

# Artificial intelligence: How emerging markets enable this key technological advancement

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**Authored by**

**By the Invesco Developing Markets team**

One of the most captivating technological advancements of recent times is artificial intelligence (AI). Importantly, there is a direct connection between AI and emerging markets: A handful of emerging market companies and their underlying semiconductor technologies have been crucial to enabling generative AI solutions. The EM world is also ripe for new waves of hardware innovation and chip design prowess that dovetail into AI products.

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## **The AI story is evolving**

Season One of the AI saga may be remembered for a rather uncomplicated storyline: Markets quickly rewarded semiconductor and hardware companies for powering AI (some deservedly, some not), particularly as the AI wave happily coincided with a cyclical bottoming of inventories in the tech supply chain.

We believe Season Two is expected to feature more nuanced debates about the downstream impact of AI, which may be important in discerning the long-term winners in this space. As emerging market investors, we're following this story closely as a handful of EM companies seek to expand their competitive edge in enabling generative AI solutions.

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## **AI storyline #1: Enterprise versus Consumer**

The use of ChatGPT has become ubiquitous, Microsoft has raced ahead with tools such as its Copilot "AI companion," and IT service firms claim a rising number of AI projects. One might think businesses should see immediate value in AI adoption, but the enterprise world is so beset with disparate data, privacy and regulatory constraints, and a risk-averse outlook to seismic change, that sizeable efficiency gains may be hard to achieve.

Past technology revolutions have been driven by eager consumers, but here too, we need to see truly useful AI applications that can function on our devices. Smartphones may make a comeback if compelling use cases drive a global replacement cycle. We are seeing PC makers call some of their products "AI PCs" – do we need a new PC cycle?

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## AI storyline #2: Offense versus Defense

In the fiscal year ended January 2023, Nvidia reported some \$15 billion in datacenter revenues, which is where its AI business is housed. For the year ending January 2025, Nvidia's customers are expected to spend close to \$100 billion on AI chips. During the second quarter of 2024, Nvidia's data center revenue reached a record, up more than 150% from a year ago. What will the return on investment look like as these spending plans seek revenue tailwinds?

If we assume revenues from search and social media are AI-enabled, then we believe the capital expenditures are merely defensive and may allow existing platform giants to continue their dominance.

However, in our opinion, to sustain such elevated spending, companies need to go on offense creating new revenue streams. These could be through material cost reductions, such as the automation of customer service. Customized software development might accelerate, impacting Software as a Service (SaaS) companies, or accelerated medical drug discovery might transform health care.

The space is evolving rapidly, and moats may not be as wide as they appear. Therefore, optimism about future possibilities needs to be tempered with the risk of disruption. Amid these possibilities, it is clear we are heading into the great unknown.

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## Emerging market companies have played a foundational role in AI enablement

In the EM world, a handful of companies and their underlying semiconductor technologies have been crucial to enabling generative AI solutions, including Nvidia's datacenter graphics processing units (GPUs).

- **Taiwan Semiconductor Manufacturing Corp.** has loomed over all things cutting edge in global semiconductors. With generative AI, its competitive edge has now expanded beyond wafer production to include advanced packaging that effectively "stitches" together the memory and graphics processor chips in a way that helps to achieve a generational leap in performance while minimizing power consumption.
- **SK Hynix and Samsung Electronics** have helped pioneer the market for the high bandwidth memory that vastly improves memory throughputs for GPUs. It has been perhaps the singular most significant semiconductor technology in enabling the acceleration of GPU's massive parallel computing performance.

We believe the EM world is ripe with new waves of hardware innovation and design prowess that dovetail into AI products. These spaces are more complicated, but we need to keep an eye on the evolution of smartphone-related semiconductors, where MediaTek operates, or specific original design manufacturers who might win new business from the chip design efforts of large platforms.

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There is no guarantee that forecasts will come to pass.

All investing involves risk, including the risk of loss.

Many products and services offered in technology-related industries are subject to rapid obsolescence, which may lower the value of the issuers.

The risks of investing in securities of foreign issuers, including emerging market issuers, can include fluctuations in foreign currencies, political and economic instability, and foreign taxation issues.

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