

# **Technology & Market Directions**

**SOS10 Review  
Maui, Hawaii**

# The Road Ahead



## More Cores

2, 4, 8

## New Memory Support

DDR2, DDR3, FB-DIMM

## Faster Input/Output

HyperTransport 3, PCI Express Gen 2

## Better Power Management

Split power planes allow CPU core voltage to be reduced, while NB services probes, memory requests

## Trusted Computing

Enhanced Virus Protection, Presidio

# AMD Architectural Generations

Available under NDA



# Duration of 'Moore's law' Some Observations

- Semiconductor manufacturing process geometries continue to shrink
  - Theoretically supporting 'Moore's Law' through 2008/9
  - Memory has historically exceeded 'Moore's Law'
  - Other physical limitation place challenges on processor performance
- FLOPs continue to get cheaper
  - Alpha in '94 was less than \$4/MFLOP
  - Subcent price/performance today
- Fabless semiconductor companies offer interesting economic model
  - Be viable without "filling a fab"
  - Serve smaller markets or applications

**Per IDC HPC growth is larger  
than market!**

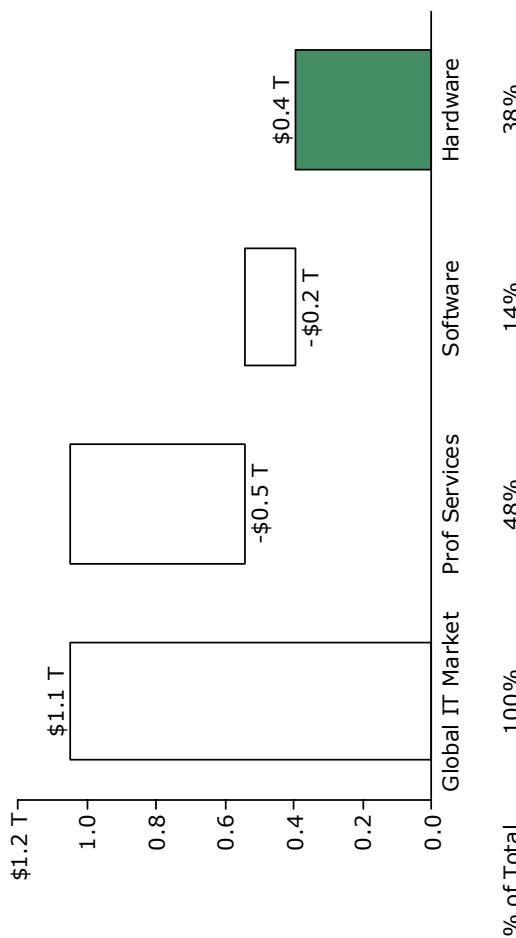
# WW IT and HW Market Size

## Total vs. Commercial

- The WW HW market is ~\$400B.
- The WW Commercial HW market is ~\$225B.

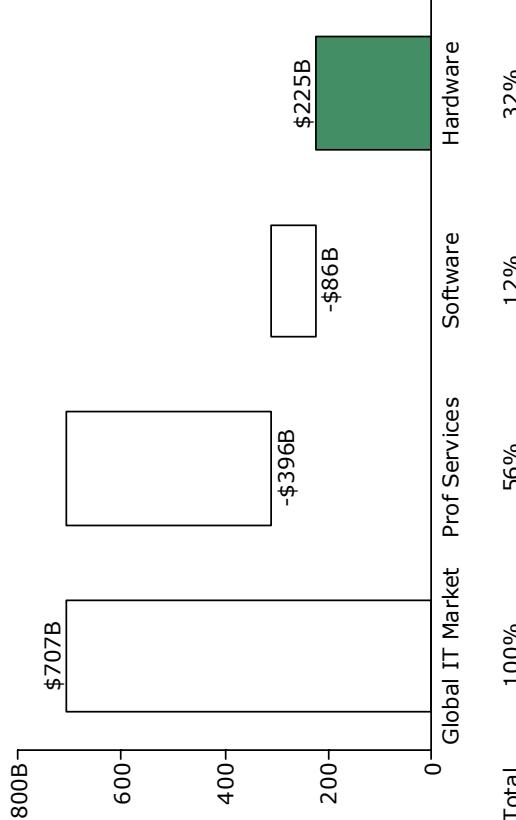
### Est 2006 WW IT Spend

2006E WW IT Spend

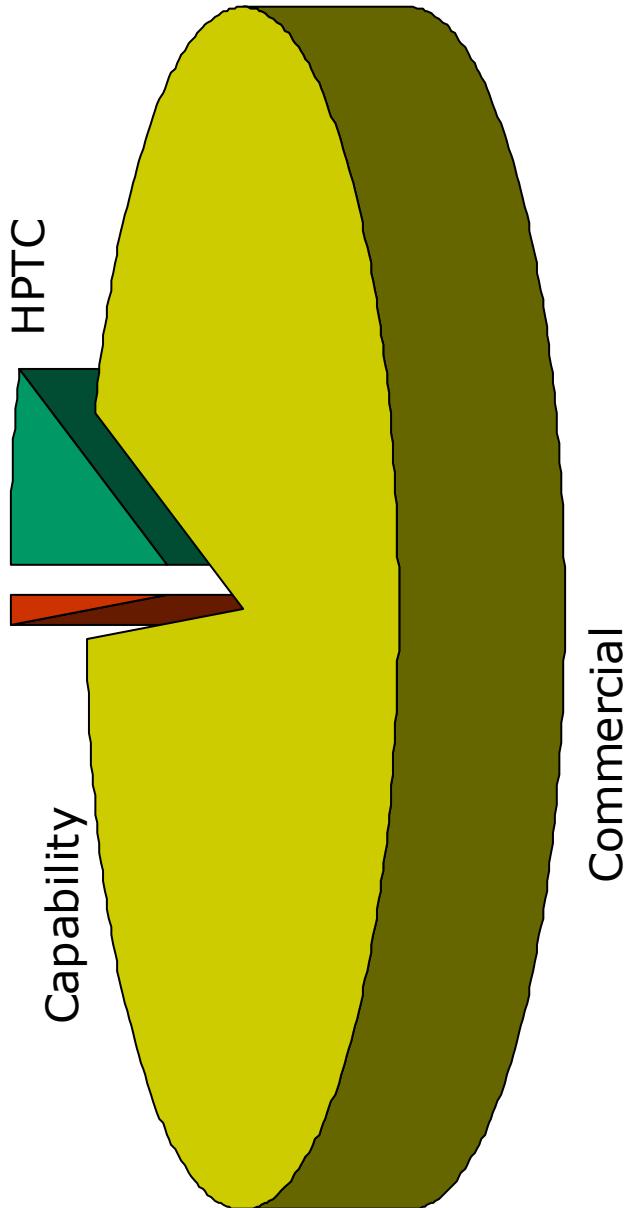


### Est 2006 WW Commercial IT Spend

2006E WW Commercial IT Spend



# 2006 Market Segmentation



# HPC Has Commercial Relevance

- HPC Exists in the Commercial Market
  - Manufacturing
  - Geophysical
  - Financial Services
  - Pharmaceuticals
- Demonstrating Commercial Application of HPTC Techniques
  - Bootstrapping in Financial Services
  - Newer derivatives/exotic instruments
  - Economic forecasting
- Managing Large Datasets
  - Value of high performance interconnects
  - Better file systems
  - Curating techniques

# Helping the Cause

- Increase awareness of information helpful to CIOs
- Participate with material in market forums (as appropriate)
- Visibility to forums like SOS\*\*

**Thanks!**

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