

Semiconductors

Thematic investing and megatrends: Views on DeepSeek

Chinese AI startup DeepSeek has surged to the top of AI-related downloads on both domestic and overseas iOS App Stores over the weekend, showcasing its super-efficient open-source model (~10k A100) running on a cost-effective compute infrastructure. This milestone has immediately ignited intense debate around the trade-offs between big and small models, open vs. closed-source approaches, and cost-efficient vs. premium infrastructure. The impact of DeepSeek's emergence has also sent shockwaves across global markets.

The market reaction in Asia on Monday (27 Jan) was: semi, datacenter, and cooling-related names saw declines, while internet companies rallied. This suggests growing concerns over the potential disruption DeepSeek's efficiency-focused model could bring to the AI value chain. As the debate unfolds, we anticipate a volatile week ahead for tech names, particularly as many of these companies are set to report earnings with their share prices at historical highs.

Looking ahead, the industry will need to emphasize ROI and justify continued capex expansion to reassure investors. **While the success of DeepSeek's more efficient models has certainly challenged the paradigm of AI compute usage, we firmly believe compute power remains the cornerstone for AI development.**

■ **Despite the optimization demonstrated by DeepSeek's models, AI applications are still in their nascent stage, with significant potential yet to unfold.** DeepSeek's achievement in optimizing smaller models at a fraction of the cost ([US\\$5.58mn, 3% of OpenAI's o1 total costs](#)) has sparked investor concerns about the viability of large-scale capex by hyperscalers. We believe the success of DeepSeek's approach highlights that the Capex-to-rev. ratio for AI investments can be significantly lowered, making it feasible for more enterprises to build their own AI infrastructure. We also believe this development could drive a more decentralized approach to AI infra. buildout, enhancing innovation across smaller companies.

■ **The ongoing need for large-scale compute clusters remains robust.** While DeepSeek's 10k A100 GPUs cluster (one A100 ≈ 0.33 H100 in terms of compute capability) has demonstrated high precision in vertical applications, **the compute demand for multi-modal, multi-task models remains critical.** These models, necessary for complex AI tasks, require a much larger scale of GPU clusters to support real-time inference on a global scale (e.g., [Meta used 100k H100 to train Llama-4](#)) than smaller models in specialized verticals.

Implications for the future of AI infrastructure:

- **Vertical applications:** DeepSeek's approach shows promise in vertical applications, but general-purpose compute power remains essential. Complex tasks, like multi-modal models and real-time inferencing, demand much larger compute clusters beyond what vertical solutions can provide.
- **Specialized small models:** As more specialized small models emerge, we expect a new wave of AI-driven applications, which will increase demand for specialized models, leading to further decentralization of AI infra. and reduction of costs.
- **Overcoming hardware limitations and driving AGI development.** Due to US export restrictions, China has been unable to access the most advanced AI chips, prompting companies like DeepSeek to innovate in model architecture and algorithms, proving there is sufficient room for

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improvement. While this has led to significant advancements, it does not diminish the importance of advanced compute power, which remains essential for AGI development. DeepSeek's team acknowledged that the lack of access to top-tier accelerators has limited their R&D efforts. However, the company has made its research open-source and affordable, enabling downstream businesses to leverage its models for application development. As a result, we remain bullish on global AI value chain suppliers, with [Innolight \(300308 CH, BUY, TP: RMB186\)](#) as our top pick in domestic AI players.

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