NAND Flash Memory: enabler of mobile and cloud computing

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Abstract:

Elie Wiesel once said: "Without memory, there is no culture. Without memory, there would be no civilization, no society, no future". It's safe to say, without NAND Flash memory, there would be no digital camera, no iPod nano, no Smartphones, no ultra-thin laptop, and no pervasive high speed cloud computing. In this talk, we shall review how the non-volatile memory technologies have evolved throughout human history and in particular the past 25 years how NAND flash has grown to a US$30B business, enabling one industry after another. The talk will also review how after 25 years of physical and logical scaling, the 2D NAND has come to a nearing the end, and the possible path going forward with z-direction scaling, and the many challenges and opportunities ahead.

Biography:

Jian graduated from UC Berkeley with the PhD in EECS in 1992. After 3+ years at AMD, he joined SanDisk in early 1996. He has worked on a variety of technologies and in different roles, including foundry work with triple-poly memory cell, 10 generations of NAND flash since 1999, and 3 years working in SanDisk's first 300mm fab while living in Japan. As VP of memory systems, he ran the memory system group for 5 years, responsible for the architecture design of various products such as USB, CF, uSD, eMMC and some early SSD products. He also led business development and project exploring interactions of memory, system, host and OS's. In his current role, he is responsible for overall 3D NAND development at SanDisk.