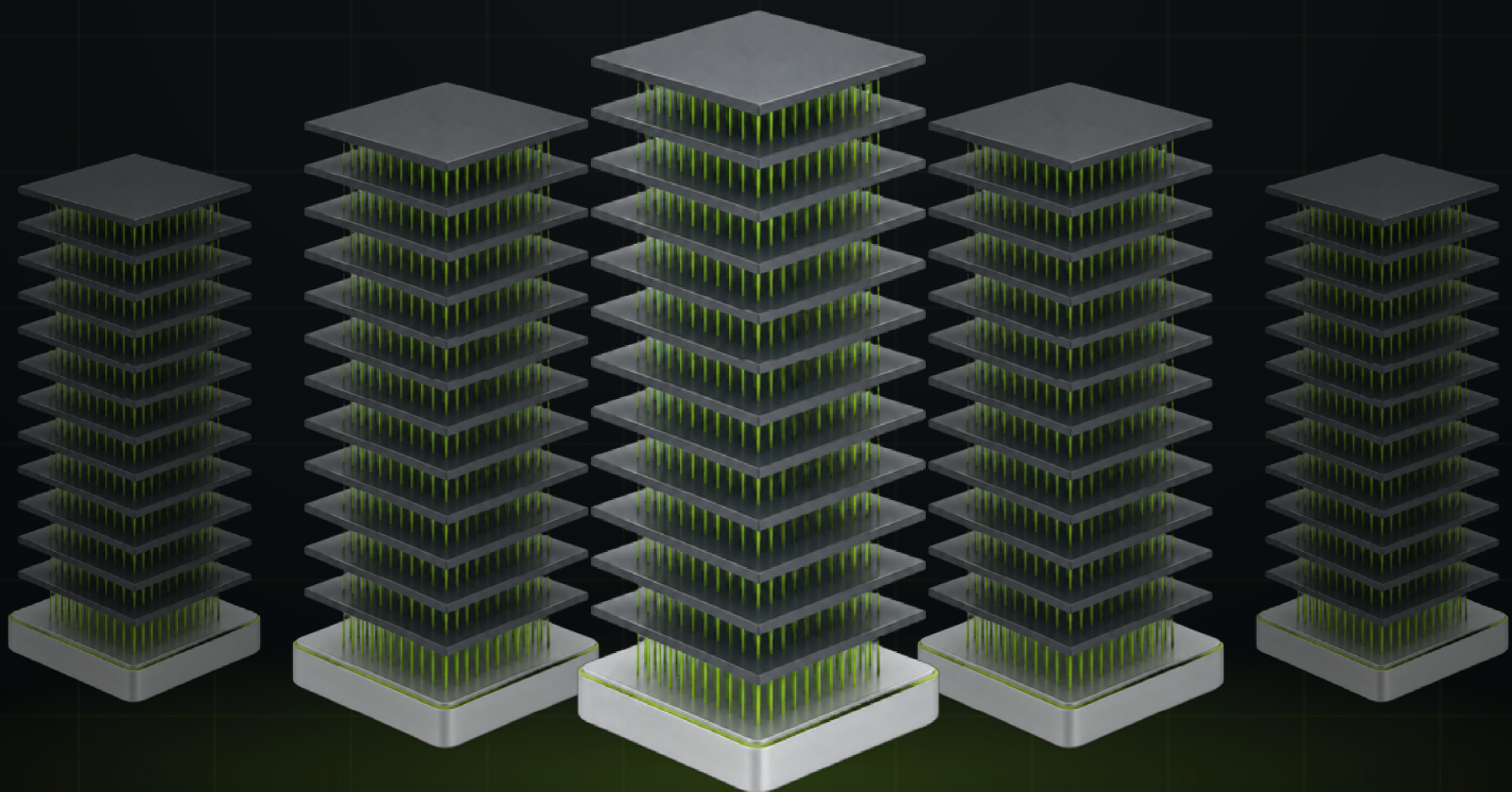


MEMORY MAP

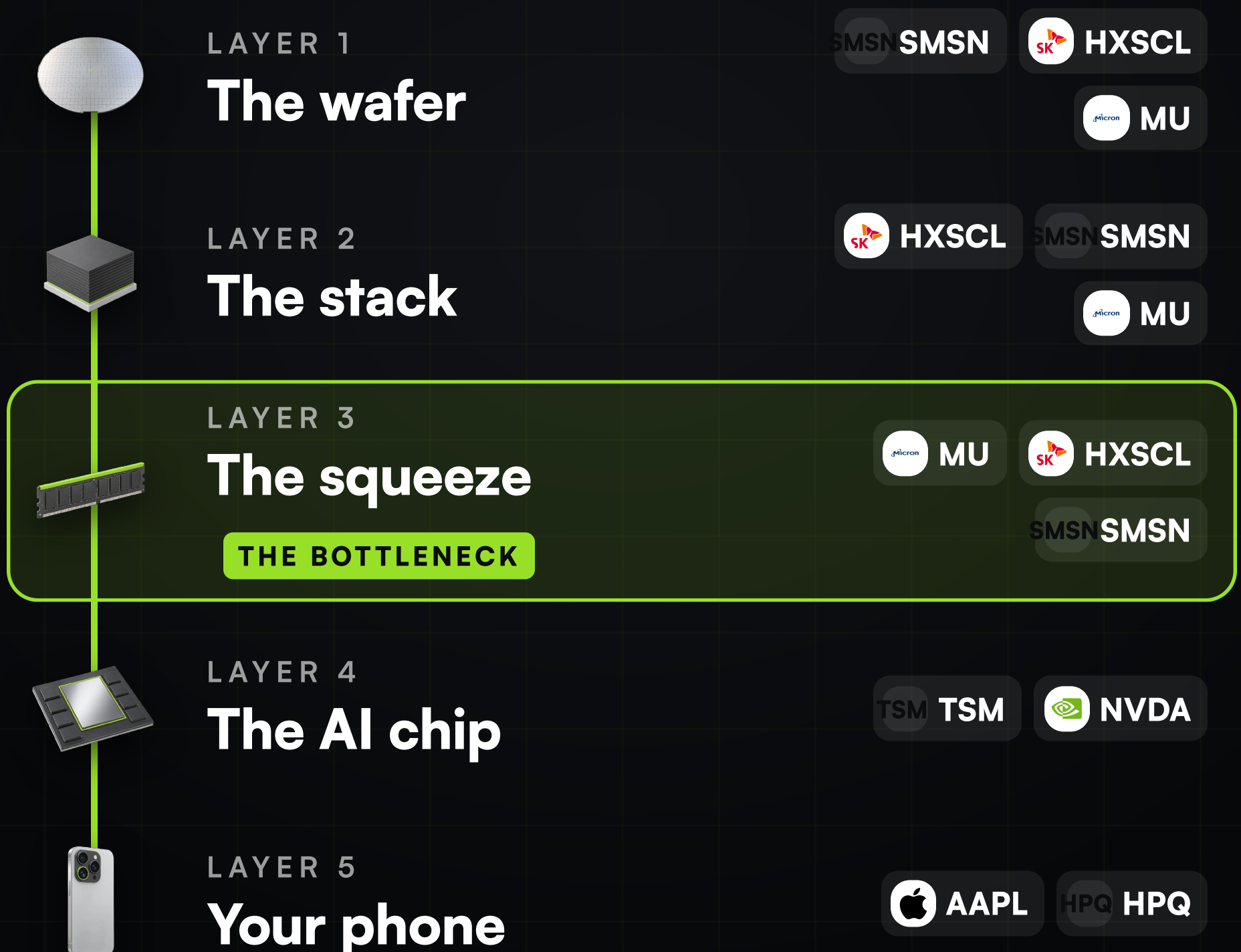
Five layers from the silicon wafer to your phone, and the companies in each one.



THE MAP

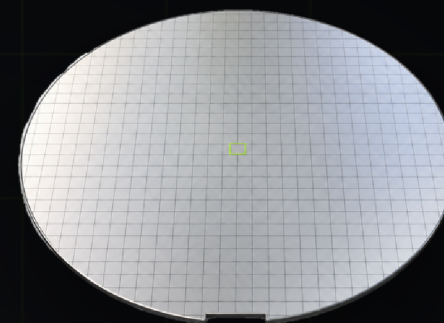
Follow the wafer

AI chips need a special kind of memory, and it is squeezing out the memory in everything else. Here is the whole chain on one page, and the bottleneck in the middle.



LAYER 1

The wafer



87.6%

of the world's DRAM sales go to just three companies (TrendForce, second quarter of 2026)

9.5%

CXMT (China, private), fourth in line

DRAM is the working memory in every phone, laptop and server. The world bought \$154.73B of it in a single quarter.

SMSN

Samsung Electronics SMSN

39.4% of DRAM sales. Guided to about \$80B of operating profit for the third quarter, its biggest ever. Listed in Seoul and London.



SK hynix HXSCL

24.9% of DRAM sales, at a 76% operating margin last quarter. Listed in Seoul.

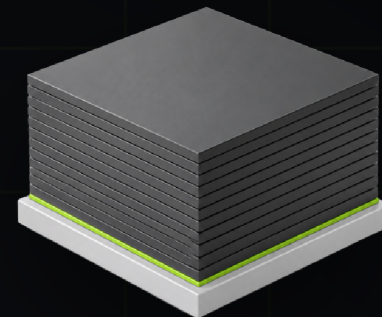


Micron MU

23.3% of DRAM sales. Revenue was \$54.23B last quarter, at a 86.8% gross margin.

LAYER 2

The stack



12^{high}

DRAM chips piled into one HBM stack on NVIDIA's newest AI chips

16^{high}

the most the newest HBM standard allows (JEDEC)

HBM, high bandwidth memory, wires every layer to the next with tens of thousands of tiny vertical connections, so data moves straight up and down the stack.

SK hynix leads HBM, then Samsung, then Micron (Counterpoint Research).



SK hynix **HXSCL**

The HBM leader.



Samsung Electronics **SMSN**

Second in HBM.

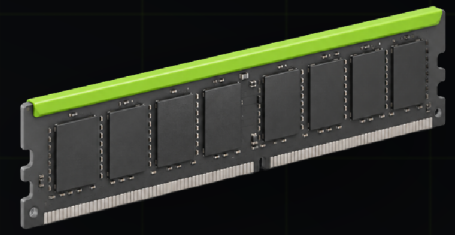


Micron **MU**

Third in HBM, and the only one of the three based in the US.



The squeeze



3x

the wafer HBM needs to hold the same data as regular memory (Micron)

22%

of DRAM wafers go to HBM by the end of 2026, for about 9% of the memory (TrendForce)

Every wafer that goes to AI doesn't go to your phone. Regular DRAM contract prices rose 93 to 98% in the first quarter of 2026 alone, and TrendForce sees up to 15% more in the fourth.

Racing to build more: Micron in Idaho and New York, SK hynix at Cheongju and Yongin, Samsung at Pyeongtaek.



Micron MU

Its first new Idaho fab is due to start making memory in 2027.



SK hynix HXSCL

Building new fabs at Cheongju and Yongin, Korea.

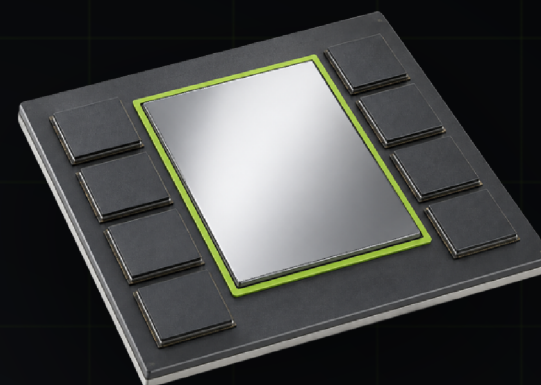


Samsung Electronics SMSN

Expanding at Pyeongtaek, Korea.

LAYER 4

The AI chip



288_{GB}

of HBM on one NVIDIA
Blackwell Ultra chip, in 8 stacks

12_{GB}

of memory in last year's top
iPhone

TSMC packages the chip and its memory together (CoWoS), and says that capacity is tight.

Buyers lock in supply: SK hynix has long-term agreements with about 10 customers. NVIDIA's CFO said memory price rises exceeded its expectations.



TSMC TSM

Makes NVIDIA's chips and packs them together with their HBM stacks.



NVIDIA NVDA

Its newest AI chips carry 288 GB of HBM each.

LAYER 5

Your phone



34%

of the cost of building an iPhone Pro is now memory
(TrendForce)

10%

a year earlier

IDC expects world smartphone shipments to fall 16.7% in 2026.

It reaches PCs too: HP says memory and storage are now about 35% of its PC parts cost, and Raspberry Pi raised the price of its smallest-memory boards by \$12.50.



Apple AAPL

The new iPhone Pro starts at \$1,199, \$100 more than last year's. Nikkei reports Apple cut some component orders.



HP HPQ

Memory and storage are about 35% of its PC parts cost.

RISK

The honest part

Memory runs in booms and busts. In fiscal 2023, Micron's revenue fell from \$30.76B to \$15.54B and it lost \$5.83B:



Micron revenue

-49.5%

FISCAL 2023

DRAM average price

-20%

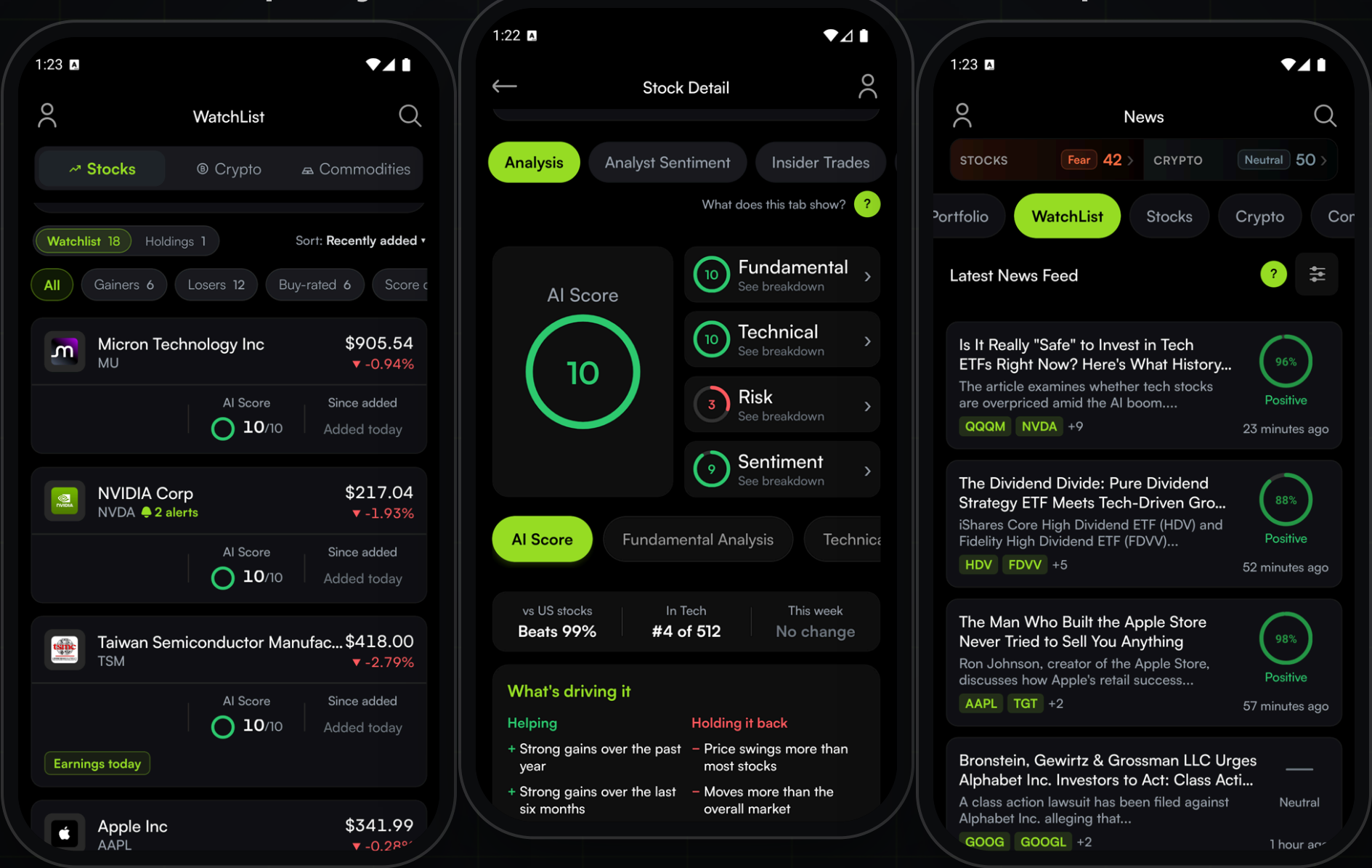
ONE QUARTER, EARLY
2023

And new factories are coming: Micron's first new Idaho fab starts making memory in 2027. High prices are what bring new supply.



How I keep track

I keep every layer on one AssetWisp watchlist, with each company's AI Score and news in one place.



Watchlist

AI Score

News

App Store

Google Play

assetwisp.com

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Where the numbers come from

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Next lesson: two wars, one bottleneck, the diesel crunch.

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