

In conversation with...

Jin-Hyeok Choi, Corporate Executive Vice President, Samsung Electronics



Dr. Choi, thank you so much for doing this interview for MemCon. Would you please give us a brief introduction of your responsibilities at Samsung?

Thank you for inviting me. I lead Samsung's Device Solutions R&D – Memory division here in Silicon Valley, we develop new memory technologies and enable memory products. I have held various roles at Samsung the past 20 years and developed the world's first eMMC and UFS products.

What are the main factors that are driving the era of data-centric computing?

Overall, data-centric computing is being driven by the need to process and analyze large amounts of data in real-time. Several key factors include:

- 1. The explosion of data.** With the proliferation of IoT, sensors, devices, and apps, people are generating and processing more data than ever before. This trend is only expected to grow over time.
- 2. The rise of AI/ML** – these technologies require huge amounts of data processed in real-time.
- 3. Cloud Computing** has enabled the rapid deployment and scaling of data-centric workloads, making it more cost-effective for organizations to process large amounts of data.
- 4. The advancement of hardware and software** including new processors, memory, and storage options.

However, the existing memory hierarchy cannot meet the new requirements efficiently and suffers from memory walls. For this reason, Samsung has invested in data-centric computing around memory and storage in the areas of computational storage, near-memory processing, and processing-in-memory.

Why is memory innovation so important in this new data-centric computing paradigm?

The trends driving data-centric computing also create opportunities and challenges for memory, including the need to revisit the classic memory wall problem. New innovations are necessary to keep up with demand and improve bandwidth, latency, capacity, and power. Samsung, as the world's leading memory company, has developed a wide range of products across DRAM and NAND to tackle the memory wall problems.

What are the key problems in the datacenter related to memory?

The key problems include capacity, bandwidth, latency, cost, and power consumption. Addressing these problems requires ongoing innovation in memory technologies and system design, like CXL, NVMe and HBM.

What does Samsung offer for companies that need more memory and better memory systems?

Samsung continues to develop upgraded memory capabilities to enable next-generation AI technology and data-centric computing. The latest innovations are paving the way for advanced capabilities that offer greater capacity, increased scalability and improved performance and efficiency. Samsung's latest DRAM module based on Compute Express Link (CXL) offers four times the memory capacity of the previous model. An important step in the commercialization of CXL, the development of CXL DRAM will enable large scale adoption of AI in coming years.

What can we expect from your keynote at MemCon, and what are you most excited about at the event?

In my keynote, I will discuss new challenges and opportunities in regard to memory walls and data-centric computing. I hope to see you there.

I'm excited to be part of MemCon this year, especially being together in person with Samsung partners and colleagues. After years of being all virtual, it is especially rewarding to network and discuss opportunities for innovation together.



Jin-Hyeok Choi
Corporate Executive Vice President
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