

Next-Generation DRAM Technology and Market Trends

Presenter:

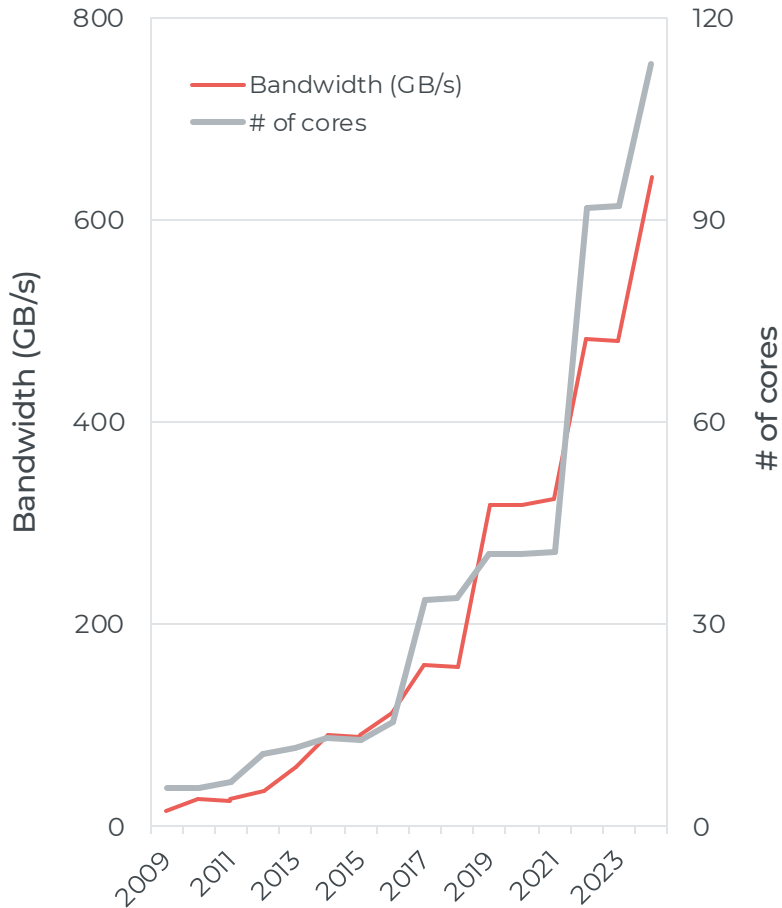
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Principal Analyst at Yole Intelligence

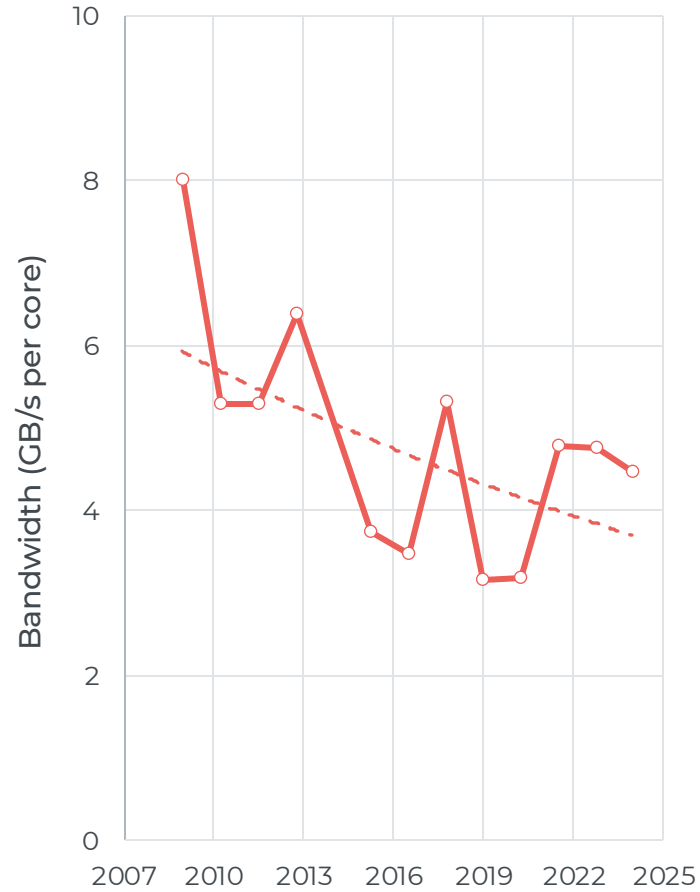
MEMORY AND COMPUTING TECHNOLOGY LANDSCAPE

Memory is struggling to keep pace with fast-growing data generation and computing demand

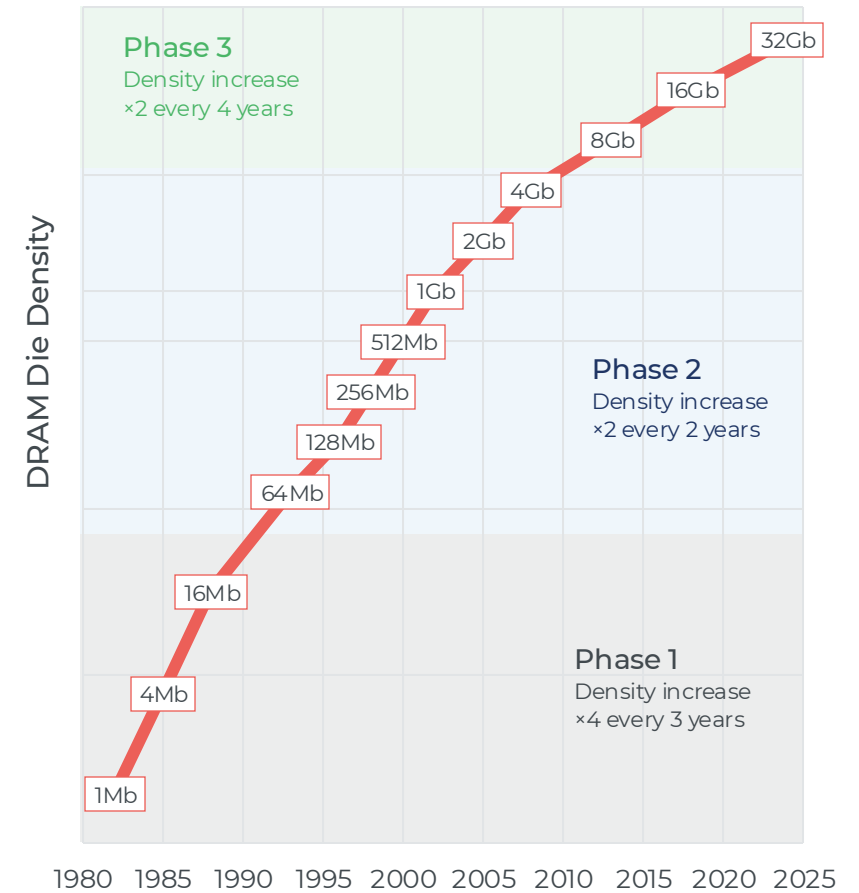
Compute demand is accelerating



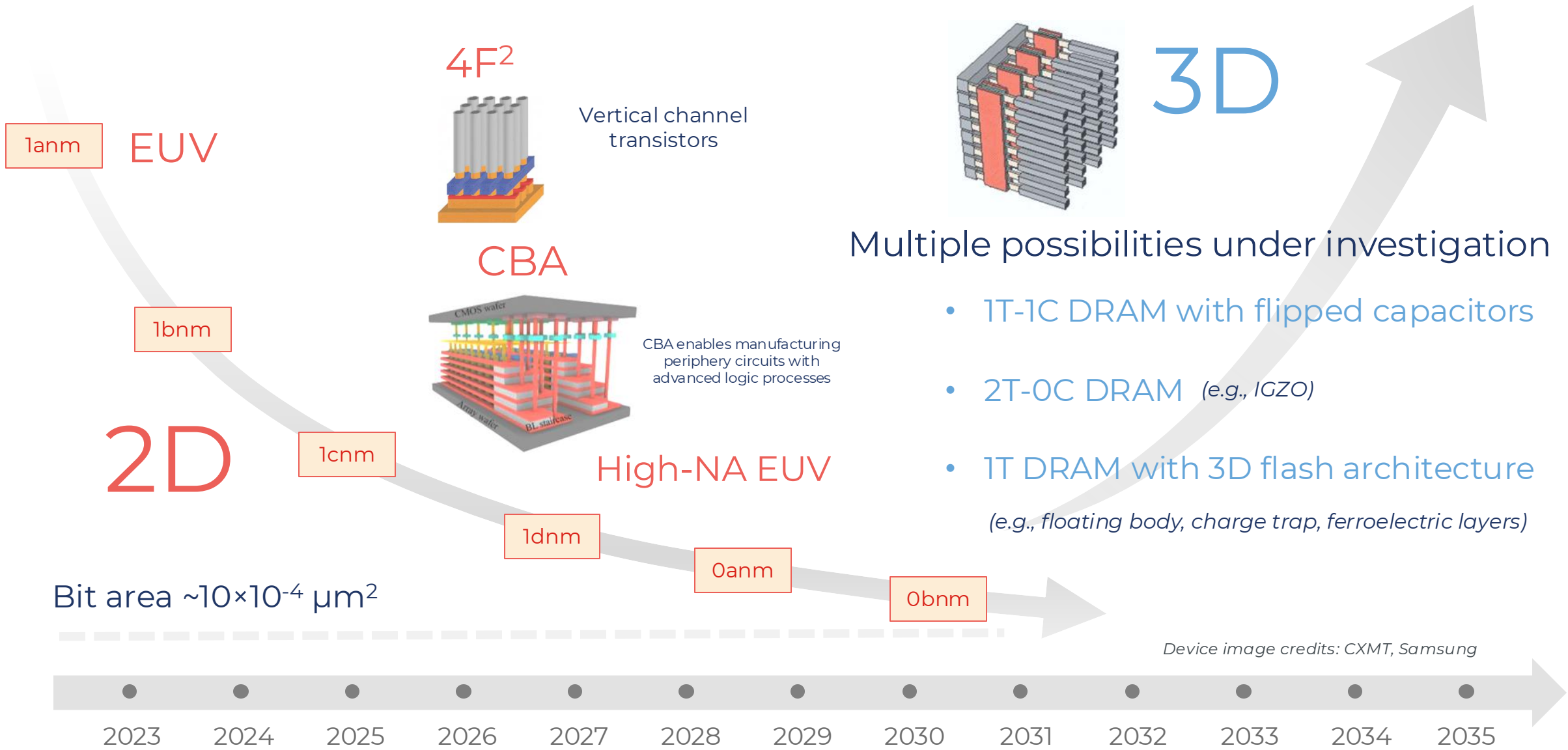
Bandwidth per core is decreasing



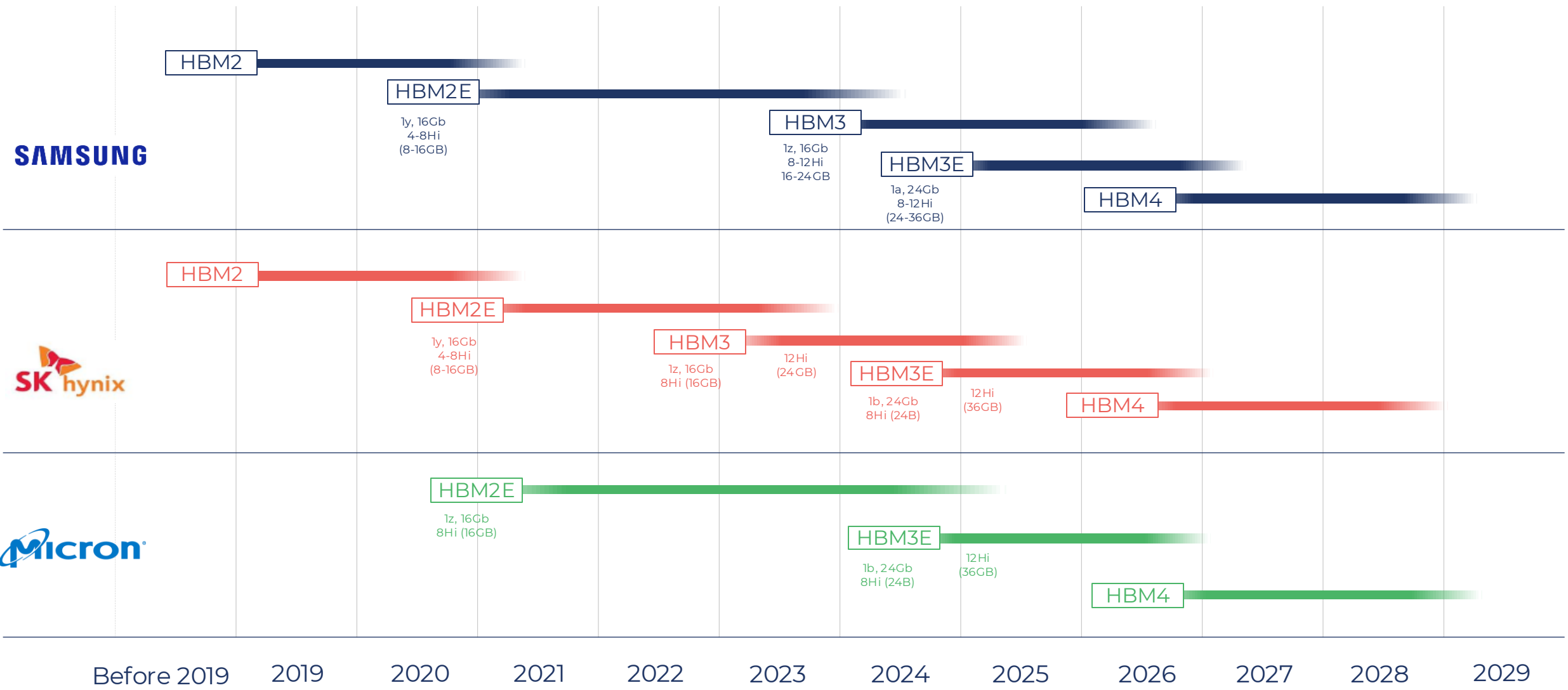
Memory content is growing but DRAM scaling has slowed down



NEXT-GENERATION DRAM – TECHNOLOGY ROADMAPS



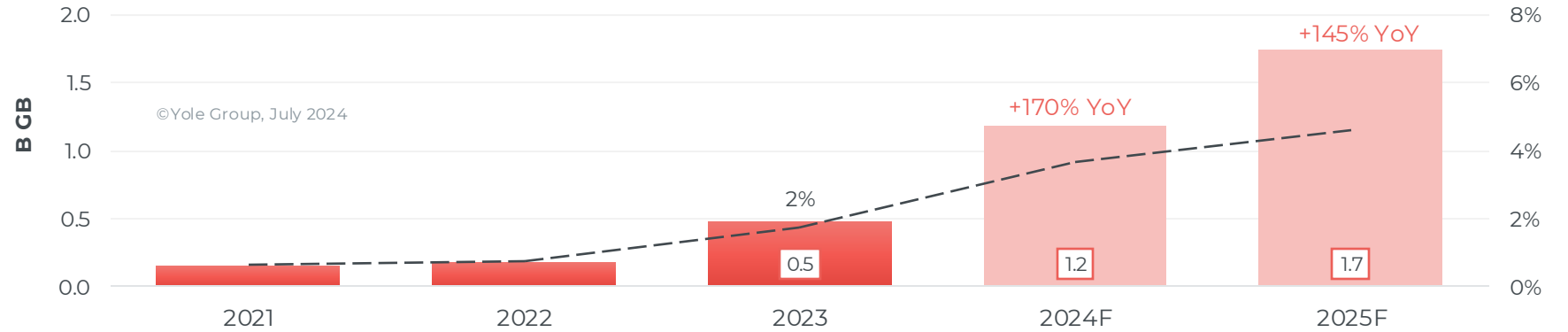
HIGH-BANDWIDTH MEMORY (HBM) – ROADMAPS



HIGH BANDWIDTH MEMORY (HBM) MARKET FORECAST

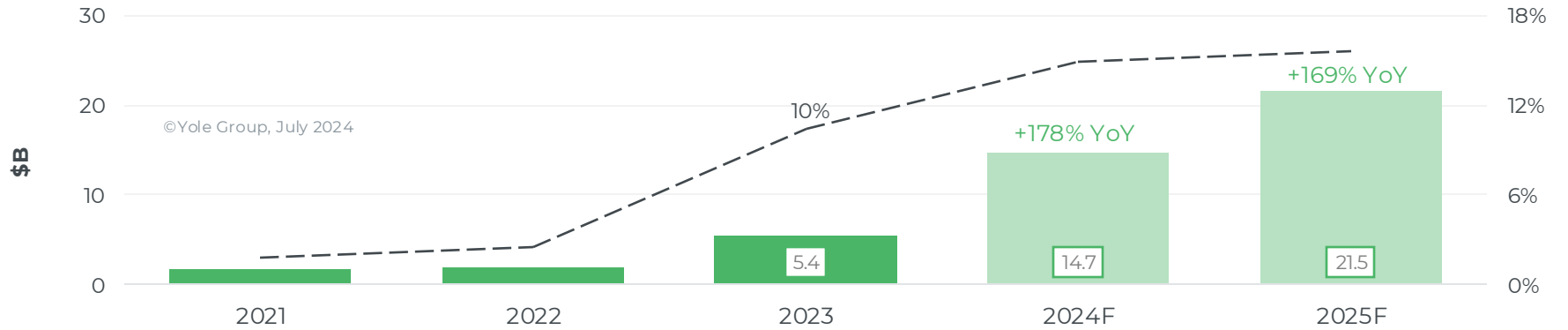
Bit shipments (B GB)

- HBM bit shipments (B GB)
- CAGR₂₃₋₂₉~48%
- HBM share of DRAM market (%)



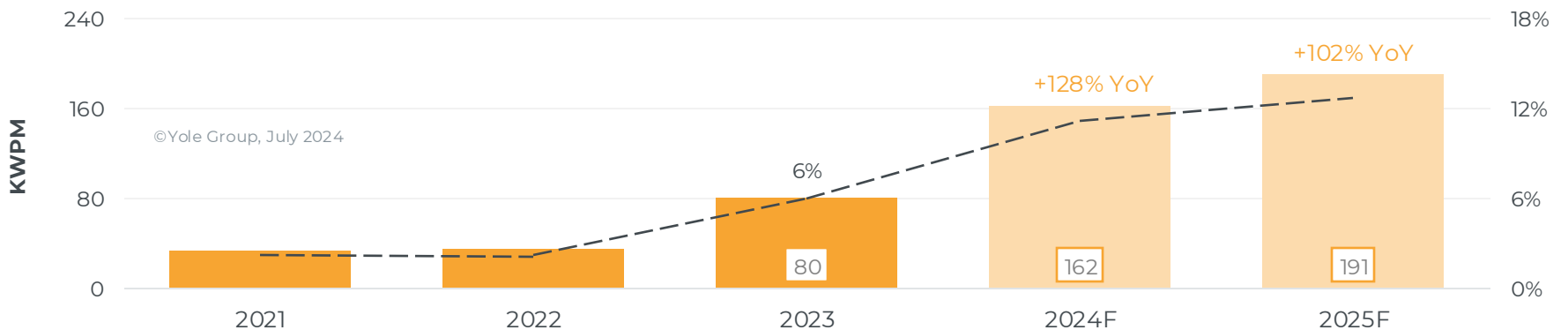
Revenue (\$B)

- HBM revenue (\$B)
- CAGR₂₃₋₂₉~41%
- HBM share of DRAM market (%)



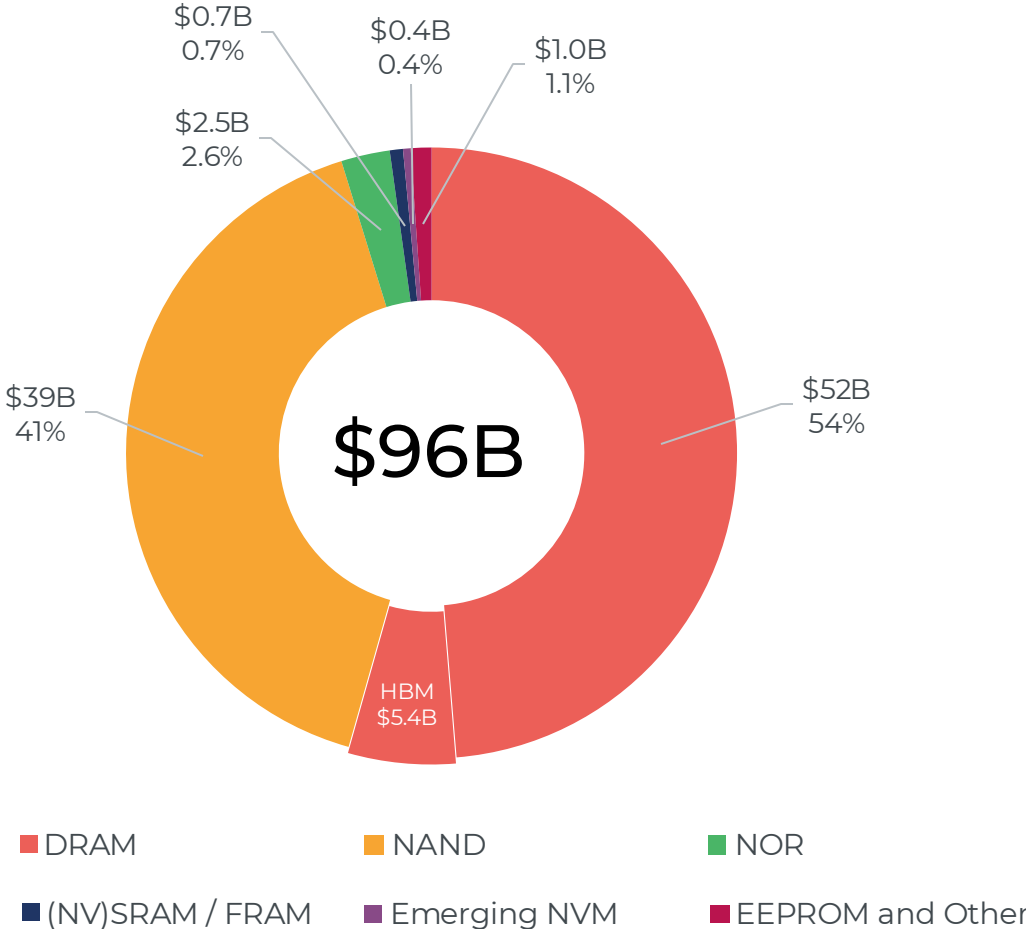
Wafer Production (K WPM)

- HBM wafer production (KWPM)
- CAGR₂₃₋₂₉~24%
- HBM share of DRAM market (%)

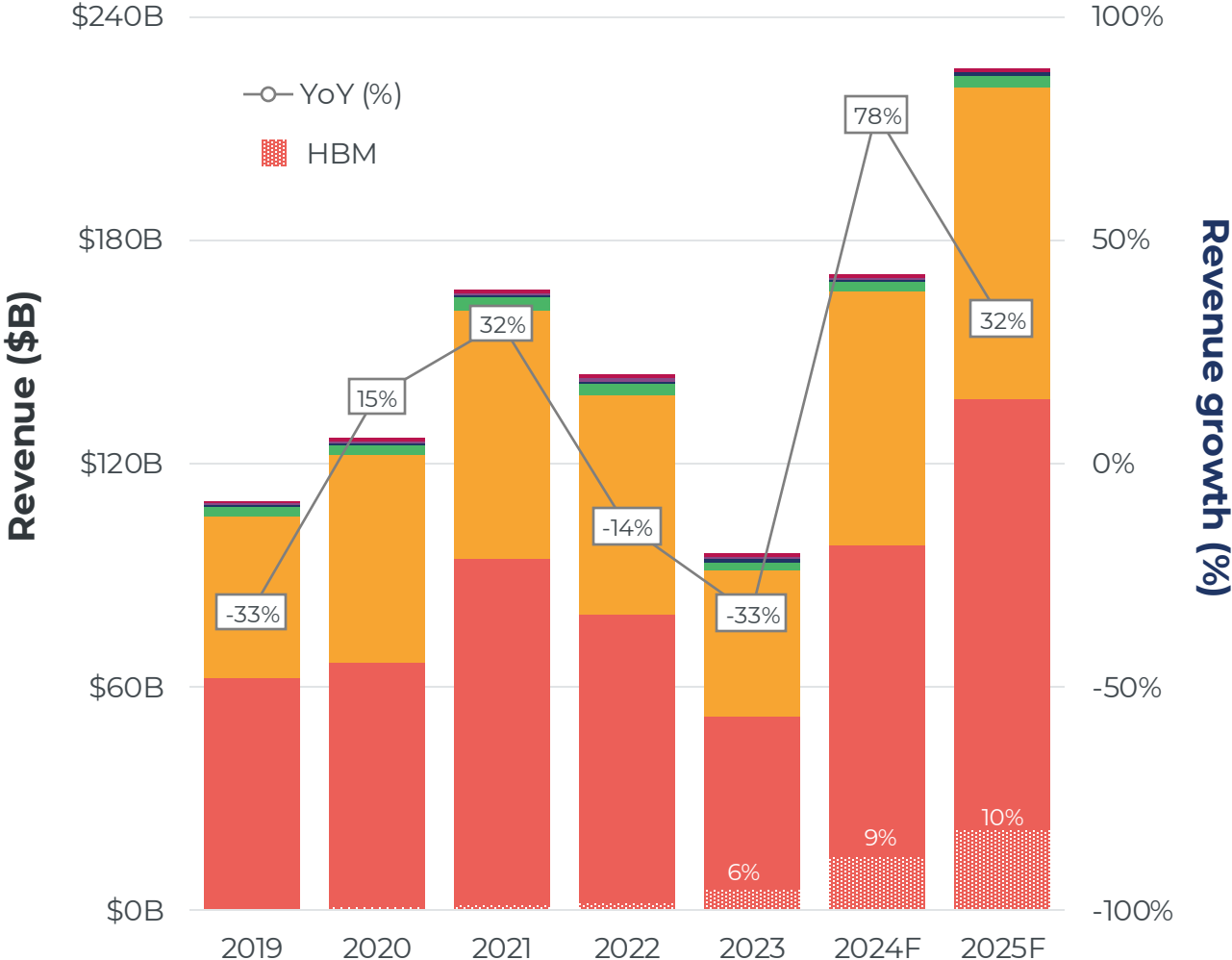


SEMICONDUCTOR MEMORY MARKET OVERVIEW

2023 Memory Market – Breakdown by Technology



Memory Market Evolution (2019 - 2025F)



Source: "Status of the Memory Industry 2024" by Yole Group

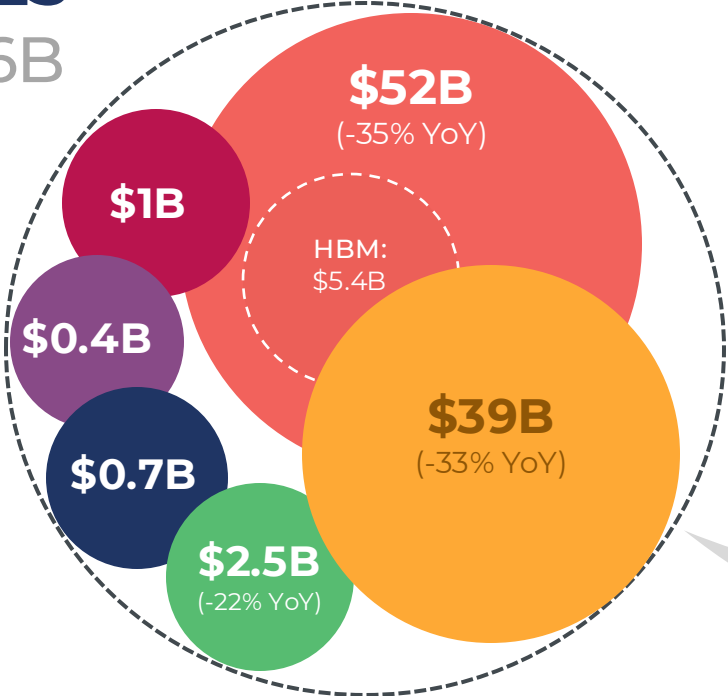
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SEMICONDUCTOR MEMORY MARKET FORECAST

Breakdown by technologies

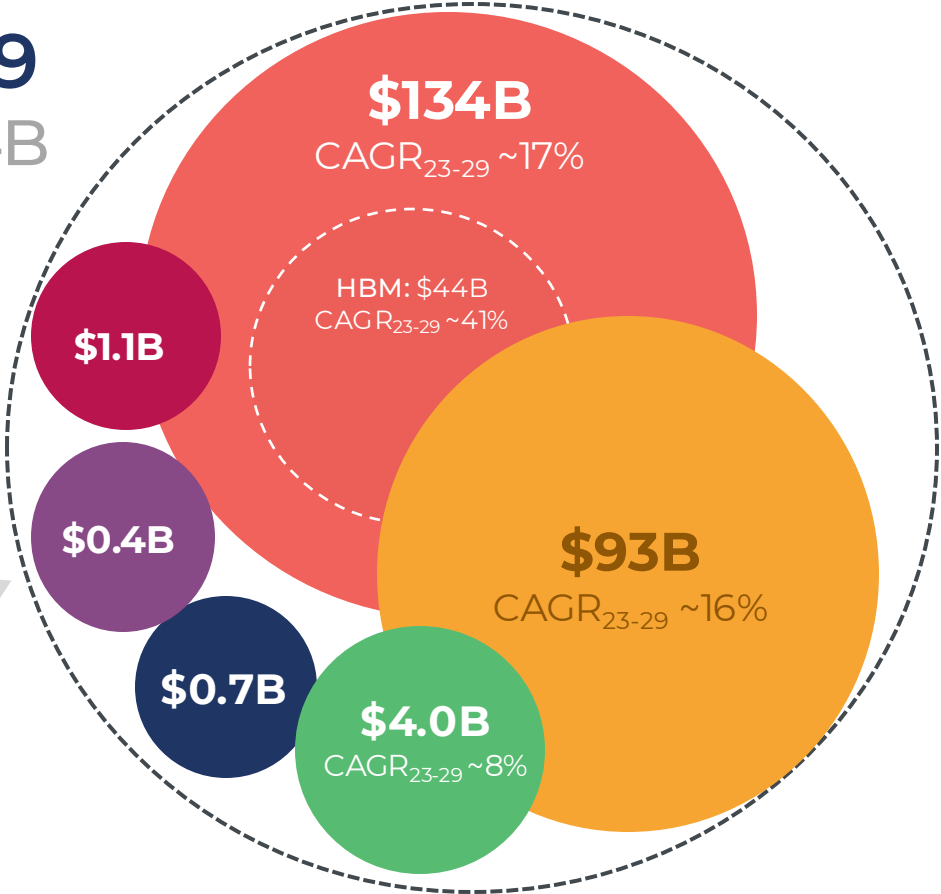
2023

\$96B



2029

\$234B



CAGR₂₃₋₂₉ ~16%

- DRAM
- NAND
- NOR
- (NV)SRAM / FRAM
- Emerging NVM
- EEPROM and other

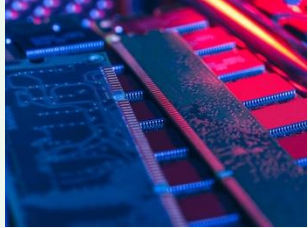


Source: "Status of the Memory Industry 2024" by Yole Group

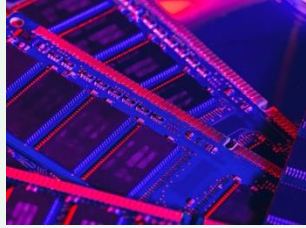
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YOLE GROUP MEMORY PRODUCTS

Market Monitors and Reports



[NAND Market Monitor](#)



[DRAM Market Monitor](#)



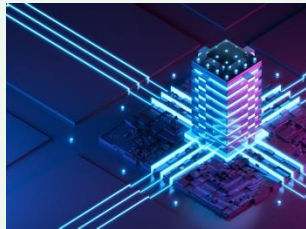
[Next-generation DRAM 2024 – Focus on HBM and 3D DRAM](#)



[Status of the Memory Industry 2024](#)



[Neuromorphic Computing, Memory and Sensing 2024](#)



[Emerging Non-Volatile Memory 2024](#)

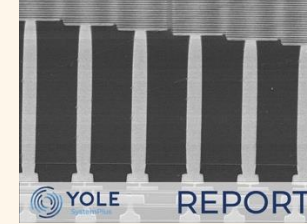


[Status of the Microcontroller Industry 2023](#)
2024 edition coming soon



[Memory-Processor Interface 2023 - Focus on Compute Express Link \(CXL\)](#)

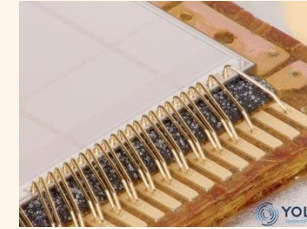
Technology, Process and Cost Reports



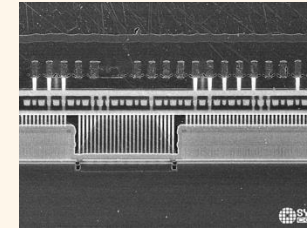
[YMTC 232-layer 3D NAND Memory](#)



[16Gb DDR5 DRAM Memory from Micron](#)



[Everspin Technologies Latest STT-MRAM in 28nm](#)



[LPDDR5 Memory Comparison](#)
LPDDR5X Memory Comparison coming soon

Thank you for your attention

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