



Flash Memory Summit hails next-gen storage

August 11, 2015 – SANTA CLARA, CA - The 2015 Flash Memory Summit Keynotes presented some dramatic product and initiative announcements as well as insights on how solid-state memory and storage is changing the way that companies do business, where data is stored and the way that computers are designed. Tom Coughlin is the chair of the Flash Memory Summit (FMS).

Keynotes by Diablo Technologies, Kaminario, Micron, NetApp, Oracle, PMC , Samsung, SanDisk, Seagate, SK Hynix, Tegile Systems, Toshiba, and QLogic pointed out the role that higher speed non-volatile memory is having on the processing of database information and transactional activities and how this is helping to enable the big data revolution that is providing real-time analytics and decision making and creating more responsive search and buying experiences.

A keynote talk by Hideo Inoue, the general manager of Toyota's Advanced Vehicle Research Project, pointed out how solid-state storage in automobiles will be a key enabler of machine learning needed to implement reliable drive assist capabilities and autonomous vehicles. At the end of his talk, Inoue said that flash memory for automobiles must meet several new requirements, including lasting hundreds of thousands of write cycles and a useful life of at least 20 years.

Fast memory enables fast responses. As a result of faster information movement and access, data can be processed faster and those results used to make decisions more quickly. With developments by several companies to put non-volatile solid-state storage on the computer memory bus and even within processors we will have faster and more robust computer memory. When this is combined with storage devices with their own processors, in-memory processing will enable a whole new level of speed in processing data.

Flash memory doesn't live alone in the storage world. Wider use of flash memory for various applications, including primary storage involves decreasing prices for flash memory capacity. The movement to 3-D flash memory will help lower these costs and enable wider use of flash memory by creating a clear path for denser flash memory products on single chips for several more years.

Before the FMS, Toshiba and SanDisk announced that they had made samples of 48 layer 3-D flash memory that would be available in volume in the second half of 2016.

Samsung, during its keynote, made a number of announcements including a third generation of its V-NAND 3D Flash with 48 memory layers. This technology would be available in volume in 2015 with initial products using this new generation of 3-D flash available at the beginning of 2016.

In addition, the company announced new solid-state drives (SSDs) including the largest (up to 16 TB), the fastest (1 M IOPS) to date, as well as a three bit per cell serial attached SCSI (SAS) drive, all for enterprise SSD applications, and new intelligence for SSD storage that enables in-storage computing. The company also announced a couple of storage system reference designs to stimulate the development of flash-based storage systems.

SK Hynix also presented on its 3-D NAND products and Micron introduced its *solid* marketing campaign to try and get usage of flash memory capacity above its current 5 percent mark in enterprise applications. Besides bringing in Geoffrey Moore to talk about how Micron can get flash memory to "cross the chasm" of enterprise applications, the company hosted a "Flash" dance at the end of the presentation.

Flash memory has enabled big data analytics and in-memory database processing. With the movement to 3-D flash memory, this technology will assume an increasing presence in data centers and client devices. The result will be bigger storage in client devices as well as increasing sophistication in real-time data processing, faster responses to on-line searches and buying and even machine learning for autonomous vehicles.

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