# Satisfying Cloud Data Center Requirements with New Memory-Storage Hierarchy

Nigel Alvares, Sr. Director of Marketing (nalvares@inphi.com)
August 12th, 2015

# Cloud Data Centers Seeking to Increase their "*Work per $*"
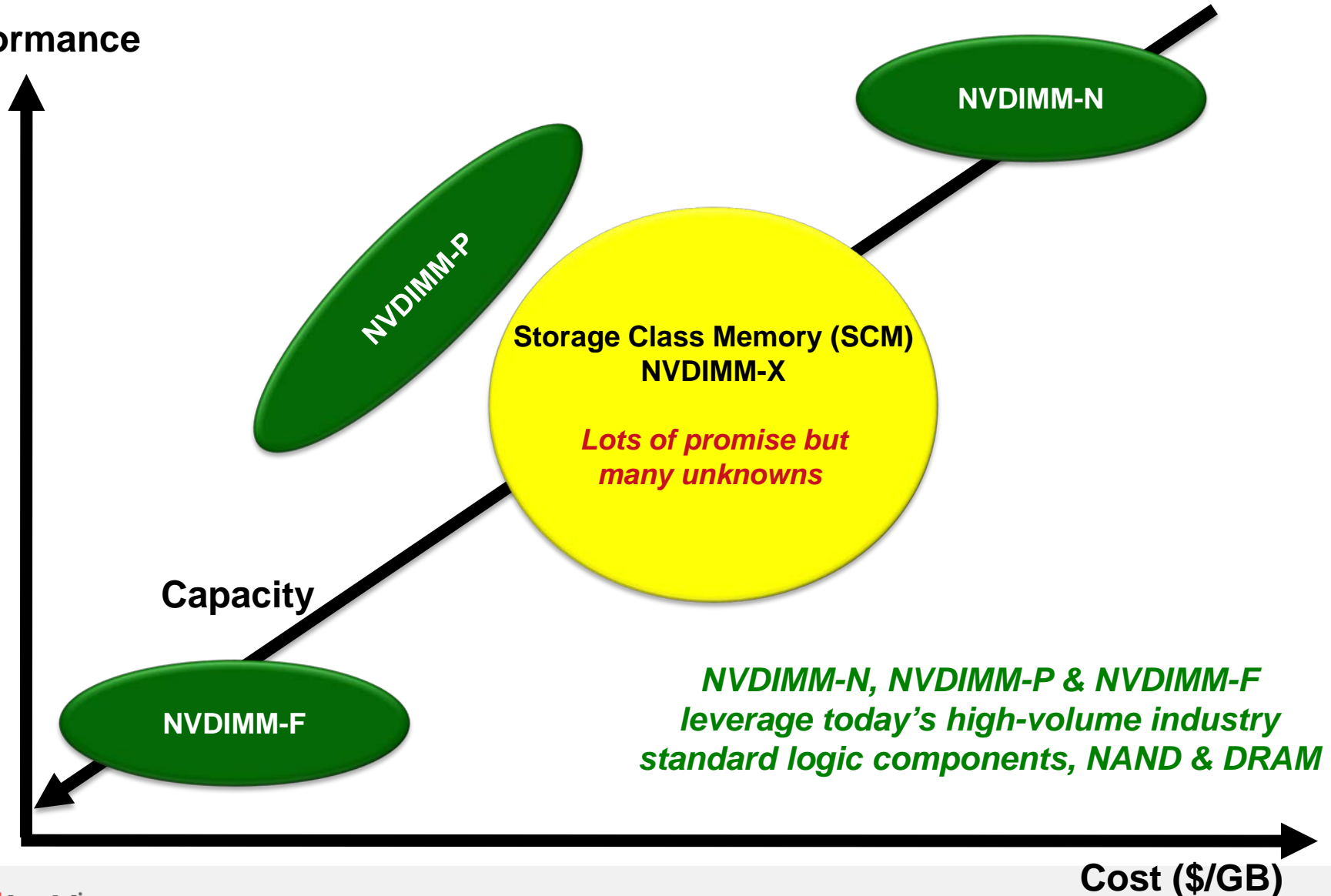
**$ per Bit**

**Power per $**

**Performance per $**

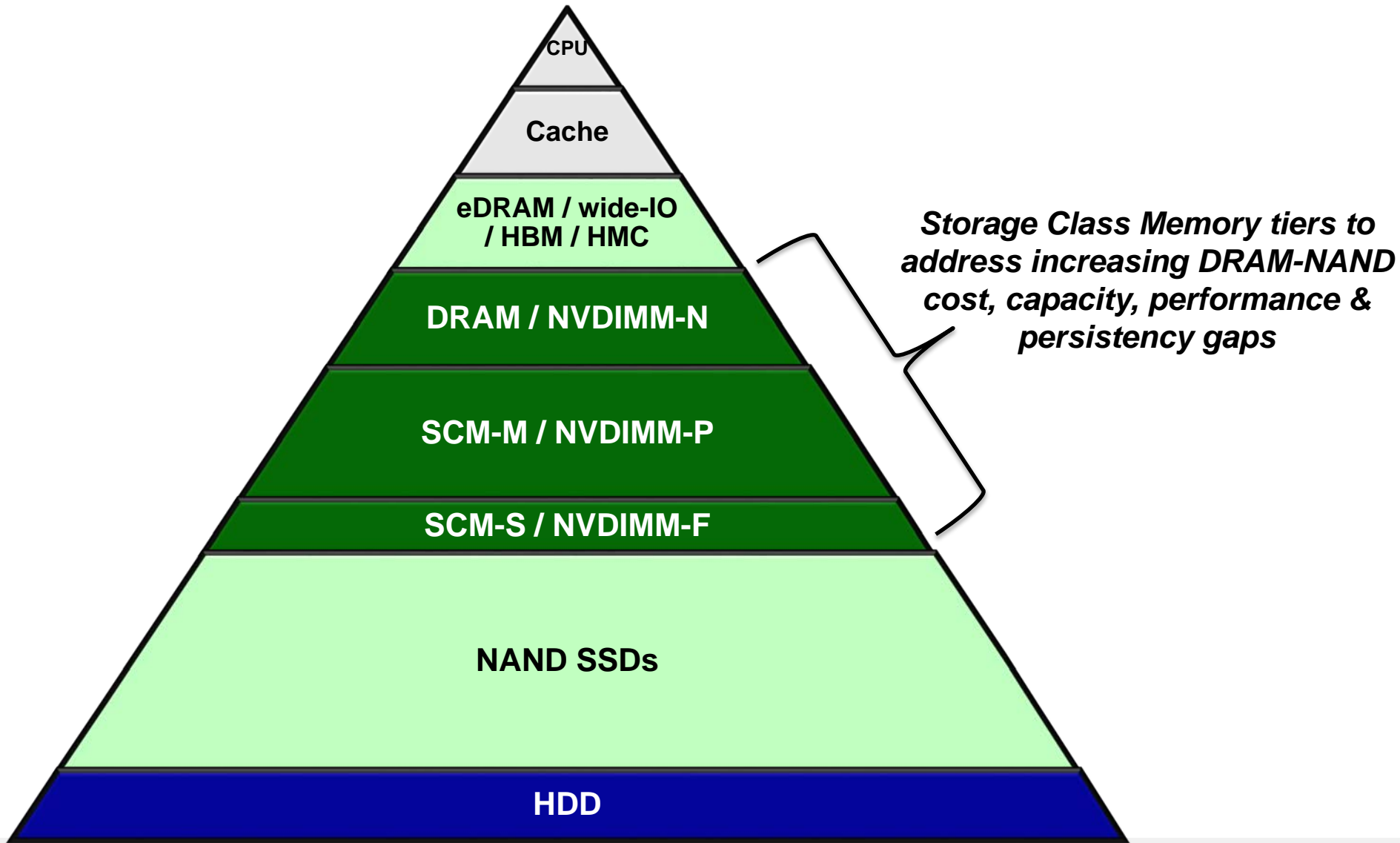## *Optimized "Workload" Architectures are the Name of the Game*

➢ Today a balancing act between CPUs, R/LRDIMMs, SSDs, HDDs & NIC

➢ Tomorrow add emerging storage class memory solutions to equation

# Emerging Storage Class Memory Solutions

**Performance**

**NVDIMM-N**

**NVDIMM-P**

**Storage Class Memory (SCM)
NVDIMM-X**

*Lots of promise but
many unknowns*

**Capacity**

**NVDIMM-F**

*NVDIMM-N, NVDIMM-P & NVDIMM-F
leverage today's high-volume industry
standard logic components, NAND & DRAM*

**Cost ($/GB)**

# 2020 Cloud Data Center Memory-Storage Hierarchy

CPU

Cache

eDRAM / wide-IO / HBM / HMC

DRAM / NVDIMM-N

SCM-M / NVDIMM-P

SCM-S / NVDIMM-F

NAND SSDs

HDD

*Storage Class Memory tiers to address increasing DRAM-NAND cost, capacity, performance & persistency gaps*

Inphi

Thank You