

**Inside Micron: major goals, and last quarter's progress.**

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Micron remains on track for a record setting 2022. This past quarter saw 25% revenue growth, with strength in most end markets and record revenue in the automobile market and SSD product (storage) market. Its most recent generation of leading technologies in both of its products, DRAM and NAND, became larger portions of sales. The more of these products Micron produces and sells, the lower the overall costs become. These cost reductions and greater proportion of “high value solutions” allowed Micron to gain profitability despite NAND prices actually falling during the quarter. This bodes well as an example of how Micron is transforming its business to be more successful in a variety of market conditions.

2021 marked the first year the data center market surpassed the mobile phone market as the largest buyer of memory and storage. 40% of server costs are dedicated to memory and storage, and even more when that server includes artificial intelligence capabilities. On the NAND side, Micron introduced a new product, the industry's first 176-layer data center SSD to an enthusiastic response from customers. On the DRAM side, the data center market is transitioning to the next generation DDR5 product, which Micron has already had out on the market.

Features	DDR4	DDR5	DDR5 Advantages
Speed	1.6 to 3.2 Gbps data rate	4.8 to 8.4 Gbps data rate	Higher bandwidth
	0.8 to 1.6 GHz clock rate	1.6 to 4.8 GHz clock rate	DDR5-4800 initial designs
IO Voltage	1.2 V   CA SSTL	1.1 V   CA PODL	Lower power
Power Management	On motherboard	On DIMM PMIC	Better power efficiency Better scalability
Channel Architecture	72-bit data channel (64 data + 8 ECC)	40-bit data channel (32 data + 8 ECC)	Higher memory efficiency
	1 channel per DIMM	2 channels per DIMM	Lower latency
Burst Length	BC4, BL8	BC8, BL16	Higher memory efficiency
Max. Die Density	16Gb SDP → 64GB DIMMs	64Gb SDP → 256GB DIMMs	Higher capacity DIMMs

This chart contains a whole lot of technical jargon, but the advantages that DDR5 has over the previous generation are clear, especially those laid out in the “speed” category: over 100% improvement in speed of data processing. As the industry transitions to DDR5 over the next year, Micron stands to benefit. Its data center revenues were 60% higher than a year ago and are expected to keep that growth rate continuing.

This chart is an example of what CEO Mehrotra meant when he said, “We are now several quarters ahead of our competitors in new memory technology.” Of all Micron’s achievements in the last few years, that is one of the most remarkable.

The outlook for the rest of the year is bright. Demand will remain strong in almost every end market. Over supply should not become an issue. The three companies that dominate the DRAM market have all been disciplined in their production over the last few years, even during times of high prices. On the NAND front, a recent contamination of a chemical used to make NAND at the Western Digital/Kioxia factories impacted roughly a third of the world’s NAND supply and should help support higher prices in the coming quarter. Micron’s setting up for another good year.