



FLASH MEMORY SUMMIT 2011



Q3, 2011

Adoption of Caching & Hybrid Solutions



Market Overview

- 2009 – Flash production reached parity with all other existing solid state memories in terms of bites.
- 2010 – Overall flash production was more than all solid state memory product ever since launch.
- Flash memory is the most cost-effective solid state storage available.
- Flash memory excels with respect to access latencies and available transfer rates.

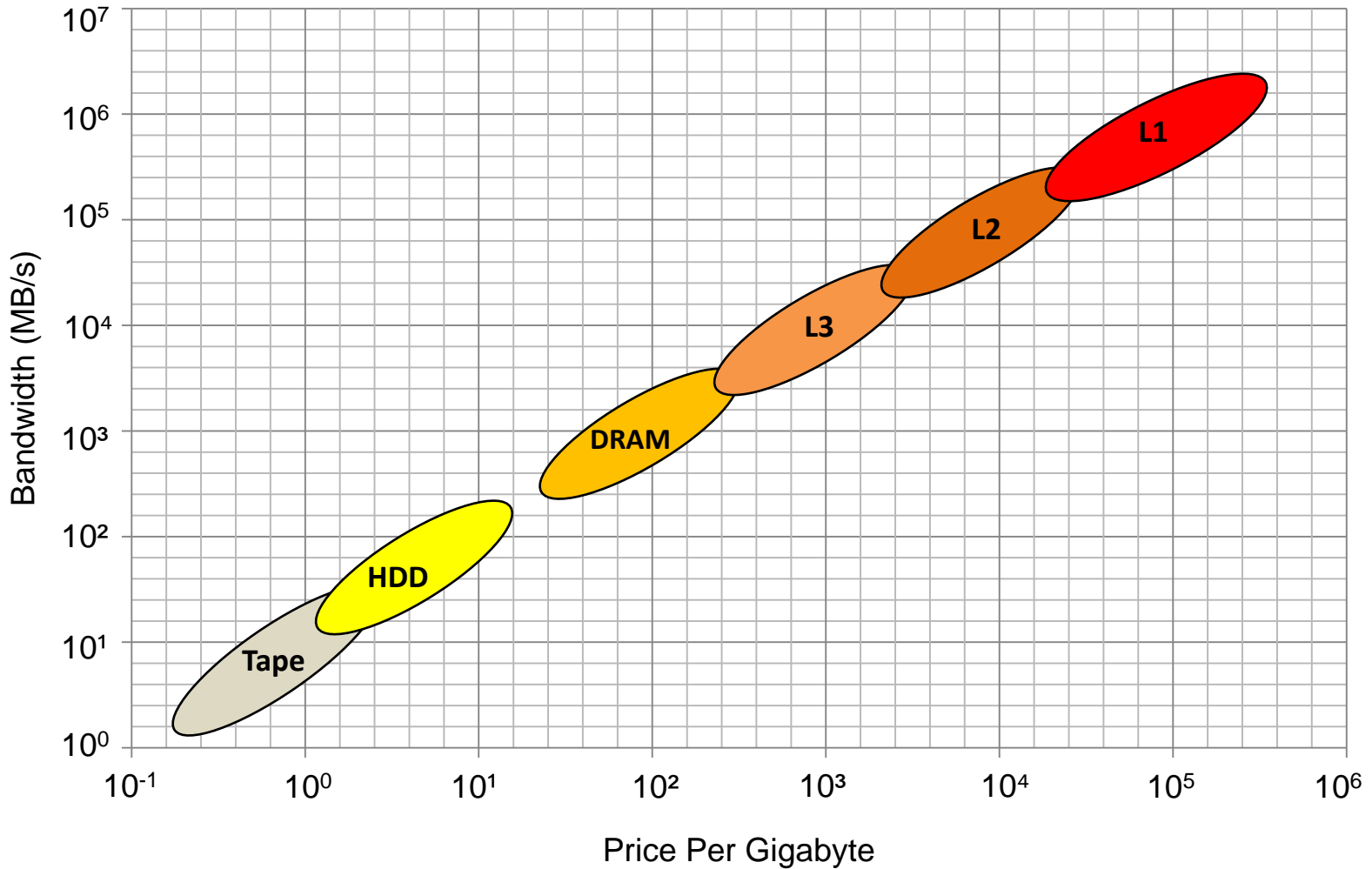


Hybrid Solutions

- High resolution content drive demand for high capacity
- Non-volatile memory enabling long term data storage
- NAND filling performance cap between HDD and DRAM
- Growing demand in both consumer and enterprise segment
- Fast-growing adoption in desktop and mobile segment in the coming years

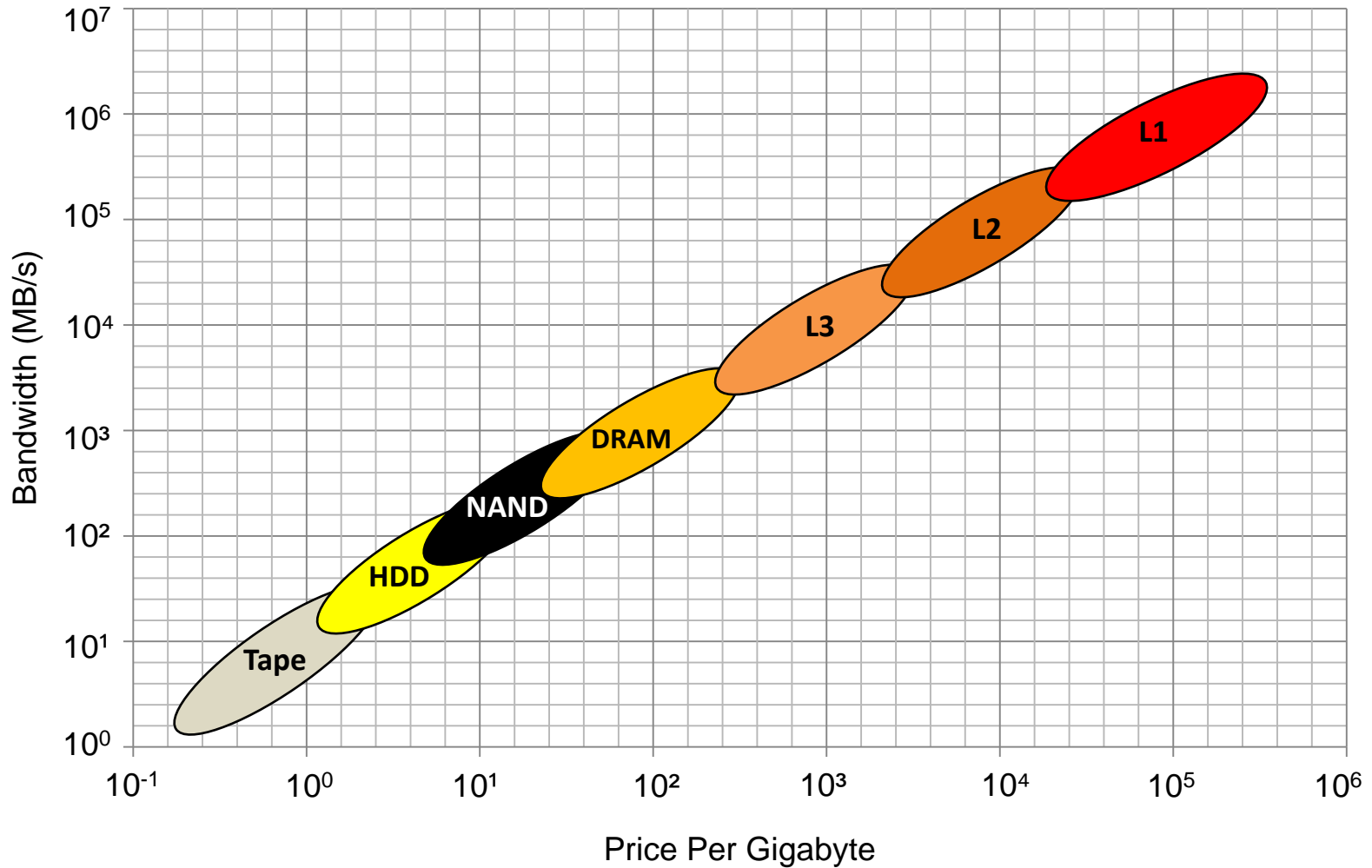
A Gap in the Memory/Storage Hierarchy

Source: SNIA



NAND Flash Memory Can Fill the Gap

Source: SNIA



Hybrid Solutions

1.) Hybrid All-In-One

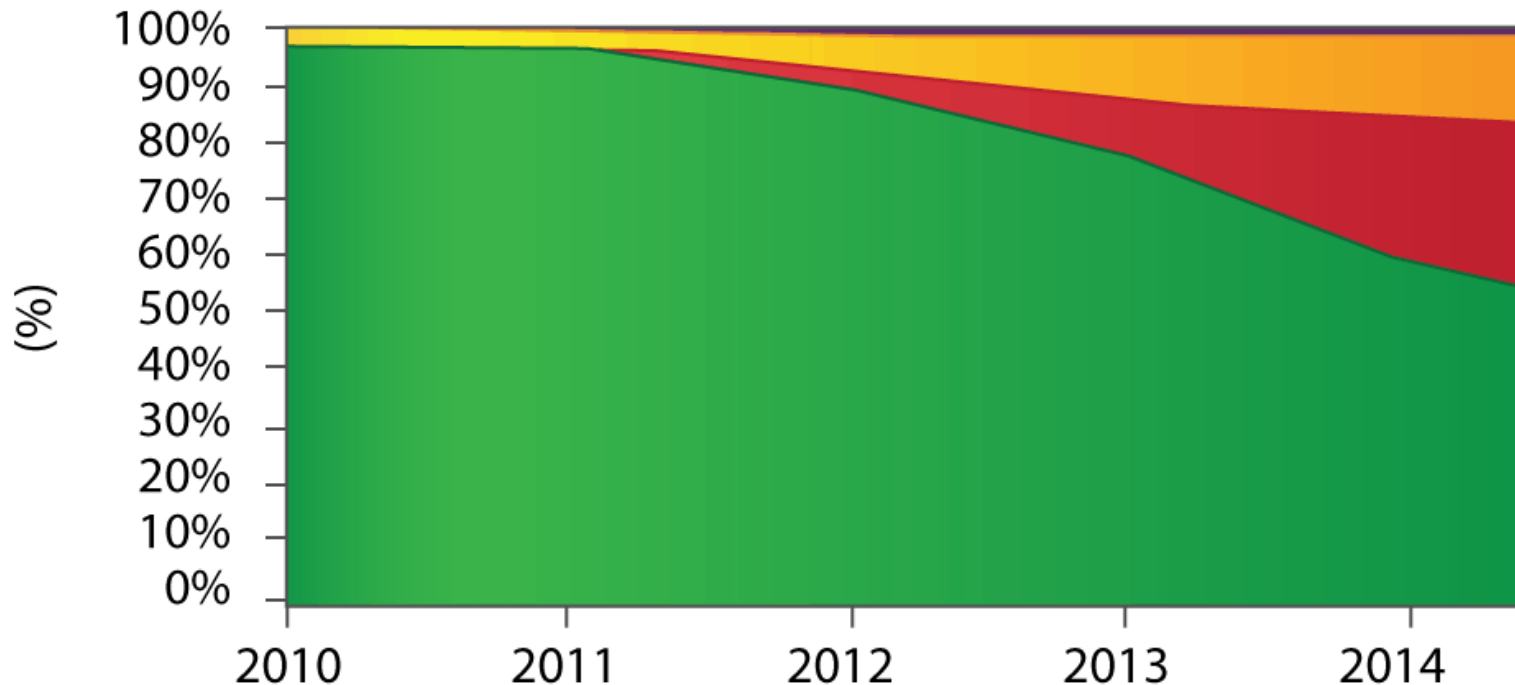


2.) Onboard Solutions



Worldwide Portable PC Shipments

Share by Storage Device Solution, 2010 to 2015

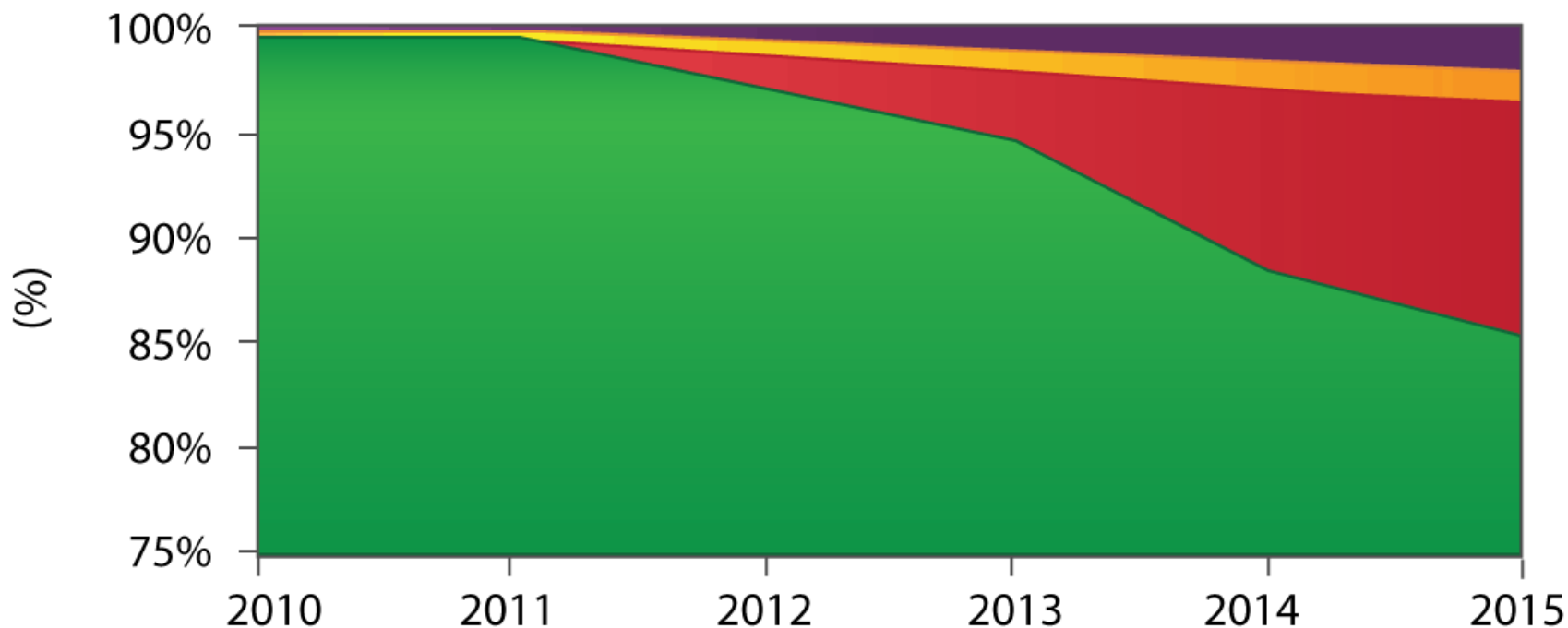


- Dual Storage Solution (SSD +HDD)
- SSD
- Hybrid HDD
- HDD

Source: IDC

Worldwide Desktop PC Shipments

Share by Storage Device Solution, 2010 to 2015



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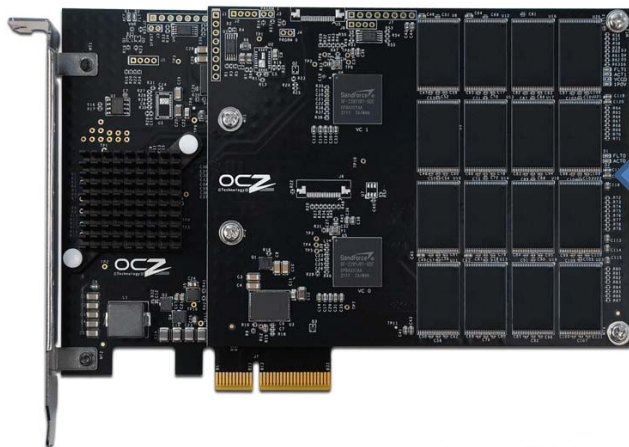
Source: IDC

Introducing the RevoDrive Hybrid

SSD Performance

HDD Capacity

MEETS





Challenges for Servers

- I/O performance of HDDs short of the processor power
- Servers typically running at 3-4GHz and multiple socket configurations
- Mismatch between processing and I/O power

Previous Countermeasures:

- Increase system memory
- Short-stroking HDDs
- Adding more HDDs for increased I/O performance

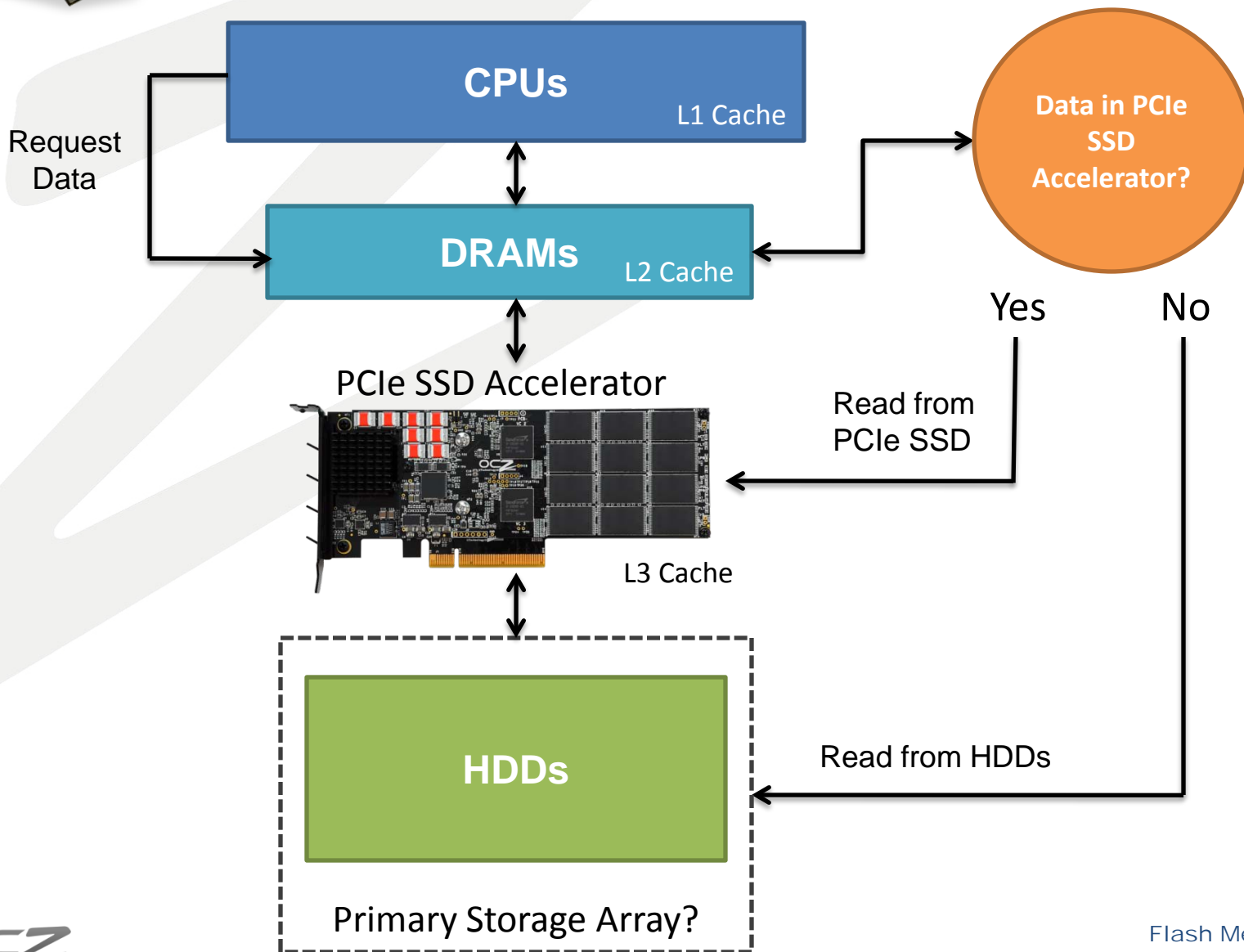


The SSD Solution

Adding solid state drives as a caching solutions will result in:

- The existing HDDs are no longer need to be short-stroked
- Optimized read and write performance

PCI-Express





SSD vs DRAM-Based Storage

- NAND flash has a much lower cost per bit than DRAM
- NAND flash is non-volatile
- NAND flash uses much less power than DRAM
- Reducing total cost of ownership



OCZ Caching Solutions

- 2.5" Synapse Cache SSD bundled with Dataplex
- mSATA – MO-300
- Slim SATA – MO-297
- PCIe Solutions





THANK YOU

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