

# FutureHorizons



The Global Semiconductor Industry Analysts

## FH MONDAY

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### GlobalFoundries Forfeit 7nm Manufacturing

SAN JOSE, Calif. – The race to drive semiconductor technology to the bleeding edge has narrowed to three companies. Globalfoundries suspended work on a 7nm node. It will lay off less than 5% of its workforce and make its ASIC group a wholly-owned subsidiary so it can partner with one of the remaining 7nm foundries.

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### Intel Not Aiming for Early EUV Leadership

TAIPEI — The few chipmakers that lead technology development are betting that by next year extreme ultraviolet lithography (EUV) will take transistor densities on semiconductors another step closer to their physical limits.

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### Micron Expands U.S. DRAM Manufacturing

SAN FRANCISCO — U.S. memory chip maker Micron Technology announced plans to spend \$3 billion over the next decade to increase memory production at its 300mm wafer fab in Manassas, Va. While providing few details about the expansion, Micron said it would create 1,100 new jobs by 2030.

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## TALK TO US



### Huawei Outselling iPhone

Chinese electronics giant Huawei Technologies sold more handsets worldwide than Apple in the second quarter, marking the first quarter since the early days of the original iPhone that Apple hasn't been among the No. 2 suppliers,

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### Apple Goes Vertical & Why It Matters

As part of EE Times' look at Apple's march to becoming the first trillion-dollar company, I will look at their "modern" semiconductor work. To do this, I first need to think about the iPhone. It is the defining product on the road to the trillion-dollar milestone

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## **GlobalFoundries Forfeit 7nm Manufacturing**

The race to drive semiconductor technology to the bleeding edge has narrowed to three companies.

Globalfoundries suspended work on a 7nm node. It will lay off less than 5% of its workforce and make its ASIC group a wholly-owned subsidiary so it can partner with one of the remaining 7nm foundries.

It would have cost GF \$2-4 billion to ramp up the 40-50,000 wafers/month capacity needed to have a chance of making a return on the node. "The financial investment didn't make as much sense as doing something else," said Tom Caulfield, the former general manager of Fab 8 named chief executive of GF in March.

In an interview in May, Caulfield said GF's owners the Mubadala Investment Company in the United Arab Emirates, wanted improved financial performance. In June, the company announced a 5% layoff without cutting any products, affecting about 900 of its 18,000 employees.

## **Intel Not Aiming for Early EUV Leadership**

TAIPEI — The few chipmakers that lead technology development are betting that by next year extreme ultraviolet lithography (EUV) will take transistor densities on semiconductors another step closer to their physical limits.

Intel, once the world's biggest chipmaker, appears to have given up efforts to lead the pack in EUV. The company was among the first to start EUV development in the late 1990s.

Intel will not be inserting EUV anytime soon, according to Mark Li, an electronics engineer and analyst with Bernstein. The company is having difficulties ramping 10nm, and EUV in Intel's 7nm, expected several years from now, remains an open question, he adds.

## **Micron Expands U.S. DRAM Manufacturing**

SAN FRANCISCO — U.S. memory chip maker Micron Technology announced plans to spend \$3 billion over the next decade to increase memory production at its 300mm wafer fab in Manassas, Va.

While providing few details about the expansion, Micron said it would create 1,100 new jobs by 2030. The company said the investment is part of its long-term strategy to invest about 30% of its revenue in capital expenditures.

Micron builds DRAM chips at the Manassas facility, which was originally built in the late 1990s as a joint venture between IBM and Toshiba called Dominion Semiconductor. Micron acquired the fab in 2001.

The expansion announcement comes amid a prolonged boom in semiconductor memory that has persisted for two years. While the market for NAND flash chips is cooling off amid increased production capacity and higher yields of 3D NAND chips, analysts forecast that the DRAM market will grow by more than 30% this year after growing by 76% in 2017.

## **Huawei Outselling iPhone**

SAN FRANCISCO — Chinese electronics giant Huawei Technologies sold more handsets worldwide than Apple in the second quarter, marking the first quarter since the early days of the original iPhone that Apple hasn't been among the No. 2 suppliers.

Gartner (Stamford, Conn.) said a combination of innovative new handsets from Huawei and a rapid slowdown in demand for the flagship iPhone X enabled Huawei to move into second place in smartphone sales for the first time, relegating Apple to the No. 3 position.

"Demand for the iPhone X has started to slow down much earlier than when other new models were introduced,"

## **Apple Goes Vertical & Why It Matters**

As part of EE Times' look at Apple's march to becoming the first trillion-dollar company, I will look at their "modern" semiconductor work.

To do this, I first need to think about the iPhone. It is the defining product on the road to the trillion-dollar milestone. When the iPhone was unveiled on Jan. 9, 2007, it was a departure from the existing phone paradigm.

Steve Jobs described it as "a widescreen iPod with touch controls, a revolutionary mobile phone, and a breakthrough internet communicator." That day, he also introduced a new operating system: iPhoneOS, aka iOS.