Article AI & Machine Learning

How AMD is Intensifying AI Chip Focus Amid Global Tech Race

By Kitty Wheeler

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As AI applications become increasingly prevalent across various sectors, the demand for specialised chips capable of handling complex AI workloads has increased.

This shift has sparked intense competition among chip manufacturers, with companies vying to develop more powerful and efficient AI processors.

Considering the race to dominate the AI chip market has far-reaching implications for the tech industry, influencing everything from data centre infrastructure to consumer electronics and autonomous vehicles, major tech companies are having to make moves to stay competitive.

In this context, Advanced Micro Devices (AMD), a leading semiconductor company known for its processors and graphics cards, is making strategic decisions to strengthen its position in the AI chip market, recognising the potential for substantial growth in this sector.

The company's focus on AI aligns with broader industry trends, as exemplified by the recent performance of other tech giants like Foxconn, which has reported significant growth in AI-related revenues.

AMD's strategic pivot towards AI chip development

AMD is streamlining its operations to allocate more resources towards this strategic initiative, according to recent announcements.

An AMD spokesperson told Reuters: "As a part of aligning our resources with our largest growth opportunities, we are taking a number of targeted steps".

This move underscores the company's commitment to competing in the lucrative market for AI chips, specifically those used in data centres for processing large volumes of data required by Gen AI technologies.

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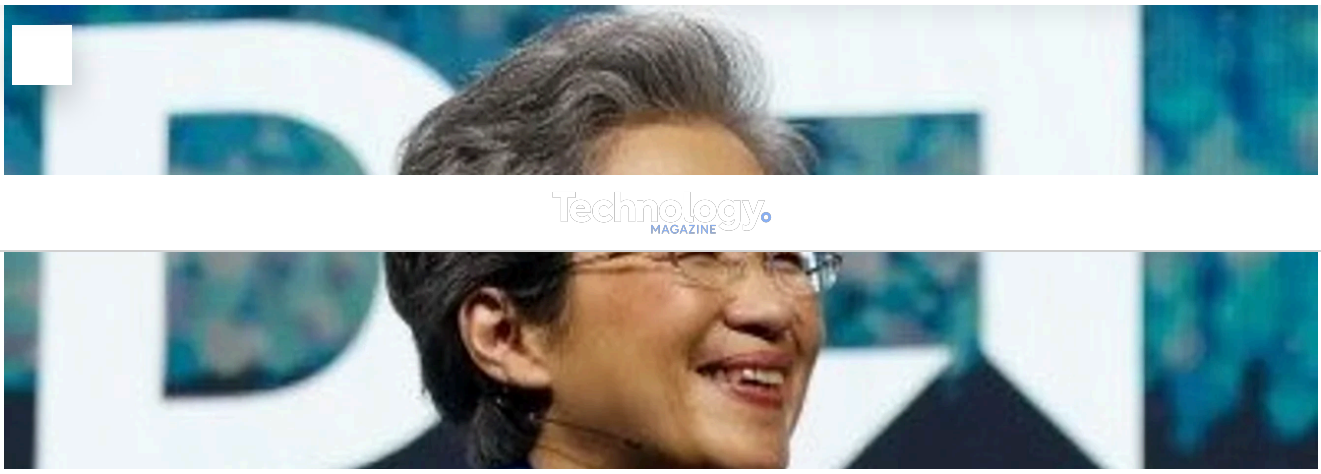

AMD's CEO, Lisa Su

Recently, the company's data centre segment, which includes its AI graphics processors, has shown remarkable growth.

Revenue in this division more than doubled in the September quarter, highlighting the increasing demand for AI-capable hardware.

AMD is further preparing to ramp up production of its latest AI chip, the MI325X, with mass production scheduled to begin in the fourth quarter of this year.

This chip is designed to compete with offerings from industry leader Nvidia, which currently dominates the AI chip market.

AMD's market dynamics and future outlook

The AI chip market is experiencing rapid growth, driven by the increasing adoption of AI technologies across various industries.

Reuters reports that analysts expect AMD's data centre unit to grow by 98% in 2024, significantly outpacing the company's overall expected revenue growth of 13%, according to

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- **Improved the ROCm software stack to enhance performance and compatibility for AI developers**
- **Announced plans for annual releases of new AI chips, with MI350 planned for 2025 and MI400 for 2026**
- **Developed new EPYC 5th Gen CPUs optimised for supporting AI workloads in data centres**
- **Collaborated with major industry partners including Dell, Google Cloud, Microsoft and Oracle Cloud Infrastructure**

Recently, AMD has introduced the Versal Gen 2 adaptive system-on-chips (SoCs), focusing on AI capabilities.

These new chips offer improved AI performance, with up to 3x higher TOPS per Watt than their predecessors, and feature enhanced CPU performance for complex AI workloads in embedded systems.

Emphasising the urgency for AI development, Salil Raje, Senior Vice President and General Manager, Adaptive and Embedded Computing Group at AMD says: “System architects are constantly looking to pack more data into smaller spaces and move data more efficiently between parts of the system.

“Our latest addition to the Versal Gen 2 portfolio helps customers improve overall system throughput and utilisation of memory resources to achieve the highest performance and unlock insights for their most demanding applications from the cloud to the edge.”

AMD’s challenges, competition and alliances

AMD's intensified focus on AI chip development brings both opportunities and challenges as the company positions itself in the competitive global technology market.

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While ramping up production of sophisticated AI components, the company faces increased costs, with research and development expenses rising by 9% and total cost of sales up 11% in the third quarter.

However, the company's strategic collaboration with Microsoft to advance AI innovation, leveraging AMD's AI accelerators with Microsoft's cloud infrastructure, underscores its commitment to comprehensive AI solutions.

This partnership, coupled with investments in software ecosystems, offers high-performance hardware and software solutions for Azure's AI services and customers and demonstrates AMD's recognition of the need for holistic approaches in the AI sector.

Yet AMD must contend with formidable competition, particularly from industry leader Nvidia and emerging players like Foxconn, which reported a staggering 200% growth in AI server

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The company's AI-focused strategy may also lead to a geographical redistribution of its manufacturing and research facilities, with potential expansion in regions boasting strong AI talent pools or favourable regulatory environments for AI development.

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