# FutureHorizons

The Global Semiconductor Industry Analysts

## **FH MONDAY**

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Affiliates in Europe, India, Israel, Japan, Russian, San Jose California, USA

### **Chip Equipment Becomes Trade War's Latest Battlefield**

The U.S. has issued a new set of trade rules that hamper American-made semiconductor equipment sales to China. As a result, telecom and networking giant Huawei Technologies reportedly is trying to persuade Samsung and TSMC to build an advanced production line that does not use U.S. equipment.

Under the latest trade regulation, fabless semiconductor companies are worried they will be the next target of sanctions by the United States.

TSMC should strongly support non-U.S. semiconductor material and equipment suppliers, according to industry analyst Lu Xingzhi. However, TSMC – which announced it would build a fab in the U.S. – seems hesitant to act on Huawei's request.

#### **Storage Optimization Moves Up the Stack**

TORONTO — As NVMe continues to mature and help storage systems get the most from flash-based SSDs, memory vendors are looking a little higher up the stack for more optimization gains.

Recognizing that existing storage engines are designed for the spinning disk era, Micron Technology recently unveiled its heterogeneous-memory storage engine (HSE) aimed at not only getting more from SSDs but also other storage-class memory (SCM), including 3D XPoint. The company's open source HSE will enable developers using all-flash infrastructure to customize or enhance code for its unique use cases and take advantage of the performance and reduced latency of next-generation nonvolatile media, said Steve Moyer, vice president of storage software engineering at Micron.

#### **GlobalFoundries Abandons Chengdu Wafer Fab**

SHENZHEN, China — GlobalFoundries has finally given up on its wafer fab planned in Chengdu. The company filed official notices of closure, along with documents certifying the last 74 employees will be offered severance pay.

The fab was never brought online, but GF held on to the possibility of opening it. As recently as half a year ago, when asked if GlobalFoundries remained committed to the plant, GF executive vice president of finance Tim Breen insisted that "the Chengdu factory will not be sold, this is just a market rumor."

In 2016, GF and Chongqing municipality signed a memorandum formed a joint venture to set up a local plant. Shortly afterward, GF reported a large financial loss. The project was put on hold, and then collapsed entirely. After the project fell through, Chongqing's neighboring city Chengdu moved in to cut a deal with GlobalFoundries in late-2016.

#### 'Cloud Computing Is Changing Everything About Electronic Design

Cloud computing is changing everything about electronic design, according to Jeff Bier, founder of the Edge AI and Vision Alliance. That's because more and more problems confronting designers are getting solved in the cloud.

As part of our regularly scheduled calls with EDN's Editorial Advisory Board, we asked Bier what topics today's electronics design engineers need more information on. Bier highlighted the cloud as the number one force driving change in engineering departments around the world. However, you could be forgiven for asking whether cloud computing has anything to do with electronic design at all.

[The cloud] has everything to do with almost every aspect of electronic design," Bier said, adamant that it is drastically changing the way engineers work.

#### AI Drives Data Centers to the Edge

Data centers are expanding to the network edge to meet demand by artificial intelligence and other applications requiring fast response times not available from traditional data center architectures.

The problem with traditional architectures is their centralized framework. Data often travels hundreds of miles from the edge to computers, then back again. That's fine when you're dealing with email, Google, Facebook and other applications delivered via the cloud. Human brains are slow computers, unable to register the lag time between, say, clicking on an email message in a browser and the message opening.

But AI and other emerging applications — Internet of things (IoT), cloud-based gaming, virtual reality — require much faster network response times, otherwise known as "latency." That means data center processing must move to the network edge