

EXHIBIT 12

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Micron Technology, Inc. (MU)

Q4 2024 Earnings Call

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MANAGEMENT DISCUSSION SECTION

Operator: Thank you for standing by and welcome to Micron's Fourth Quarter 2024 Financial Call. At this time, all participants are in a listen-only mode. After the speakers' presentation, there will be a question-and-answer session. [Operator Instructions]

As a reminder, today's program is being recorded. And now, I'd like to introduce your host for today's program, Satya Kumar, Investor Relations. Please go ahead, sir.

Satya Kumar

Corporate Vice President-Investor Relations & Treasury, Micron Technology, Inc.

Thank you, and welcome to Micron Technology's fiscal fourth quarter 2024 financial conference call. On the call with me today are Sanjay Mehrotra, our President and CEO; and Mark Murphy, our CFO. Today's call is being webcast from our Investor Relations site at investors.micron.com, including audio and slides. In addition, the press release detailing our quarterly results has been posted on the website, along with the prepared remarks for this call.

Today's discussion of financial results is presented on a non-GAAP financial basis unless otherwise specified. A reconciliation of GAAP to non-GAAP financial measures can be found on our website. We encourage you to visit our website at micron.com throughout the quarter for the most current information on the company, including information on financial conferences that we may be attending. You can also follow us on X at MicronTech.

As a reminder, the matters we are discussing today include forward-looking statements regarding market demand and supply, market and pricing trends and drivers, the impact of developing technologies such as AI, product

ramp plans and market position, expected capabilities of our future products, our expected results and guidance, and other matters. These forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from statements made today.

We refer you to the documents we file with the SEC, including our Form 10-K, Forms 10-Q and other reports and filings, for a discussion of risks that may affect our future results. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. We are under no duty to update any of the forward-looking statements to conform these statements to actual results.

I'll now turn the call over to Sanjay.

Sanjay Mehrotra

President, Chief Executive Officer & Director, Micron Technology, Inc.

Thank you, Satya. Good afternoon, everyone. Micron delivered a strong finish to fiscal year 2024, with fiscal Q4 revenue at the high end of our guidance range and gross margins and EPS above the high end of our guidance ranges. In fiscal Q4, we achieved record-high revenues in NAND and in our storage business unit. Micron's fiscal 2024 revenue grew over 60%; we expanded company gross margins by over 30 percentage points and achieved revenue records in data center and in automotive. I am thankful to all our Micron team members for their focus and execution, which made these results possible.

We are entering fiscal 2025 with the strongest competitive positioning in Micron's history. We have leadership 1-beta DRAM, G8 and G9 NAND process technology, and leadership products across our end markets. Robust data center demand is exceeding our leading-edge node supply and is driving overall healthy supply-demand dynamics. As we move through calendar 2025, we expect a broadening of demand drivers, complementing strong demand in the data center. We are making investments to support AI-driven demand, and our manufacturing network is well positioned to execute on these opportunities. We look forward to delivering a substantial revenue record with significantly improved profitability in fiscal 2025, beginning with our guidance for record quarterly revenue in fiscal Q1.

Micron is ramping production of the industry's most advanced technology nodes in both DRAM and NAND. Our 1-beta DRAM and G8 and G9 NAND nodes are ramping in high volume and will become an increasing portion of our mix through fiscal 2025. As a reminder, our G8 NAND node refers to our 232-layer NAND technology node.

Our 1-gamma DRAM pilot production using extreme ultraviolet lithography is progressing well, and we are on track for volume production in calendar 2025.

We delivered fiscal 2024 DRAM front-end cost reductions at the high end of the outlook provided at the beginning of the year, and NAND cost reductions were consistent with our forecast. We expect fiscal 2025 DRAM front-end cost reductions excluding HBM to be in the mid-to high-single-digit percentage range. We expect fiscal 2025 NAND cost reductions to be in the low-to mid-teens percentage range.

We continue to make progress on the construction for our new fab in Idaho and are working with state and federal agencies on the permitting process for our New York site. Construction is underway on our India assembly and test facility, as well as our China Xi'an back-end expansion. We are continuously assessing opportunities to manage our manufacturing footprint in a capital-efficient manner. Consistent with this strategy, we announced the acquisition of an LCD factory in Taiwan that will be converted to enable DRAM production testing. Micron's

proprietary and vertically integrated testing capabilities provide competitive differentiation and enable us to provide high-quality products to our customers.

Now turning to our end markets. Memory is essential to extend the frontier of AI capability. Multiple vectors will drive AI memory demand over the coming years, growing model sizes and input token requirements, multimodality, multiagent solutions, continuous training, and the proliferation of inference workloads from cloud to the edge. Micron is focused on translating the opportunities from AI demand into value captured for all our stakeholders.

Demand from data center customers continues to be strong, and customer inventory levels are healthy. Industry server unit shipments are expected to grow in the mid- to high-single-digit percentage range in calendar 2024, driven by strong growth for AI servers, as well as low-single-digit percentage range growth for traditional servers.

We expect traditional server demand to benefit from a refresh cycle, as a single latest-generation traditional server can replace multiple older-generation servers to provide valuable space, power, and performance improvements to improve data center efficiency. We see increasing DRAM and NAND content both in traditional as well as AI servers.

Our mix of data center revenue reached a record level in fiscal 2024, and we expect it will grow significantly from here in fiscal 2025. Micron is well-positioned in the data center with our portfolio of HBM, high-capacity D5 and LP5 solutions, and data center SSD products. We expect each of these three product categories to deliver multiple billions of dollars in revenue in fiscal 2025.

In HBM, we are making excellent progress on our yield and output capability. In fiscal Q4, we delivered on our expected volumes and achieved our objective of several hundred millions of dollars in revenue from HBM in fiscal year 2024. Even as our DRAM gross margins improved, our fiscal Q4 HBM gross margins were accretive to both company and DRAM gross margins, indicative of our solid HBM yield ramp. We expect to achieve HBM market share commensurate with our overall DRAM market share sometime in calendar 2025. We expect the HBM TAM to grow from approximately \$4 billion in calendar 2023 to over \$25 billion in calendar 2025. As a percent of overall industry DRAM bits, we expect HBM to grow from 1.5% in calendar 2023 to around 6% in calendar 2025.

We have a robust roadmap for HBM and are confident we will maintain our time-to-market, technology, and power efficiency leadership with HBM4 and HBM4E. During the quarter, Micron started shipments of production-capable HBM3E 12-high 36 gigabyte units to key industry partners to enable qualifications across the AI ecosystem. Remarkably, Micron's HBM3E 12-high 36-gigabyte delivers 20% lower power consumption than our competitors' HBM3E 8-high 24-gigabyte solutions, while providing 50% higher DRAM capacity. We expect to ramp our HBM3E 12-high output in early calendar 2025 and increase the 12-high mix in our shipments throughout 2025.

As we have said before, our HBM is sold out for calendar 2024 and 2025, with pricing already determined for this timeframe. In calendar 2025 and 2026, we will have a more diversified HBM revenue profile, as we have won business across a broad range of HBM customers with our industry-leading HBM3E solution.

We see strong demand for our high-capacity D5 and LP5 solutions. We are seeing increasing adoption of our high-capacity mono-die-based 128-gigabyte D5 DIMM products. We are leveraging our innovative, industry-leading LP5 solutions to pioneer the adoption of low-power DRAM for servers in the data center. Micron's LP5 is specifically designed with data center and AI applications in mind, offering unique features for enhanced reliability, availability, and serviceability, or RAS, in a server platform. We are focused on LPDDR design innovation to optimize the capacity, power and system reliability requirements of AI server infrastructure.

Data center SSD demand continues to be driven by strong growth in AI, as well as a recovery in traditional compute and storage. Our strategy to use greater levels of vertical integration, including Micron-designed controllers and firmware, has resulted in a data center SSD portfolio that addresses customer requirements for a robust set of features and functionality, competitive total cost of ownership, and industry-leading performance and quality. We have gained substantial share in data center SSDs as a result. We achieved a quarterly revenue record with over \$1 billion in revenue in data center SSDs in fiscal Q4, and our fiscal 2024 data center SSD revenues more than tripled from a year ago.

Turning to PC. As discussed in our last earnings call, PC customers have built inventories due to the rising memory price trajectory, anticipated growth in AI PCs, as well as an expectation of tight supply caused by an increasing portion of production output being dedicated to meeting the growing data center demand. As sell-through of PCs continues at a steady pace with a seasonal increase in second half of calendar 2024, we expect healthier inventories at PC OEMs by spring 2025.

PC unit volumes remain on track to grow in the low-single-digit range for calendar 2024. We expect unit growth to continue in 2025 and accelerate into the second half of calendar 2025, as the PC replacement cycle gathers momentum with the rollout of next-gen-AI PCs, end of support for Windows 10 and the launch of Windows 12.

The PC market is in the early stages of a transformation, and we expect a significant shift toward AI-driven functionalities that promise to enhance user experiences and productivity. AI PCs require a higher capacity of memory and storage. As an example, leading PC OEMs have recently announced AI-enabled PCs with a minimum of 16 gigabyte of DRAM for the value segment and between 32 gigabyte to 64 gigabyte for the mid and premium segments, versus an average content across all PCs of around 12 gigabyte last year.

Micron is well positioned to support the growth of AI PCs with our portfolio of client LPDRAM, DRAM and SSD products. Our low-power compression attached memory module or LPCAMM2 product has had multiple design wins at leading PC OEMs. These modules offer all the benefits of low-power DRAM in an upgradable form factor. Compared to the alternative modular D5-based solutions, LPCAMM2 provides up to 60% lower power and up to 70% better performance along with 60% space savings. Our 3500 client SSD is qualified at all the major PC OEMs and provides the power-performance enhancements needed for AI workloads.

Turning to mobile. Smartphone customer inventory dynamics are evolving in a manner somewhat similar to that of PC customers. Smartphone unit volumes in calendar 2024 are on track to grow in the low to mid-single-digit percentage range, and we expect unit growth to continue in 2025.

Smartphone OEMs are seeking to differentiate their devices by incorporating more AI features such as personalized recommendations, improved camera functionalities, and smarter voice assistants. Recently, leading Android smartphone OEMs have announced AI-enabled smartphones with 12 gigabyte to 16 gigabyte of DRAM, versus an average of 8 gigabyte in flagship phones last year.

Micron is well positioned to support the growth of AI smartphones with our leading-edge memory and storage products. During the quarter, we extended our product leadership with the first customer qualification of our second-generation 1-beta-based LP5X DRAM and second-generation of G8 NAND UFS 4.0 products.

In the automotive market, infotainment and ADAS are driving long-term memory and storage content growth. For the fourth consecutive year, Micron achieved a fiscal year record for automotive revenue in 2024. Micron has built an industry-leading portfolio of automotive-grade DRAM and NAND products that provide best-in-class solutions

for these high growth applications leveraging our technology and product leadership, top quality rankings, and close customer collaborations. During the quarter, we achieved qualification of our 1-beta-based 16 gigabyte LP5 with 9.6 gigabit per second speed for the automotive market, which will support the increased performance requirements driven by AI both in the digital cockpit and ADAS.

The automotive industry continues to adjust the mix of EV, hybrid and traditional vehicles to meet evolving customer demand. As auto customer inventories adjust to this new mix, we expect a resumption in our automotive growth in the second half of fiscal 2025.

Now, turning to our market outlook. Calendar 2024 DRAM industry demand outlook has improved, driven by strength in data center servers, and growth in the other market segments has performed consistent with our prior market commentary. Hence, we have upgraded our expectation for calendar 2024 industry DRAM bit demand growth to now be in the high-teens percentage range. Our expectation for calendar 2024 industry NAND bit demand growth remains in the mid-teens percentage range. In calendar 2025, we expect both DRAM and NAND industry bit demand growth to be around the mid-teens percentage range.

Turning to supply. Constructive industry conditions will help drive the considerable improvements in profitability and ROI that are needed to enable the investments required to support future growth. Due to CapEx and supply reduction actions taken across the industry in 2023, we expect industry wafer capacity in both DRAM and NAND in 2024 to be below 2022 peak levels, and for NAND, meaningfully so. This factor, combined with the increasing mix of HBM wafers, is reducing DRAM supply allocated to traditional products and contributing to the healthy industry supply-demand environment that we expect for DRAM in calendar 2025. Given the significant reduction in industry wafer capacity in NAND and the ongoing low NAND CapEx environment, we also expect a healthy industry supply-demand environment for NAND in calendar 2025.

NAND technology transitions generally provide more growth in annualized bits per wafer compared to the NAND bit demand CAGR expectation of high teens. Consequently, we anticipate longer periods between industry technology transitions and moderating capital investment over time to align industry supply with demand. This can reduce both R&D expense growth and capital intensity in NAND over time, which can contribute to the improved financial health of the NAND industry.

Micron invested \$8.1 billion in CapEx in fiscal 2024. We expect fiscal 2025 CapEx to be meaningfully higher and at around mid-30s percentage range of revenue based on our current CapEx and revenue expectations. The growth in both greenfield fab construction and HBM CapEx investments is projected to make up the overwhelming majority of the year-over-year CapEx increase. As a reminder, our investments in facility and construction in Idaho and New York will support our long-term demand outlook for DRAM and will not contribute to bit supply in fiscal 2025 and 2026. Micron will continue to exercise supply and CapEx discipline and focus on improving profitability, including walking away from less profitable business, while still maintaining our overall bit market share for DRAM and NAND.

I will now turn it over to Mark for our financial results and outlook.

Mark Joseph Murphy

Chief Financial Officer & Executive Vice President, Micron Technology, Inc.

Thank you, Sanjay, and good afternoon, everyone. In fiscal Q4, Micron delivered revenue at the high end of the guidance range and gross margin and EPS above the high end of the guidance ranges. We are exiting the fiscal year with excellent momentum, having expanded our industry-leading product portfolio, executed well on pricing, and improved our financial performance significantly from the start of the year.

Total fiscal Q4 revenue was approximately \$7.8 billion, up 14% sequentially and up 93% year over year. Fiscal 2024 total revenue was \$25.1 billion, up 62% year over year.

Fiscal Q4 DRAM revenue was \$5.3 billion, up 93% year over year, and represented 69% of total revenue. Sequentially, DRAM revenue increased 14%, with flattish bit shipments and prices increasing in the mid-teens percentage range.

For the fiscal year, DRAM revenue increased 60% year over year to \$17.6 billion, representing 70% of total revenue. Fiscal Q4 NAND revenue was \$2.4 billion, up 96% year over year, and represented 31% of Micron's total revenue. NAND revenue increased 15% sequentially, with bit shipments increasing in the high-single-digit percentage range and prices increasing in the high-single-digit percentage range. Fiscal Q4 NAND revenue was a new quarterly record for Micron.

For the fiscal year, NAND revenue increased 72% year over year to \$7.2 billion, representing 29% of total revenue.

Now turning to revenue by business unit. Compute and Networking Business Unit revenue was \$3 billion, up 17% sequentially. Data center server DRAM achieved a quarterly revenue record in fiscal Q4, driven by strong demand for high-capacity solutions as well as our continued ramp of HBM.

Revenue for the Mobile Business Unit was \$1.9 billion, up 18% sequentially driven by seasonal product ramps. Revenue for the Storage Business Unit was \$1.7 billion, up 24% sequentially and led by data center SSD, which reached a quarterly revenue record. We achieved record-high revenue for fiscal year 2024 for our NAND storage business.

Embedded Business Unit revenue was \$1.2 billion, down 9% sequentially. In fiscal 2024, the automotive segment achieved a new fiscal year revenue record for the fourth consecutive year.

The consolidated gross margin for fiscal Q4 was 36.5%, improving over 8 percentage points sequentially. Higher pricing and improved product mix were the key drivers of the stronger profitability. For the fiscal year, consolidated gross margin was 23.7%, up over 31 percentage points year over year.

Operating expenses in fiscal Q4 were \$1.081 billion, up \$105 million sequentially due to an increase in R&D program expenses. For the fiscal year, operating expenses were \$4 billion, up 11% year over year. The increase in fiscal 2024 operating expenses was primarily driven by an increase in R&D investments and reinstatement of short-term incentive compensation.

We generated operating income of \$1.7 billion in fiscal Q4, resulting in an operating margin of approximately 23%, which was up 9 percentage points sequentially and up 53 percentage points from the year-ago quarter. Fiscal 2024 operating income was \$1.9 billion, resulting in an operating margin of approximately 8%, which was up 39 percentage points year over year.

Fiscal Q4 adjusted EBITDA was \$3.7 billion, resulting in an EBITDA margin of 48%, up 5 percentage points sequentially and up 30 percentage points from the year-ago quarter. Fiscal 2024 EBITDA was \$9.7 billion, resulting in an EBITDA margin of over 38%, which was up 20 percentage points year over year.

Micron Technology, Inc. (MU)

Q4 2024 Earnings Call

 Corrected Transcript
25-Sep-2024

Fiscal Q4 taxes were \$387 million and higher than our guide, largely due to a shift in the jurisdictional mix of earnings. Fiscal 2024 taxes were \$379 million, or approximately 20% of pre-tax income. Non-GAAP diluted earnings per share in fiscal Q4 was \$1.18, compared to \$0.62 per share in the prior quarter and a loss per share of \$1.07 in the year-ago quarter. Fiscal Q4 non-GAAP EPS exceeded the high end of our guidance range, driven by better pricing and profitability. Fiscal 2024 non-GAAP EPS was \$1.30.

Turning to cash flows and capital spending, our operating cash flows were \$3.4 billion in fiscal Q4, representing 44% of revenue. For the fiscal year, we generated \$8.5 billion of operating cash flows, representing 34% of revenue. Capital expenditures were \$3.1 billion during the quarter. Capex totaled \$8.1 billion for the fiscal year, up from \$7 billion in fiscal 2023.

We generated \$323 million of free cash flow for the quarter and \$386 million for the fiscal year. As announced in early August, we determined that share repurchases may resume in light of improved conditions. As such, with our return to free cash flow, reduced leverage, and long-term positive outlook, we saw an opportunity to repurchase shares in the quarter. In fiscal Q4, we repurchased \$300 million, or 3.2 million shares, at an average price of \$93.07 per share.

Micron's fiscal Q4 ending inventory was \$8.9 billion, or 158 days, up 3 days from the prior quarter. Micron continues to exercise pricing discipline and expects a healthy supply-demand environment in the industry in fiscal 2025. We intend to draw down our inventory to support our revenue growth in fiscal 2025.

On the balance sheet, we held \$9.2 billion of cash and investments at quarter-end and maintained near \$11.7 billion of liquidity, when including our untapped credit facility. We ended the quarter with \$13.4 billion in total debt, low net leverage, and a weighted average maturity on our debt of 2031. We are committed to further strengthening our balance sheet and sustaining our investment-grade credit rating.

Now turning to our outlook for the fiscal first quarter. Fiscal Q1 gross margin is projected to improve sequentially primarily on better pricing and portfolio mix. Recall that in fiscal Q4, HBM remained accretive to both DRAM and overall company gross margins. We project changes in our portfolio mix to continue to be an important and favorable contributor to gross margins over time.

We forecast operating expenses to be flat to slightly up in the fiscal first quarter, compared to fiscal fourth quarter levels. For the full fiscal year 2025, we see operating expenses growing by a mid-teens percentage versus fiscal 2024. Growth in operating expenses is planned to be second half weighted, as we ramp necessary R&D program investments, including for HBM, to capture the substantial growth opportunity ahead.

For fiscal Q1 and fiscal 2025, we estimate our non-GAAP tax rate to be in the mid-teens percent range. We project days of inventory outstanding to decline in fiscal 2025 and for DIO to approach our target by the end of fiscal 2025.

In fiscal Q1, we forecast capital expenditures to increase sequentially to approximately \$3.5 billion. As Sanjay mentioned, we expect fiscal 2025 CapEx to be around mid-30s percentage range of revenue based on our current CapEx and revenue expectations. We remain circumspect with all capital spending and disciplined with WFE investments in order to grow bit supply in line with industry demand.

With all these factors in mind, our non-GAAP guidance for fiscal Q1 is as follows: we expect revenue to be \$8.7 billion, plus or minus \$200 million; gross margin to be in the range of 39.5%, plus or minus 100 basis points; and operating expenses to be approximately \$1.085 billion, plus or minus \$15 million. As mentioned, we expect the

Micron Technology, Inc. (MU)

Q4 2024 Earnings Call

C Corrected Transcript
25-Sep-2024

fiscal Q1 tax rate to be in the mid-teens percent range. Based on a share count of approximately 1.14 billion shares, we expect EPS to be \$1.74 per share, plus or minus \$0.08.

In closing, we remain focused on investing in a disciplined manner to support our growth and maintain stable bit share in DRAM and NAND. Micron is well-positioned to deliver record revenue as well as significantly improved profitability and free cash flow in fiscal 2025.

I will now turn it back over to Sanjay.

Sanjay Mehrotra*President, Chief Executive Officer & Director, Micron Technology, Inc.*

Thank you, Mark. Fiscal 2024 was a year of many records as we discussed earlier, and I expect fiscal 2025 to be even better. With the advent of AI, we are in the most exciting period that I have seen for memory and storage in my career. Micron's memory and storage innovations are enabling tremendous breakthroughs, transforming how the world uses information to enrich life for all.

Micron has sustained multiple generations of technology leadership in DRAM and NAND. Our unique culture and our industry-leading product portfolio, combined with our world-class manufacturing execution and quality, are enabling us to deliver differentiated, high-value solutions across end markets. This has made us the partner of choice for our customers, as they plan their long-term roadmaps, and our momentum lays the foundation for an exciting fiscal 2025.

Thank you for joining us today. We will now open for questions.

QUESTION AND ANSWER SECTION

Operator: Certainly. Thank you. And our first question comes from the line of Timothy Arcuri from UBS. Your question, please.

Timothy Arcuri*Analyst, UBS Securities, LLC*

Q

Thanks a lot. Mark, I guess, my first question is some of the assumptions in guidance, I think you've been saying kind of on the conference circuit that bits would be pretty flat in fiscal Q1 for both DRAM and NAND. Is that what you're still assuming so that most of the increase in the revenue is basically pricing, is that correct?

Mark Joseph Murphy*Chief Financial Officer & Executive Vice President, Micron Technology, Inc.*

A

What we see now – and we had provided a slight update in August, but we now see that DRAM bits we expect to be up somewhat higher than what we had said before. We had said before they were going to be flat, and we revised that to flat to slightly up. And in this latest guide, we now view DRAM to be up somewhat higher from that. NAND bits we expect to be sequentially flattish.

Keep in mind that our guide also contemplates a healthy supply demand environment and an increasingly favorable mix in the business with HBM high-capacity DIMMs, LP, data center SSD. So we see stronger data

Micron Technology, Inc. (MU)

Q4 2024 Earnings Call

C Corrected Transcript
25-Sep-2024

center demand, and we had indicated it was robust, and that's been favorable. And then we're just executing well on our product roadmaps, our product execution, our overall manufacturing execution.

Timothy Arcuri*Analyst, UBS Securities, LLC*

Q

Thanks, Mark. And then just one last thing. You had said that HBM revenue last quarter in May was a little over \$100 million. Can you give us the number in August? It looks like it was \$300 million, \$300 million to \$350 million, something like that. Is that about right for your HBM revenue in fiscal Q4?

Sanjay Mehrotra*President, Chief Executive Officer & Director, Micron Technology, Inc.*

A

We are not disclosing specific revenue for F Q4. We have said earlier that we'll have several hundred million dollars of revenue in fiscal year 2024, and we achieved that objective and really very proud of all the execution from our team in terms of putting in place the capacity, managing the yield ramp successfully to our goals and of course continuing to deliver a strong product to our customer base. So we are not going to be providing specifics on a quarter-by-quarter basis. But keep in mind, yes, we delivered several hundred million dollars of revenue in fiscal year 2024, and we look forward to delivering multiple billions of dollars of revenue of HBM in fiscal year 2025.

Timothy Arcuri*Analyst, UBS Securities, LLC*

Q

Okay. Thank you, Sanjay.

Operator: Thank you. And our next question comes from the line of CJ Muse from Cantor Fitzgerald. Your question, please.

CJ Muse*Analyst, Cantor Fitzgerald & Co.*

Q

Yeah. Good afternoon. Thank you for taking the question. I guess first question on gross margins. You guided up a robust 300 basis points. Was hoping you could spend a little bit of time kind of walking us through what's driving that, how much is from like-to-like DRAM ASP increases, mix, HBM yield improvements and cost-downs. And I guess as we kind of walk through that, can you give us a flavor of how to think about those drivers beyond the November quarter?

Mark Joseph Murphy*Chief Financial Officer & Executive Vice President, Micron Technology, Inc.*

A

C.J., in the fourth to first quarter, as we look at that margin expansion, it's similar to the themes we've talked about before. The supply/demand environment is healthy, so we're seeing that play through in pricing. We're also seeing the execution of our product roadmap and the ramp of the higher value products and that's contributing. On cost, we are doing well on cost-downs. However, in the first quarter, because of the mix of HBM, we are going to see DRAM costs go up slightly. So as we look forward into the first quarter, things are coming together as we had hoped. Tight at the leading edge, good supply demand, favorable pricing environment, and certainly favorable mix and that becoming a more important part of the business, and good cost execution.

CJ Muse*Analyst, Cantor Fitzgerald & Co.*

Q

Micron Technology, Inc. (MU)

Q4 2024 Earnings Call

C Corrected Transcript
25-Sep-2024

Very helpful. And then I guess maybe as a follow up, you've reiterated your CapEx outlook, but obviously the end market environment has changed a bit in the last three months. So curious if you've changed your prioritization of CapEx at all. Obviously, you talked about a focus on shelves in HBM. Any other change in terms of your spending?

Sanjay Mehrotra*President, Chief Executive Officer & Director, Micron Technology, Inc.*

A

Not really. We don't have any other change. Continuing to focus our CapEx on HBM investment which, as you know, is a high-value solution and product tends to be accretive to the margins. And of course, long-term construction CapEx is targeted for longer-term bit growth for the latter part of the decade.

CJ Muse*Analyst, Cantor Fitzgerald & Co.*

Q

Thank you.

Operator: Thank you. And our next question comes from the line of Krish Sankar from TD Cowen. Your question, please.

Krish Sankar*Analyst, TD Cowen*

Q

Yeah. I have two questions. One, Sanjay, your AI GPU customers are moving to a one-year cadence of your products, and it looks like the HBM roadmap is also moving to that 12 month from a prior 18-month cadence. Do you think that this puts you and your peers at a yield disadvantage, i.e., in other words, as HBM3E yield and gross margin improves, you have to migrate to HBM4 and that new load might come at a lower yield. So I'm just kind of curious how to think about that cadence of HBM progression and how that impacts yield and gross margin. And then I had a quick follow up.

Sanjay Mehrotra*President, Chief Executive Officer & Director, Micron Technology, Inc.*

A

As we mentioned, we are doing well with respect to our goals on HBM3E yields with 8-high. And in 2025, of course, we will be increasing, beginning that output in early 2025, with 12 high. 12 high will be going through its own yield ramp, and 12 high will be ramping throughout calendar year 2025. And HBM4 will be a 2026 product, and like any other new product, there are in the early stages always a ramp-up of yield involved. But we are very pleased with the technical expertise that we have, manufacturing expertise, and doing really quite well in terms of continuing to ramp up the yield and the quality of our products.

And at the end of the day, our customers' cadence moving faster only benefits those who have the best product and technology because they are the ones who are able to work with the customers at the pace that they need. And with our HBM3E which has demonstrated clear leadership in performance, in power and overall product feature set for our customers, we absolutely plan to maintain that leadership going forward with our roadmap from 8-high to 12-high of HBM3E and HBM4 and 4E in the future years. Along with our expertise in manufacturing, that should play to our strength in the timeframe ahead.

And we work very closely with our customers.

Micron Technology, Inc. (MU)

Q4 2024 Earnings Call

C Corrected Transcript
25-Sep-2024**Krish Sankar***Analyst, TD Cowen*

Q

Got it. Very helpful.

Sanjay Mehrotra*President, Chief Executive Officer & Director, Micron Technology, Inc.*

A

We work very, very closely with our customers to understand their cadence, to understand their requirements and make sure that our roadmap, both from technology, product and manufacturing capability, is aligned well with their requirements.

Krish Sankar*Analyst, TD Cowen*

Q

Got it. Thanks. Thank a lot for that, Sanjay. Super helpful color. I had a quick follow up for Mark on inventory. I understand you're going to draw that down in FY 2025, but just in the last quarter, it went up. Any color on where that inventory levels is going up? Is that within PCs? Is it mobile DRAM? Any color there would be helpful. Thanks a lot.

Mark Joseph Murphy*Chief Financial Officer & Executive Vice President, Micron Technology, Inc.*

A

We were clear about this in the August conferences that while we are seeing robust data center demand, we were seeing some customers that were buying ahead in anticipation of price increases, the rollout of AI-related devices and just surety of supply, given that leading edge is tight. We did see some inventory build, and we communicated that inventories would remain elevated going into FY 2025 so it's what you see. Our days did go up.

We continue to be prudent with our supply and walking away from less-profitable business. We do expect the supply-demand environment to be constructive for improved profitability in 2025. And given the tight leading-edge nodes and our outlook, we're going to need these inventories to bridge us to when our production on tech-node transitions ramps. So that's why we've given an outlook that our inventories by the end of the fiscal year we expect to be approaching our target inventory levels.

Now our volumes happen to be a bit more second-half weighted of the fiscal year, so we'll see a bit shallower improvement at the first half of the fiscal year and then that improvement in DIO will steepen as we move through the second half. But we are confident in our inventory outlook and definitely need these leading-edge inventories to supply the market.

Krish Sankar*Analyst, TD Cowen*

Q

Thanks, Mark.

Operator: Thank you. And our next question comes from the line of Joseph Moore from Morgan Stanley. Your question, please.

Joe Moore*Analyst, Morgan Stanley & Co. LLC*

Q

Micron Technology, Inc. (MU)

Q4 2024 Earnings Call

C Corrected Transcript
25-Sep-2024

Great. Thank you. In terms of your target for getting to HBM market share that's more in line with your overall market share, can you kind of characterize how you get there? Do you anticipate that it's still a supply-constrained environment for everybody or are we sort of a little bit more balanced in the quality of the Micron product drives us through? Just what's the determinant of that market share that gets you to that level?

Sanjay Mehrotra*President, Chief Executive Officer & Director, Micron Technology, Inc.*

A

Certainly, we are being responsible and disciplined in terms of managing our market share. We have industry's best HBM3E product, and it's the best product with 30% lower power with 8-high. And, in fact, when you go to 12-high, we are 20% lower power despite 50% increase in capacity versus others' 8-high products. So we are well-positioned with our product, with its performance, with its power, and that's what is really putting us in this strong position of product being sold out for our 2024 and 2025 timeframe.

And when we look at HBM, we have talked about that next year, we project a TAM of \$25 billion, consuming about 6%, over 6% of the industry bits, in fact, a TAM of greater than \$25 billion in 2025. And we are pretty confident that with our product, with our yield ramp, and with the agreements that we have in place with our customers, we will deliver sometime in 2025 to get to our share to be in line with our industry share.

So, of course, it's limited at this point by our production ramp, but we are really on a very good trajectory there. So we feel very confident with our product and with our production ramp and with share opportunities. And frankly, our HBM3E product is getting premium in the industry as well versus other products so it just puts us on a good trajectory ahead as well.

Joe Moore*Analyst, Morgan Stanley & Co. LLC*

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Great. Thank you. Congratulations.

Operator: Thank you. And our next question comes from the line of Vivek Arya from Bank of America Securities. Your question, please.

Vivek Arya*Analyst, BofA Securities, Inc.*

Q

Thanks for taking my questions. I had two as well. Sanjay, on that same topic of HBM, there is some concern about the potential for HBM oversupply in 2025, let's say, if there are three suppliers instead of the two there are right now. Is that something you see that there is any potential for oversupply?

And let's say if you take the other scenario where there continue to be only two suppliers of next-gen HBM, do you think the third supplier could flood the market with additional DRAM, just sort of the reverse of this trade ratio argument? So just curious to hear how you think about the supply-demand dynamics for both traditional DRAM and HBM for next year.

Sanjay Mehrotra*President, Chief Executive Officer & Director, Micron Technology, Inc.*

A

We certainly assume that the third supplier will ultimately succeed in having HBM3E product as well, and will have some share in the marketplace as well. And again, as I pointed out earlier, with the solid product that we have, our product is sold out through 2025 timeframe, and we are really well-positioned with this product.

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I think the part that you have to keep in mind is that leading-edge supply, as we have mentioned here, is tight. Leading edge supply is tight because industry in 2022-2023 timeframe with reductions in CapEx and CapEx-efficient industry-wide transitions to the newer technology nodes, the wafer capacity has come down from the peak levels in meaningful ways.

So, the lower wafer capacity compared to the peak of 2022, as well as the HBM 3 to 1 trade ratio, these are the ones that are overall keeping the industry in a tight supply, and tight supply not just for HBM but also for non-HBM part of the market.

So we feel very good about our own plans with HBM, and we always stay completely focused on managing the mix of our business between non-HBM and HBM and remaining extremely disciplined about CapEx, about our share objectives. We have shared those share objectives about HBM here.

Overall, we have said we maintain our DRAM, as well as NAND supply share to be stable, and this is how we look at the overall market. But when you look at the market trends, it's not just about demand trend on HBM, which is growing substantially, becoming more than \$25 billion market in 2025. It's also about a fast spring we see that demand for memory in smartphones and PCs as AI-enabled smartphones become bigger and bigger part of the market in the quarters and the years to come. Customer inventories by spring timeframe in smartphone and PCs for memory get to healthier levels, we see that to be a driver of demand as well to complement the strong data center demand.

And we are looking at strong momentum not just with HBM. We have talked about multiple billions of dollars of revenue that we target to generate in our fiscal year 2025 from high-capacity DRAM modules, as well as LP memory in data center.

So, these are all the elements that point to strong demand trends, as demand trends driven by AI in data center, as well as in smartphone and PCs, where more and more content is required in an environment where the leading-edge supply is today tight. So, I think the opportunity is tremendous, and we see healthy demand-supply balance and a constructive environment for our financial performance in fiscal 2025. And that's why we say with confidence that we'll deliver a substantial revenue record in fiscal year 2025 with significant improvement in our profitability as well.

Vivek Arya*Analyst, BofA Securities, Inc.*

Q

Got it. Very helpful. And maybe a quick follow-up for Mark. Mark, on the Q3 call, I think you were a little more explicit about both industry pricing and your gross margins expanding through fiscal 2025. Is that still a useful construct from what you see today? Or do you think there is a scenario where gross margins or your pricings start to flatten out or even go in the other directions through fiscal 2025? What is the operating assumption for fiscal 2025 as you see it right now? Thank you.

Mark Joseph Murphy*Chief Financial Officer & Executive Vice President, Micron Technology, Inc.*

A

Maybe just following up here and drawing on Sanjay's comments, we see a very positive setup in fiscal 2025, and so had set substantial revenue records, significantly improved profitability. The supply-demand setup is quite good. The market's leading-edge is very tight. As we've talked about, the industry wafer capacity has come down. And so, and HBM of course is creating supply constraints in the marketplace as that share bits increase.

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So we still see that the supply and demand environment is healthy through the year. We also are constructive for the year. We also see the trend we've talked about that our volume is increasingly moving to support higher value add products with our differentiated portfolio, so HBM, high-capacity DIMMs, more LP, and then our NAND SSD for data center portfolio products. So, I think the margin expansion through the year supported by those elements and continued good cost performance gives us confidence on a very good year.

Vivek Arya*Analyst, BofA Securities, Inc.*

Q

Thank you.

Operator: Thank you. And our next question comes from the line of Toshiya Hari from Goldman Sachs. Your question, please.

Toshiya Hari*Analyst, Goldman Sachs & Co. LLC*

Q

Thank you. I had a two-part question on the HBM business. Sanjay, you talked about you all being sold out through calendar 2025. I'm curious if there's an opportunity for Micron to present upside or deliver upside to what the plan is currently for 2025? Or are equipment lead times such that you're essentially capped vis-à-vis what your expectations are today for HBM specifically?

And then my second part is on gross margin for HBM. We all understand that the business is accretive to both the corporate average and also relative to DRAM. As you look forward into calendar 2025 with volumes locked in and pricing locked in, I would assume you've got decent visibility on gross margin. Should we expect HBM gross margins to stay kind of where they are? Or could they move further up as long as you execute on the yield side? Thanks.

Sanjay Mehrotra*President, Chief Executive Officer & Director, Micron Technology, Inc.*

A

So regarding the part of your question on the upside for HBM in 2025, so again, let me emphasize that we are extremely focused on delivering our goals of getting to our share in HBM to be in line with DRAM share sometime in 2025. Extremely focused on continuing to ramp up our production capacity in DRAM, which are going well according to our plan. Very pleased with that. So remaining focused on that.

If there are opportunities to be opportunistic with any upsides, we will be capturing those. And those upsides always remain. In yields we expect to get to mature yields on our HBM in fiscal year 2025. Yields are always an upside opportunity. Productivity of the equipment always can be an opportunity as well. So we'll manage our business responsibly and with total focus on delivering to our goals and maintaining our focus on keeping our HBM commitment to our customers coming through successfully.

Now regarding your questions on gross margin being accretive, yes, we would expect our HBM business to be accretive for our fiscal year 2025. Beyond that, really not providing any further details. And yes, you're right that our volume and pricing for HBM is locked up for 2024 as well as for 2025 timeframe. Calendar year 2024 and calendar year 2025.

Toshiya Hari*Analyst, Goldman Sachs & Co. LLC*

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Great. And then as a quick follow up on DRAM industry bit growth, I think you raised your 2024 outlook to high teens and you gave a preliminary 2025 outlook of mid-teens. I'm curious what's driving the decel from 2024 to 2025. Is the 2025 number a supply constraint number? From a demand perspective, Sanjay, you sounded pretty constructive on PCs and smartphones, and obviously, the content opportunity. And you remain pretty positive on data center. So I'm just curious what's driving the expected decel in 2025. Thank you.

Sanjay Mehrotra*President, Chief Executive Officer & Director, Micron Technology, Inc.*

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We have in the past talked about DRAM CAGR being mid-teens. In 2024, we have increased the outlook to high teens based on the strength in the data center. And 2025, as we look at it, just keep in mind two factors. One is we are now comparing it to the higher base of 2024 which has gone to high teens. So that, of course, impacts the percentage of the 2025.

And second piece is that as we have noted, the smartphone and PCs, which at the end market level are continuing to do fine, but given for the three factors that we have mentioned in our earnings calls that the customers build some inventory, the sell-in is somewhat less than their sellout in terms of memory. And we have said that by spring of 2025 we expect in PCs customer inventory levels to get to healthier levels versus now. And these will continue to improve. So that too plays a factor.

I would just like to remind you that we have pointed out that overall smartphone and PC unit growth will be occurring in 2025 and, increasing penetration of AI phones. And second half that acceleration, that growth, will be obviously stronger than the first half. So all of these factors are included in our current outlook of 2025 DRAM growth being in mid-teens.

And let me just point out that previously we have said that HBM we would expect it to be greater than \$20 billion opportunity in 2025. We have now said HBM is more than a \$25 billion opportunity in 2025. So, as you know, HBM has a trade ratio of three to one. It takes three times as many wafers to produce the same bits as standard products with the technology nodes. So obviously the growth of HBM also impacts the total bit growth year-over-year in aggregate.

Toshiya Hari*Analyst, Goldman Sachs & Co. LLC*

Q

Thank you.

Operator: Thank you. And this does conclude the question-and-answer session as well as today's program. Thank you, ladies and gentlemen, for your participation. You may now disconnect. Good day.

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