of an overreaction, and we view DeepSeek's incremental breakthrough as a net positive for AI innovation ahead.

## Six factors to consider when processing the DeepSeek news

One of the market's biggest concerns was the company's claim that it took only \$6 million to train the model, a fraction of the cost compared to other foundational models.<sup>1</sup> This raises fears about the sustainability of the current levels of AI spending in the industry. But this \$6 million figure (among other company claims) is actually being hotly debated, as are some of the broader implications for the AI industry.

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### DeepSeek rests atop the AI open-source ecosystem

DeepSeek was not made from scratch. In fact, the model was built on open-source code, leveraging collective



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expertise across other foundational models in the ecosystem. Moreover, tremendous computing power and investments were needed to build this collective expertise. The research and development for the MoE foundational models is likely not included in that \$6 million training figure, which likely represents only the final training iteration.

## 2 Other competitors may not be far behind

DeepSeek is a distillation model and distillation is not new concept. Every model company has a “mini”, distilled version of the bigger model. DeepSeek’s model is more cost effective on a per-token (unit of intelligence) pricing perspective. This was true of OpenAI’s “o3 mini,” which cost less than its “o1 mini.” And this was the first time that a new model was priced below a prior equivalent model. Llama has a smaller distilled model that can be run locally as well. More efficient training has been a key focus across the AI ecosystem to bend the cost curve.

## 3 DeepSeek may have access to advanced NVIDIA GPUs

There are reasons to be skeptical about the claim that DeepSeek used “cheap” NVIDIA chips. In fact, the company may have had access to advanced NVIDIA GPUs. Scale AI CEO Alexandr Wang suggested that DeepSeek may have been trained on a large cluster of advanced NVIDIA GPUs that it was not supposed to have.<sup>2</sup> DeepSeek cannot talk about the use of advanced NVIDIA GPUs because of ongoing export restrictions.

## 4 Cloud ‘hyperscalers’ already knew about DeepSeek when announcing capex

Spending intentions from hyperscalers likely remain elevated: Note that DeepSeek unveiled their open source LLM in December. Hence, hyperscalers were already aware of DeepSeek when they made their recent capital expenditure announcements—including Microsoft’s \$80 billion and Meta’s \$60-\$65 billion for 2025.<sup>3</sup> We expect most companies will reiterate their capital spending plans for AI when they report earnings over the next few weeks, which should help to calm down some of the concerns.

## 5 This development could herald new use cases and broader adoption

DeepSeek is an open-source model, so their breakthroughs have been shared with the broader AI developer community. The latest AI models still have limitations in complex reasoning and true understanding, with significant AI infrastructure required to support the trajectory of development. Next-generation AI semiconductor chips are on the horizon and AI advancements are rapidly evolving. If models do indeed become much cheaper to train and run, this in turn should accelerate AI adoption and inference demand.

## 6 Consider the ‘Jevons paradox’

The Jevons paradox is an economic principle describing how increased efficiency can lead to even greater consumption of resources. In other words, lower cost goods and services makes them more attractive to consumers and industries. We saw this play out when OpenAI introduced their ChatGPT pro model in 2024: Token consumption increased from 8 billion to over 300 billion in a week, given the improved efficiency of the model. (Tokens are essentially units of text that can be as short as one character or as long as one word.) If DeepSeek’s approach yields more efficient models, we may see even more demand for AI inferencing in the future.

### The bottom line

Overall, while some believe that DeepSeek’s progress could be an inflection point for the AI theme, we believe it is more of an incremental step forward in the AI innovation journey and not a game-changing event.

The industry is rapidly evolving, with major investments and innovations still needed to drive the progress towards artificial *general* intelligence. As AI models become smarter and more efficient, adoption should accelerate and drive more usage across a new class of AI applications.

The stakes are high, as advancements in AI can lead to significant breakthroughs across industries—anything from technology to defense, healthcare to finance. And we believe it’s unlikely that any major country or leading company will process this news and decide **not** to invest for the opportunities ahead. We are still in the early stages of the AI era and there is a great deal of potential to be unlocked in the future.

<sup>1</sup> DeepSeek-V3 Technical Report.

<sup>2</sup> CNBC, 01/23/25.

<sup>3</sup> Microsoft, 01/03/25 and CNBC, 01/24/25.

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