STORAGE INDUSTRY SUMMIT

Convergence of Storage and Memory Developing the Needed Ecosystem

JANUARY 20, 2016, SAN JOSE, CA

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Things Are Happening in Solid State Storage!

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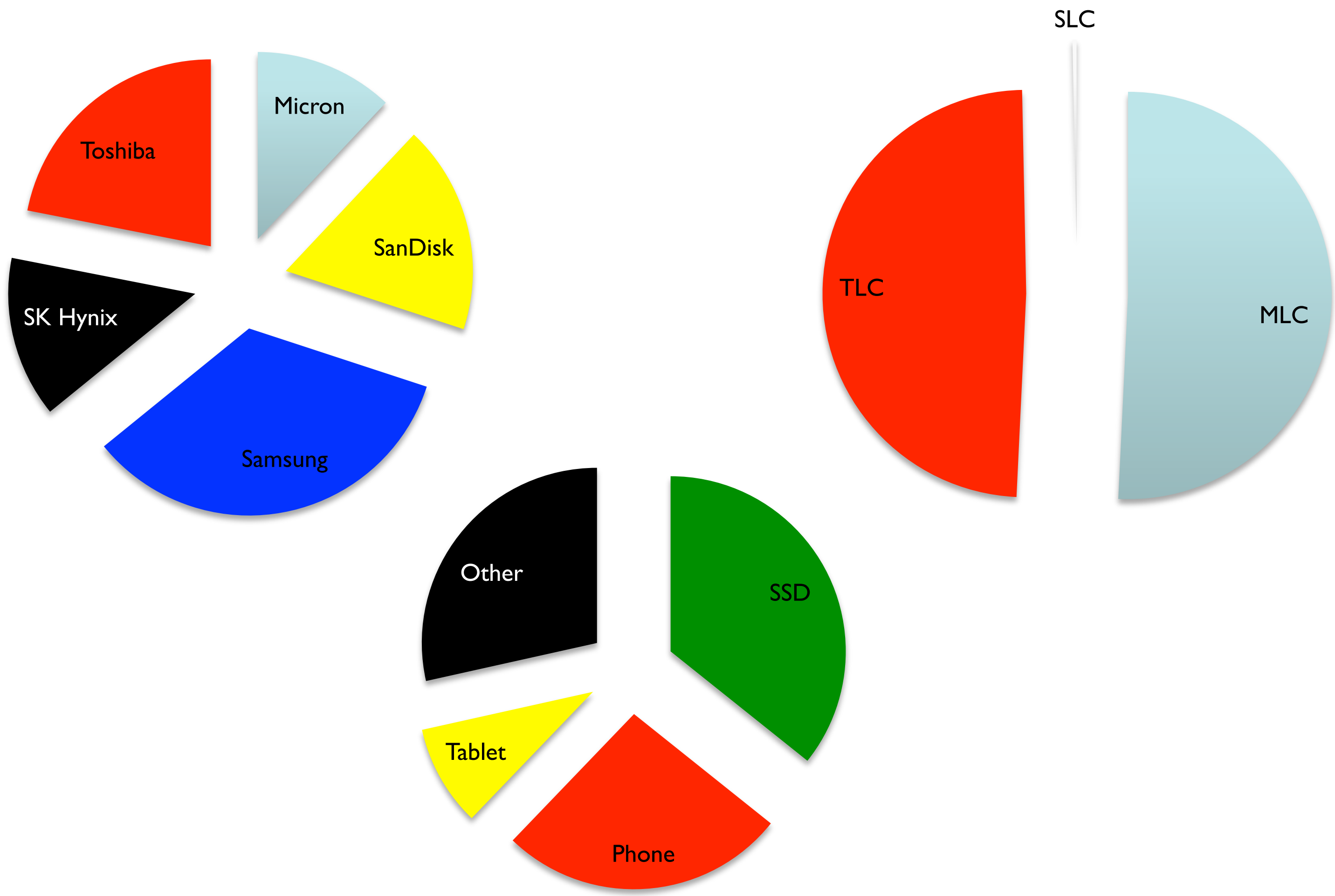
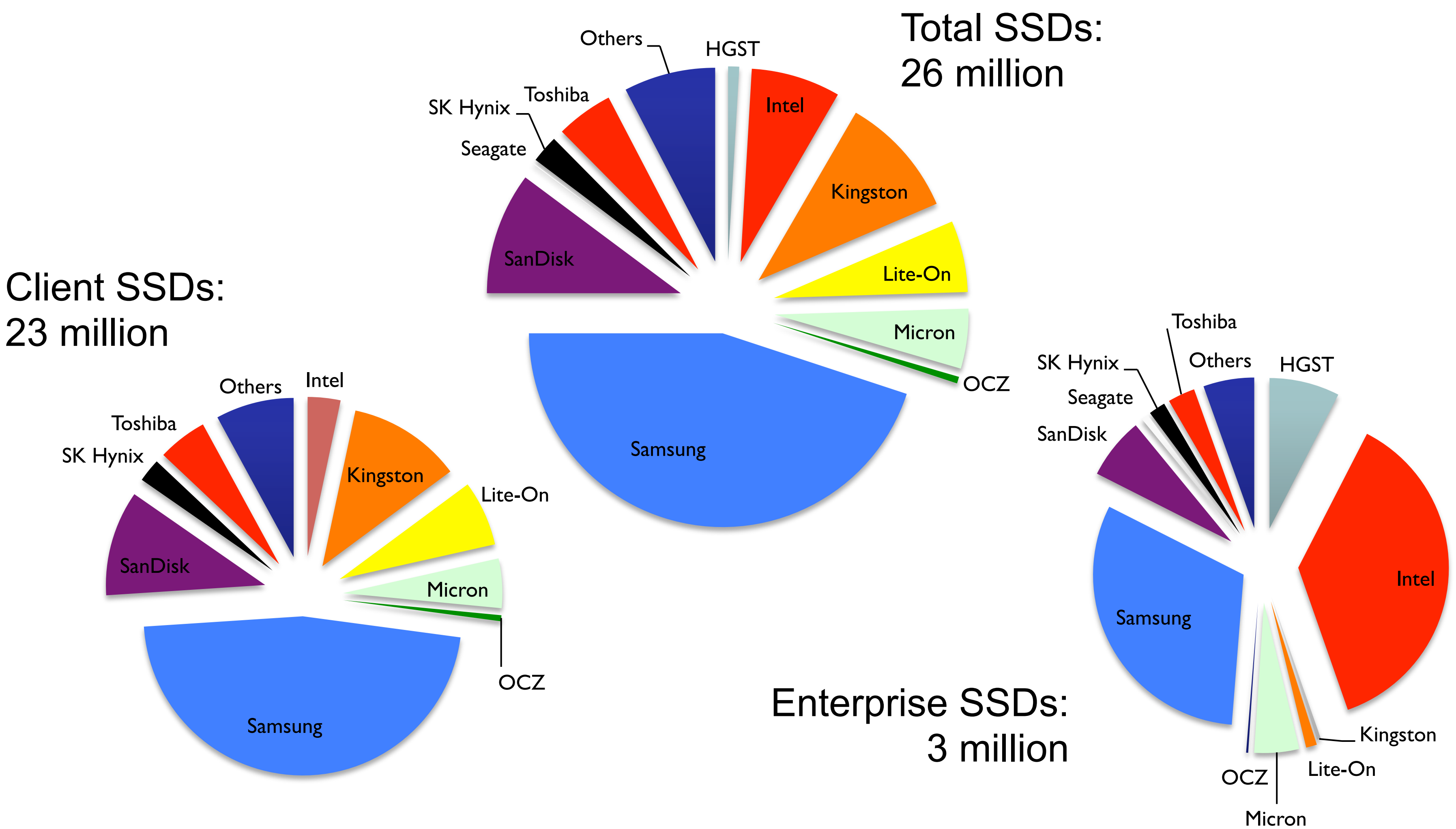
CQ3 ’15 NAND Summary, Exabytes

Total NAND: ~22 Exabytes



CQ3 '15 SSD Summary, Units



SSD Capacity Shipped: CQ3 '15

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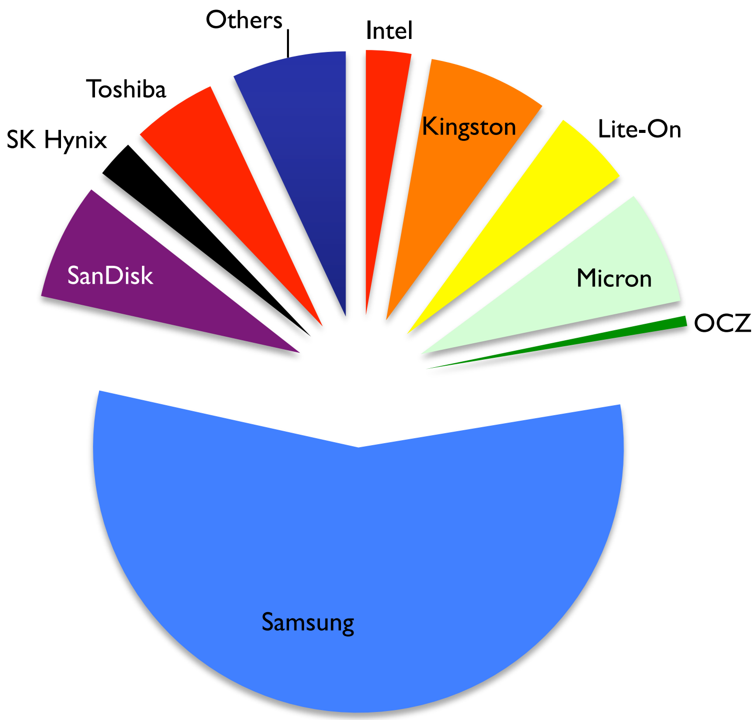
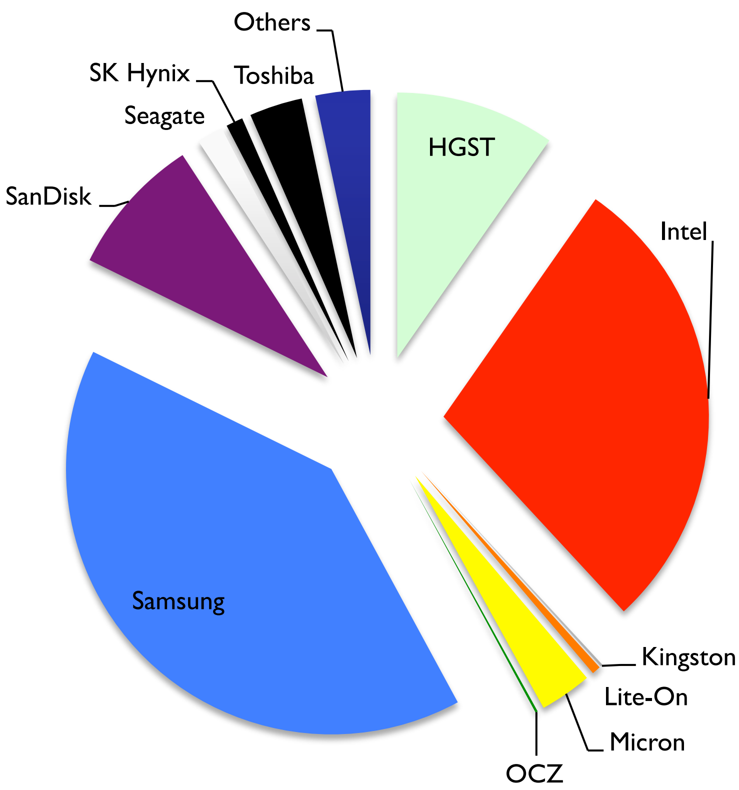
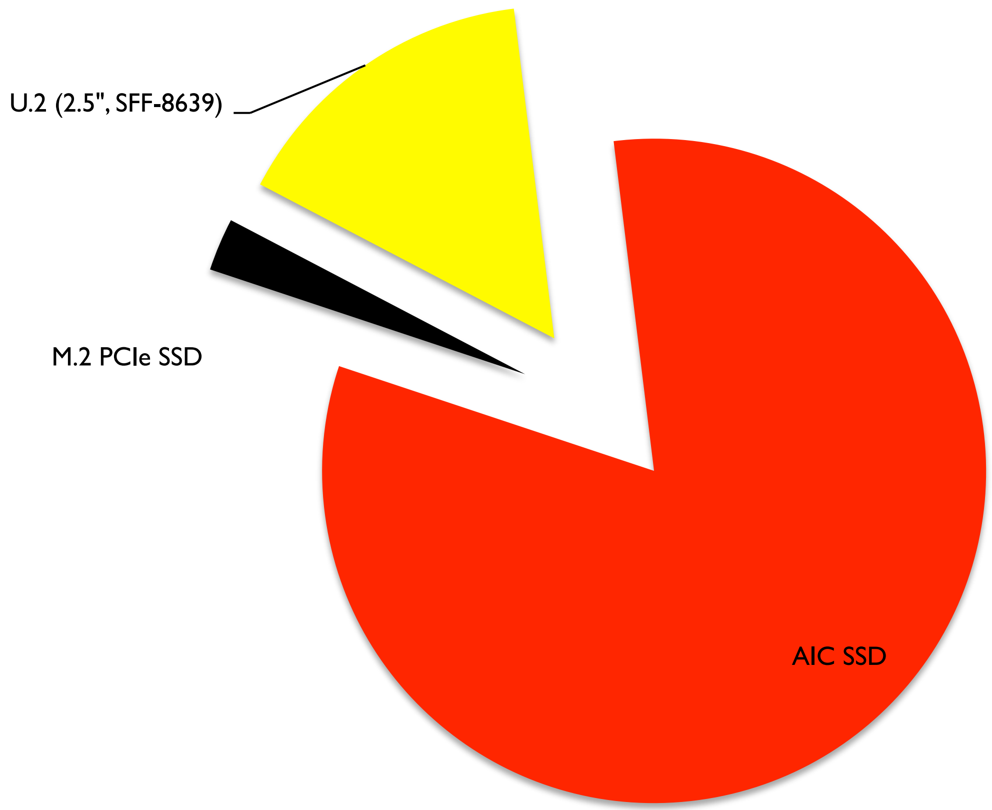
Client SSDs: ~5 Billion GB



Enterprise SSDs: ~2 Billion GB



Enterprise PCIe by Form Factor



OEM System Vendors

- Existing solutions
- Supplier base
- Pricing tiers
- Qualification cycles
- Selling to end markets customers
- Higher performance with PCIe requires higher power
- Pricing tiers for each interface continues to exist
- Of all SSD suppliers – are there any not ready, or willing to give up SATA revenue if PCIe solution not ready?
  - Margin considerations
  - Controller strategy
  - Interface & protocol expertise for pre and post sales support?
- Use client volumes as scale to move to enterprise

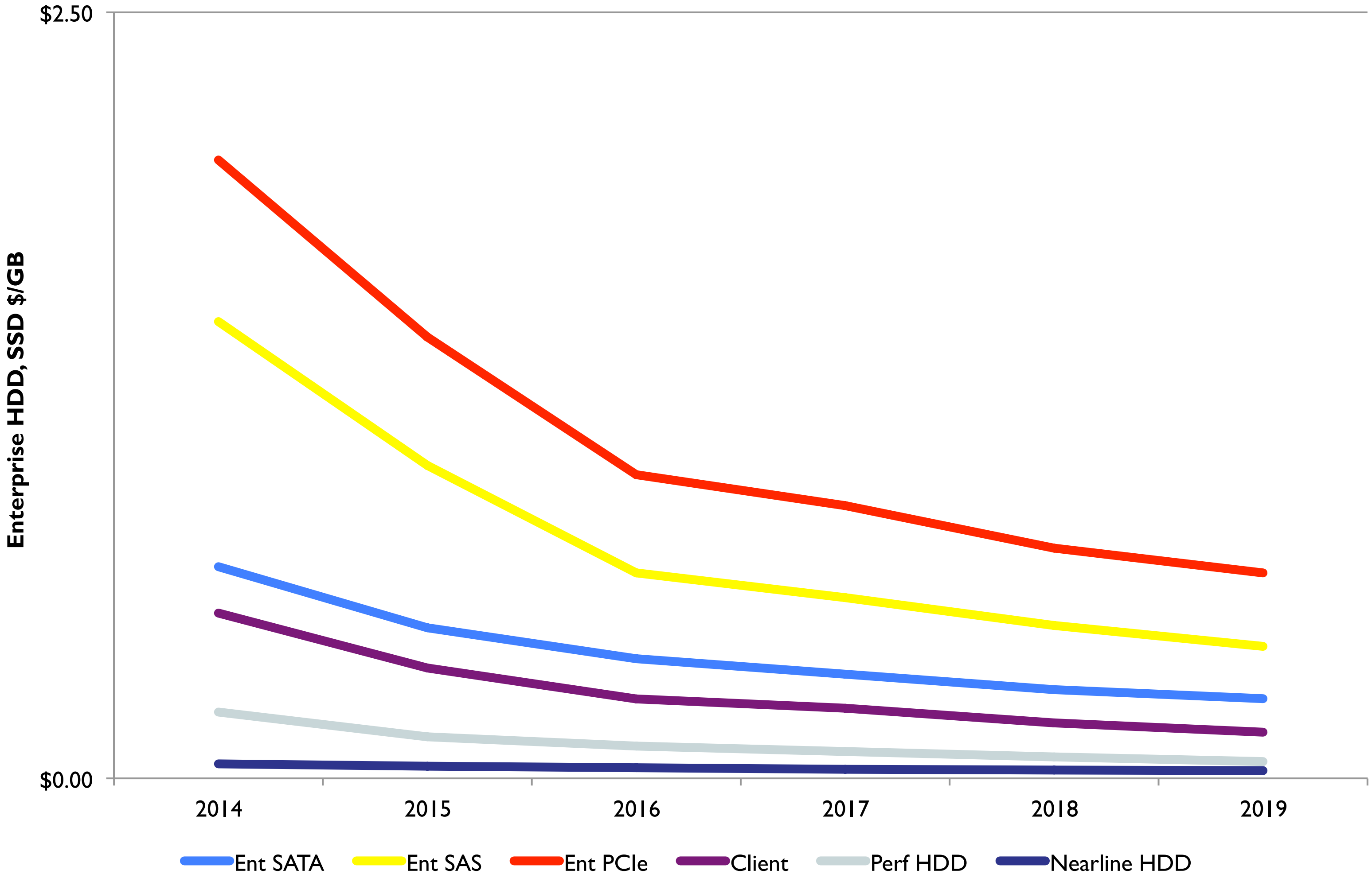
Hyperscale / Datacenter

- Consuming own IT (not selling hardware to multiple customers)
- Willingness to change technologies
- Shorter qualification cycles
- Less custom firmware (but not generic FW)
- Different mentality on FRUs
- Looser specifications (vs. system OEMs)
  - Think 4K/512e vs. 512n
  - “Disposable”
  - Not tied to new product introductions to customer base – fast adoption
- Lowest price and highest capacity point is king
- Of all SSD suppliers – are there any not ready, or willing to give up SATA revenue if PCIe solution not ready?
  - Margin considerations
  - Controller strategy
  - Interface and protocol expertise for pre and post sales support?

Channel

- Slow to change technologies
- Relies on reference designs and compatibility lists
- Lowest pricing and inventory rules (think SATA and pre builds)

SSD, Ent HDD $/GB Trends



Enterprise SSDs by Interface

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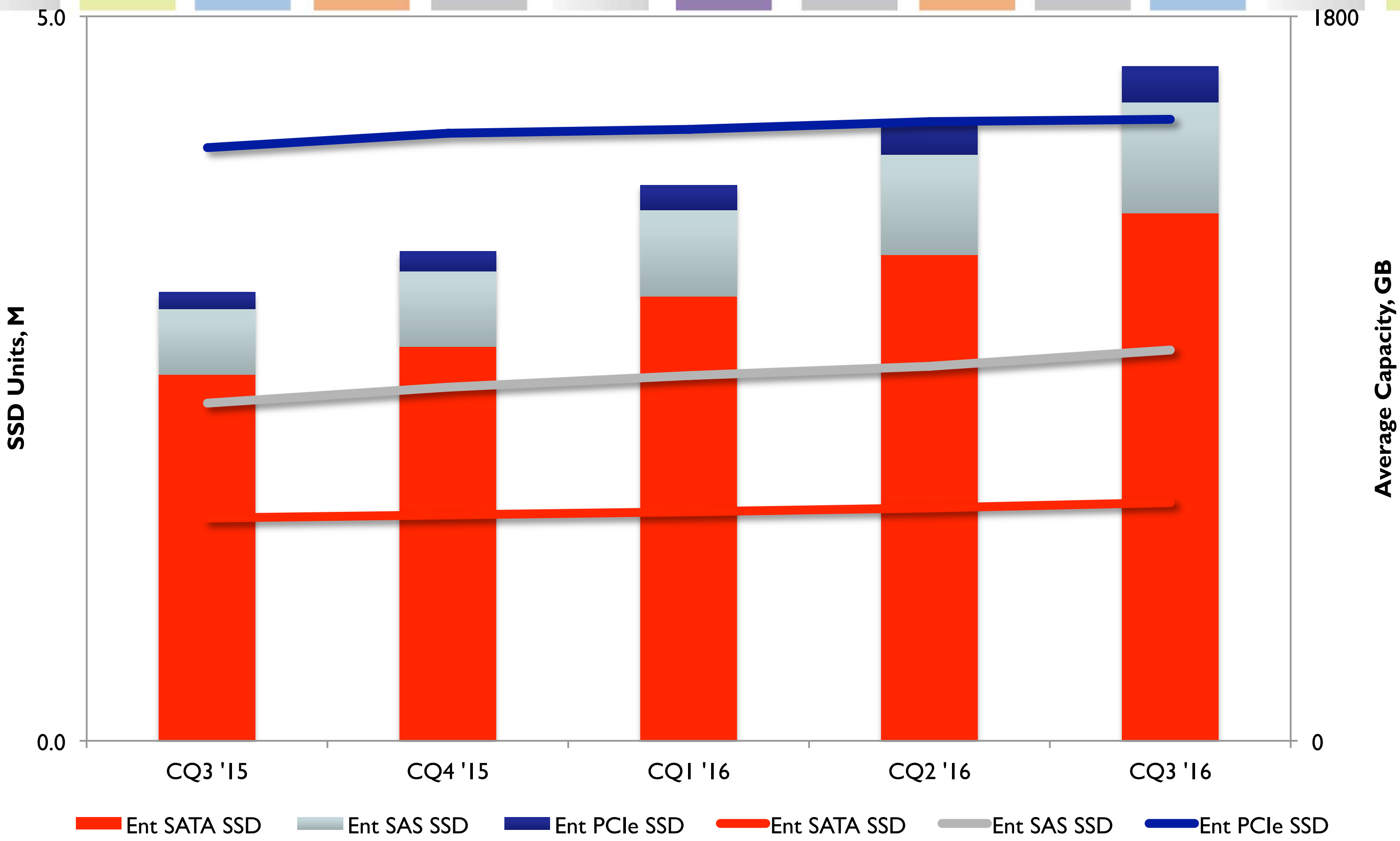
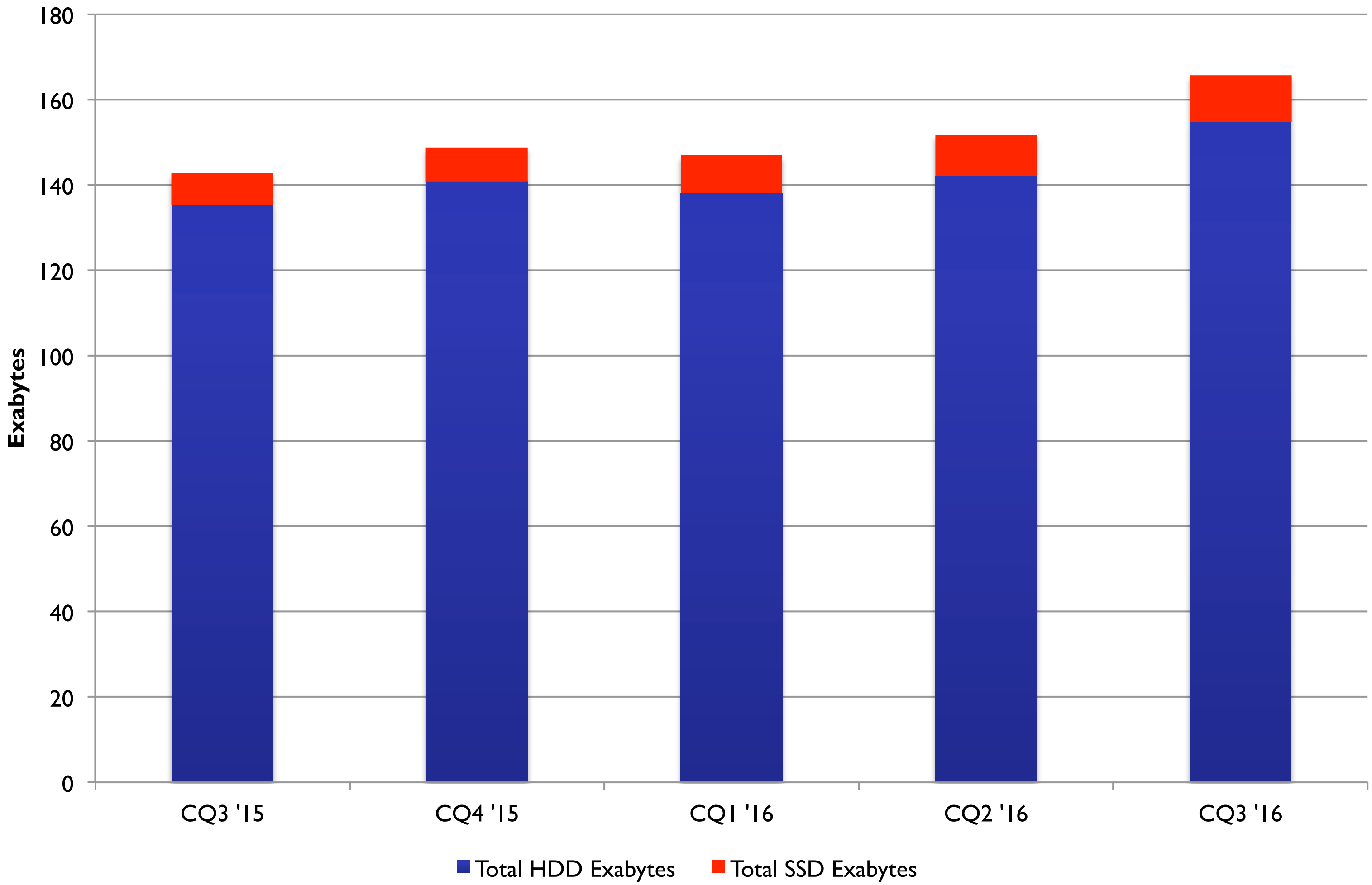


HDD & SSD Exabytes



Performance HDD v Enterprise SSD

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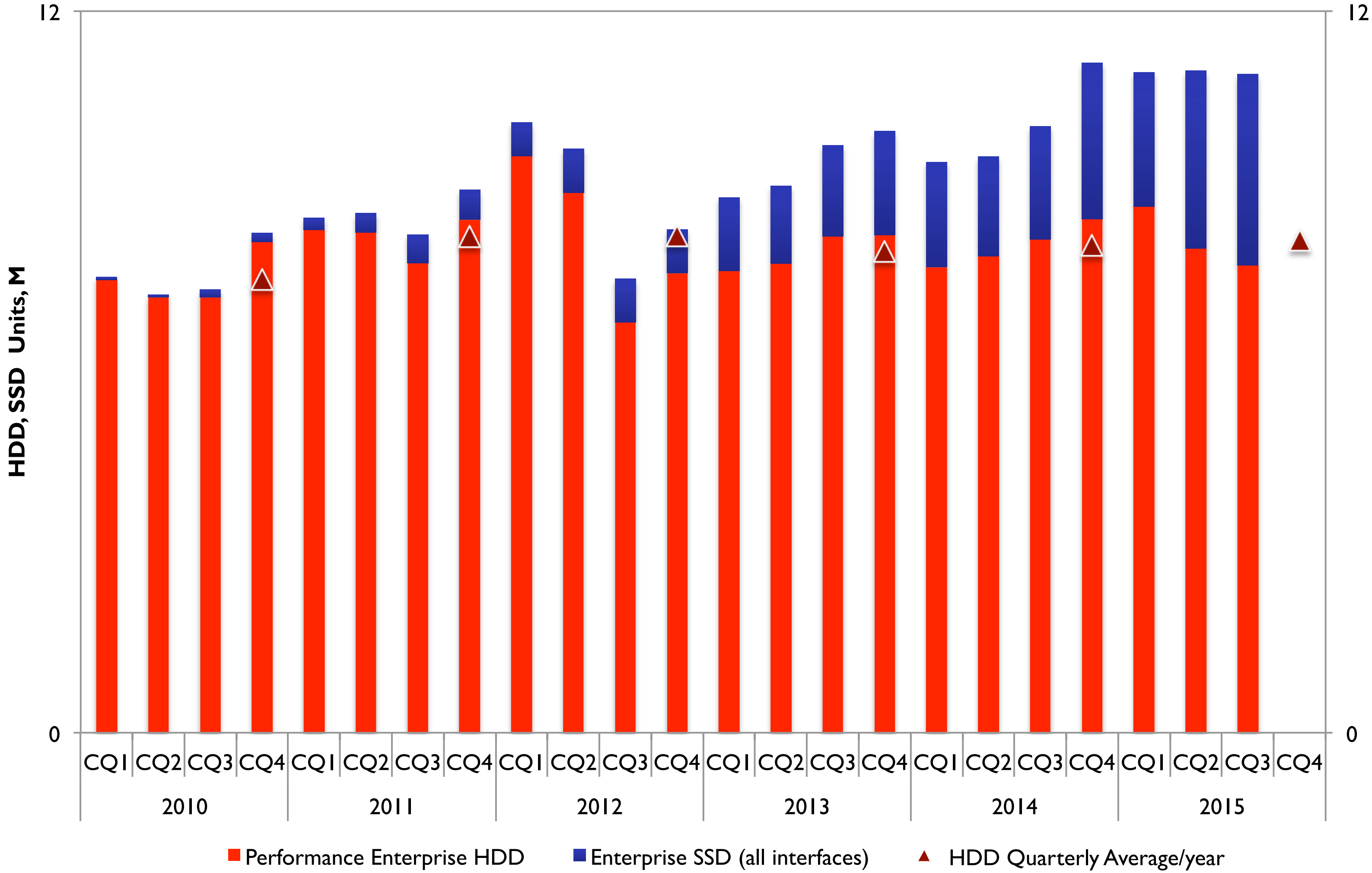

Thank You!

Solid State Storage Initiative

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