
The New AI Battlefield

Infrastructure, Data, Applications and the Race for Competitive Advantage



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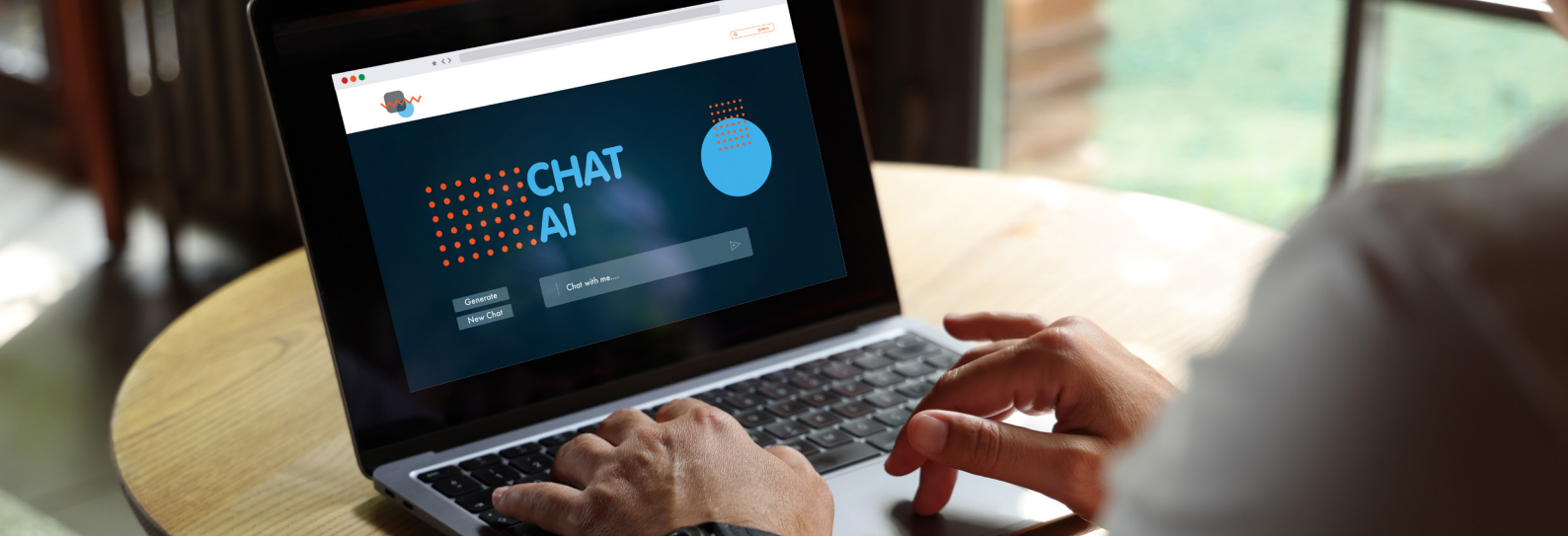
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The latest AI models, including DeepSeek R1, Grok-3, Kimi 1.5 and Alibaba's Qwen 2.5, push AI leaders to rethink cost structures, data strategies, and competitive positioning. While they all demonstrate strong performance, the real breakthrough lies in efficiency—how effectively they can be trained and deployed. This shift is reshaping the AI ecosystem, expected to reach €2 trillion by 2030. The impact and effects of recent breakthroughs span across four key areas: infrastructure, data, applications and usability.



Efficiency breakthroughs in AI

The latest AI models, including DeepSeek R1, Grok-3, Kimi 1.5 and Alibaba's Qwen 2.5, are redefining the competitive landscape by achieving performance on par with leading frontier models in key benchmarks like AI Model Efficiency (AIME) and Massive Multitask Language Understanding (MMLU).¹ This convergence of novel techniques across multiple models signals a shift in AI development, where advancements are not just about raw power but also about optimizing efficiency and deployment. DeepSeek R1 has positioned itself as a standout in cost-effectiveness, which, if sustained in the long term, will accelerate and democratize AI technologies while allowing companies to rethink their investment landscape.

A crucial distinction often overlooked in the industry is that DeepSeek-R1 is an open-weight, not a fully open-source model. Although it is released under the MIT license, allowing fine-tuning, its training code and dataset remain proprietary.² This means that while companies can build upon the model, they do not have full transparency into its underlying training methodology or data sets.

Infrastructure and hardware: A disruptive cost reduction

DeepSeek's claims of reducing LLM training costs by over 90% — from hundreds of millions to just tens of millions of dollars — together with broader market conditions reflect investor uncertainty about future hardware demand. There is uncertainty regarding the way the Deepseek model was trained, and thus the cost-efficiency assertions are yet to be fully proven. However, we have seen other AI leaders indicate the same level of

AI expenditure, with some in the industry highlighting their capability to invest as a strategic advantage.^{3,4}

If DeepSeek's cost-saving innovations prove effective, they could drastically reduce infrastructure and hardware expenses, currently the most capital-intensive component of AI development. Several tech giants in the industry have recently confirmed or increased AI infrastructure investments amounting to trillions, making any substantial cost reductions highly disruptive.⁵ Lower costs will lower entry barriers and democratize access, enabling more companies, especially SMEs, to participate in high-performance AI development.

The Middle East faces a shortage of large-scale computing infrastructure. High-performance data centers — critical for training and deploying AI models — are still under construction, though major initiatives are accelerating. These efforts will define the region's ability to capitalize on AI advancements:

- Saudi Arabia is ramping up AI-ready data hubs through partnerships with Ecditek, Aramco, and Cerebras.^{6,7} Google Cloud in Riyadh's cloud region is set to drive AI innovation, cloud adoption and data sovereignty.⁸ Other major initiatives include Otagon's plan for a 1 GW AI data center in a \$500 million joint venture with NEOM and Ecditek,^{9,10} and Oracle's first hyperscale NEOM tenant for AI-driven data infrastructure.¹¹
- The UAE has launched liquid-cooled superclusters through Du and AI Hosting, and Khazna is building a 100 MW data center in Ajman. Additionally, Nestlé and Dubai AI Campus formed an AI product development and consumer insights partnership.¹²
- Qatar is developing NVIDIA-powered AI sites in collaboration with Ooredoo.¹³ The Ooredoo Group, Infobip, and Microsoft also launched an AI hub for AI-driven messaging and customer interaction.¹⁴

Data: The competitive advantage of proprietary insights

DeepSeek, like OpenAI, Anthropic and others, keeps its training code and dataset proprietary, an approach that underscores the importance of data as the core differentiator between AI companies. For companies keeping their training datasets proprietary, data ontology is the hidden competitive advantage that defines how efficiently the model can extract insights, generalize knowledge, and fine-tune responses. While models may use similar architectures, the real advantage is the unique structuring of proprietary data that enhances pretraining and refinement.

Middle Eastern companies and governments have a significant advantage over global AI players active in the region when it comes to proprietary data, since a data sovereignty approach ensures that AI models trained locally are more competitive than global alternatives that lack access to these exclusive datasets.

Organizations with direct access to first-party data can create insights that competitors cannot easily replicate. For example:

- A bank training its AI risk models on its own first-party transactional data will far outperform models reliant on third-party datasets, gaining an edge in fraud detection, credit scoring and risk assessment for its client base.
- Companies dependent solely on third-party data are vulnerable to regulatory shifts such as General Data Protection Regulation (“GDPR”) and Identifier for Advertisers (“IDFA”) depreciation. Owning first-party data ensures compliance autonomy side-stepping reactionary shifts to external policy changes.

Governments and enterprises in the Middle East have an opportunity to build relevant regional, AI-powered ecosystems driven by proprietary data strategies, giving them an advantage over their global counterparts.

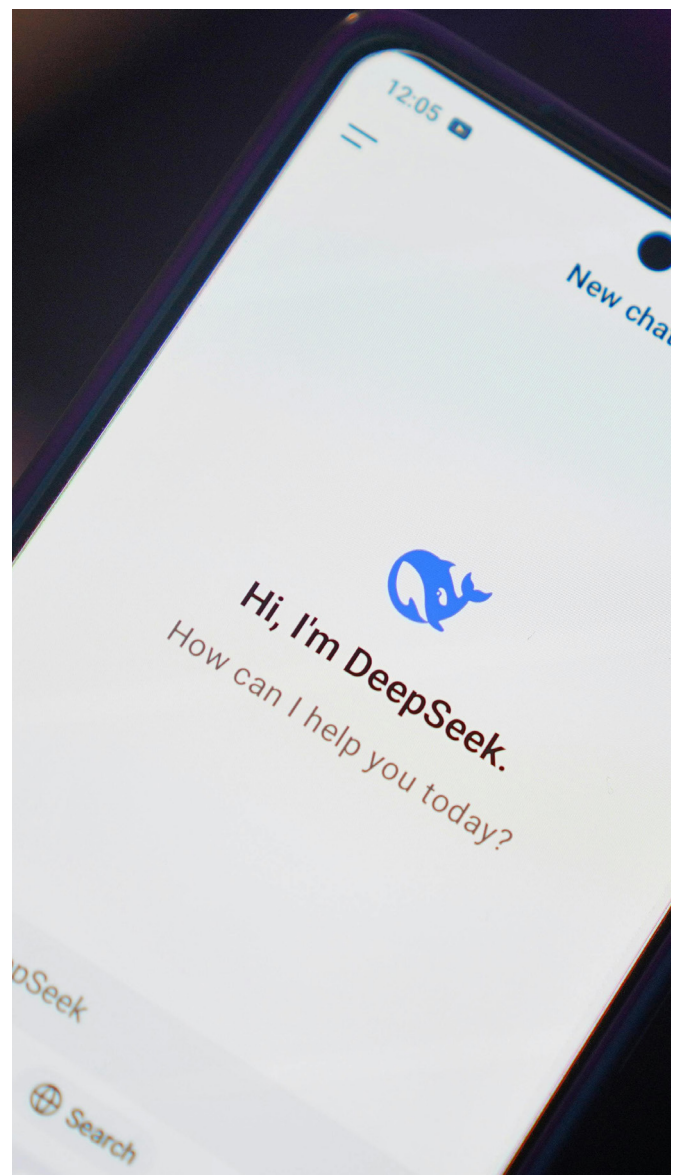
Applications: Unlocking new business opportunities

By significantly lowering AI training costs, open-weight models — if used appropriately — enable organizations to redirect investment from infrastructure toward application development,

setting the stage for industry-wide disruption and innovation.

This shift will create three distinct needs, and the ability to deploy AI-driven applications tailored to regional market dynamics will be a key differentiator for companies across industries:

- **AI Specialists:** Companies will require engineers, data scientists and cybersecurity experts to build, fine-tune and secure AI models.
- **AI-Literate Professionals:** Employees in finance, healthcare and logistics will need strong AI literacy to integrate AI tools into daily operations.
- **Entrepreneurs and Startups:** Open-weight models will enable new businesses to develop proprietary datasets and algorithms that compete globally while maintaining local regulatory and cultural sensitivities.



Usability: Open-weight models vs. proprietary systems

For companies using AI, the impact of open-weight models will be lower in the short term, since open-weight models, when used correctly, can match proprietary models in real-world applications. However, specialized proprietary models will continue to dominate high-value AI applications in the short-to-medium-term, favoring large enterprises with significant resources.

However, Small and Medium-sized Enterprises (SMEs) stand to benefit the most from open-weight models, which allow them to develop AI-driven solutions without the prohibitive costs of training proprietary models from scratch. This is a significant opportunity for the tech start-up ecosystem in the region.

While established AI providers offer reliability and performance, new entrants like DeepSeek introduce fresh innovations. In internal assessments, each AI model is evaluated for long-term scalability, adaptability and compliance, ensuring it integrates into evolving ecosystems while considering security, privacy and regulatory factors.

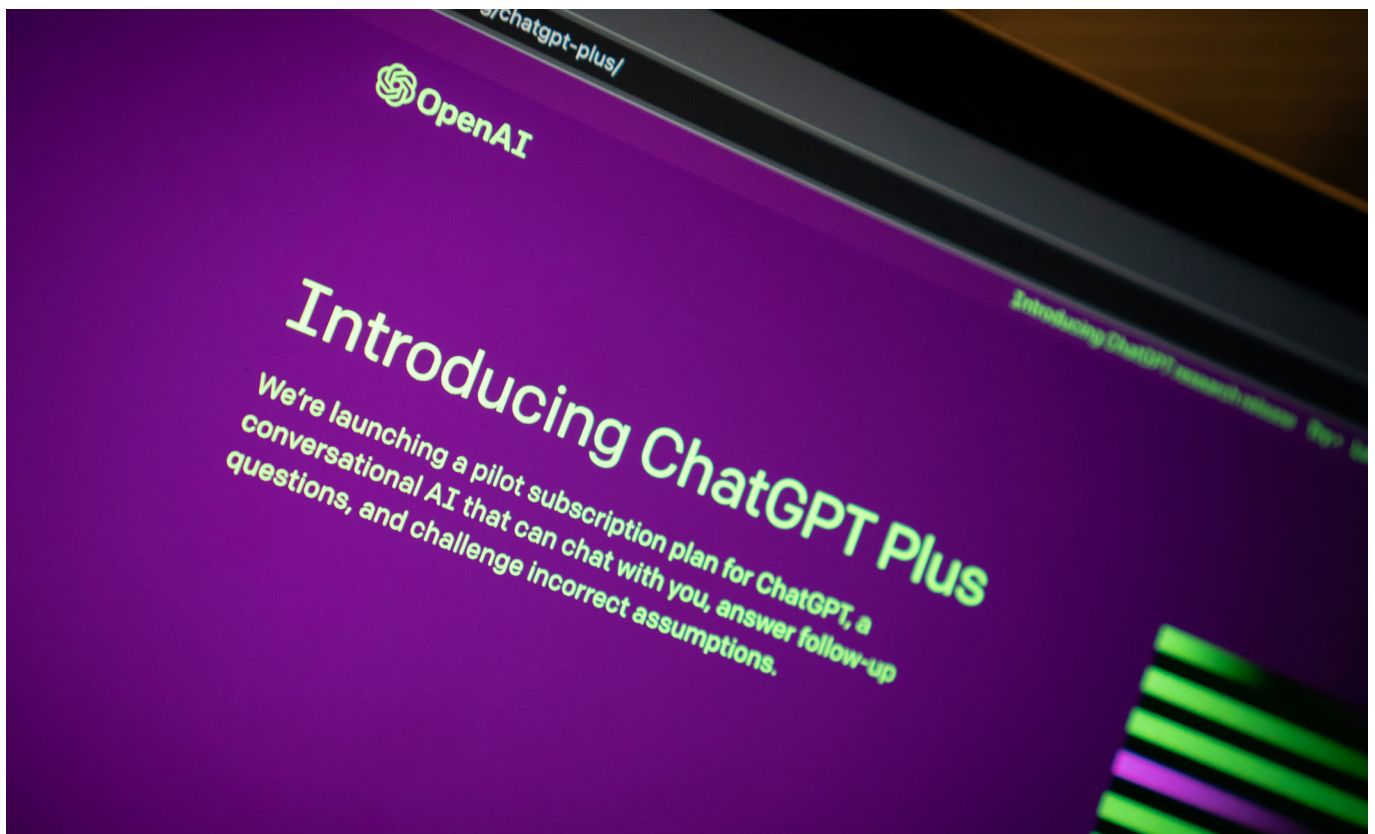
Considerations for the Middle East

AI talent shortage: The biggest barrier

One of the most critical challenges in the Middle East, and globally, is AI talent scarcity. The demand for highly skilled AI professionals far outpaces supply. Governments in the region are actively addressing this gap:

- The UAE has launched AI-focused institutions like MBZUAI and is expanding AI education programs.¹⁵
- Saudi Arabia is expanding AI education in universities through specialized undergraduate and master's programs, AI research centers and revised curricula integrating AI, data science and machine learning to align with Vision 2030.^{16,17}
- To ensure a skilled workforce, Qatar is investing in AI upskilling through initiatives such as WISE's AI in higher education research and Northwestern Qatar's AI and AI-focused programs at Qatar University and University of Doha for Science and Technology.^{18,19}

However, education is a long-term solution. In the short term, the region will remain a global talent magnet, attracting world-class AI professionals to meet its growing demand and cover its supply gaps — UAE, for example, ranks third globally in attracting AI talent while Saudi Arabia ranks 15th worldwide.^{20,21}



Government policy: A driver of AI adoption

Unlike in Western markets where AI is largely driven by the private sector, AI development in the Middle East is government-led. The UAE, Saudi Arabia and Qatar are shaping the AI landscape through large-scale investments, regulations and infrastructure development.

As AI adoption accelerates, governance must evolve proactively rather than reactively, particularly in sectors such as media, healthcare and education, where AI decisions directly impact individuals.

Key concerns include:

- **Bias in AI models:** Many existing models rely on Western-centric datasets, which may misrepresent regional languages and cultures. The UAE, Saudi Arabia and Qatar are addressing this issue with localized AI models like Jais and Falcon in UAE and ALLaM in Saudi Arabia.^{22,23,24,25}
- **Data privacy and sovereignty:** AI development relies heavily on vast datasets, raising concerns over how personal, corporate and governmental data is collected, stored and utilized. In the Middle East, governments are increasingly asserting control over national data assets, introducing data residency laws to prevent over-reliance on foreign cloud providers.
- **Accountability:** Policies must focus on outcomes, accountability and real-world impact, rather than rigid restrictions that disincentivize innovation.

The future: AI as an engine of economic growth

AI in the Middle East is evolving into a cornerstone of economic growth and regional competitiveness. Solid national agendas coupled with large investments are creating true advantages in AI talent development, scalable infrastructure and proprietary data strategies. Uniquely, the Middle East enjoys an enviable geographical position and is quickly becoming a hub for skilled tech.

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