

Blade Servers

State of the Industry 2006

Industry Keynote Address

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Markets Drivers / Industry Dynamics

Chaos in the Enterprise DataCenter Infrastructure

Achieving TCO & ROI - Volume Blade Economics

Overcoming Complexity in 3 Tiered Computing

Major Applications – OLTP, DSS, HPC, Streaming

- **Technology Hurdles & Industry Issues**

IP Stack, Backplane, IPC, SSI, SAS/SATA, Standards

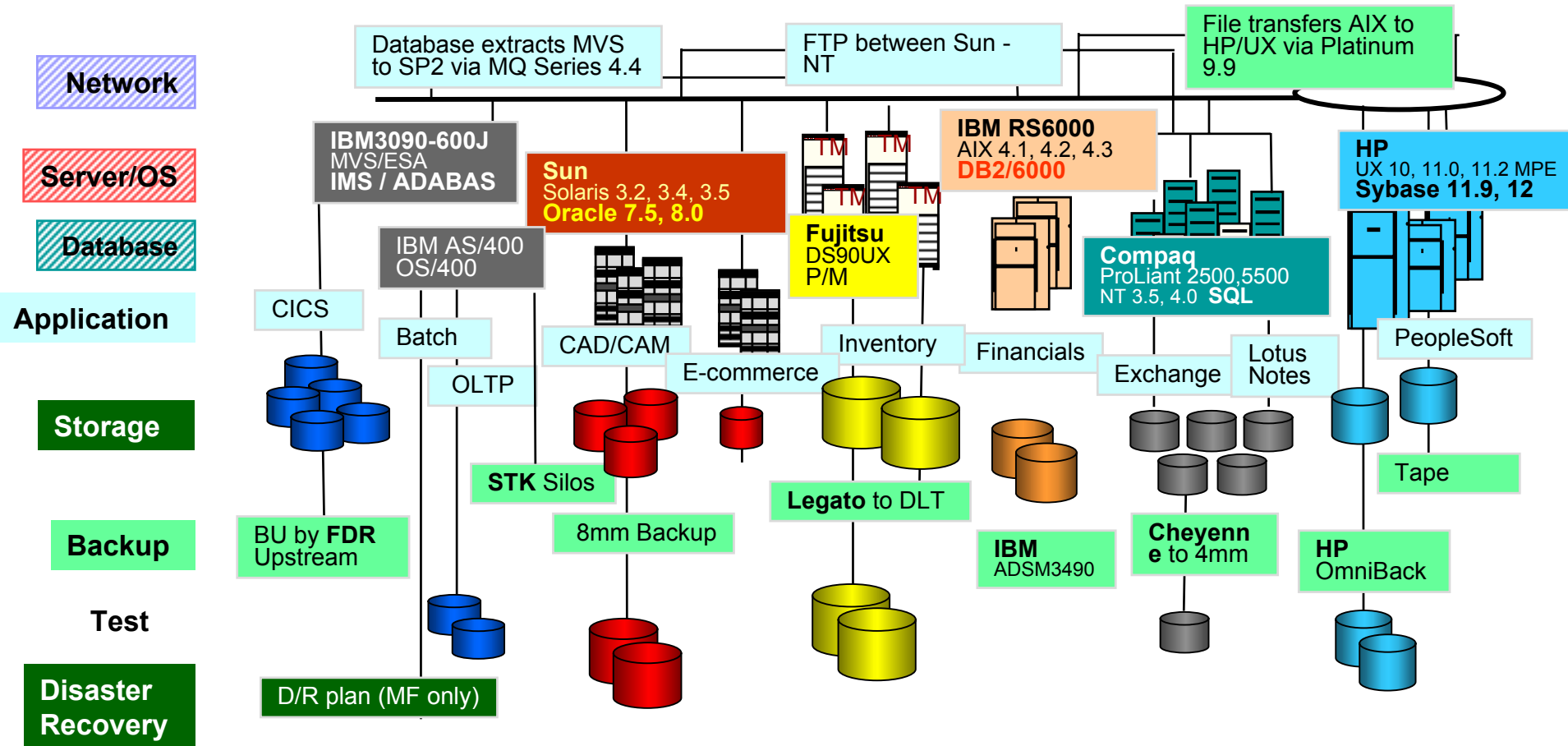
- **Competitive Positioning**

Mgmt SW, Complexity, App-Awareness, Disty Channels

- **Futures Opportunities**

Semiconductors Opportunities for IP Everywhere, Grids,
Data/Telecom Convergence, Data Management Structures

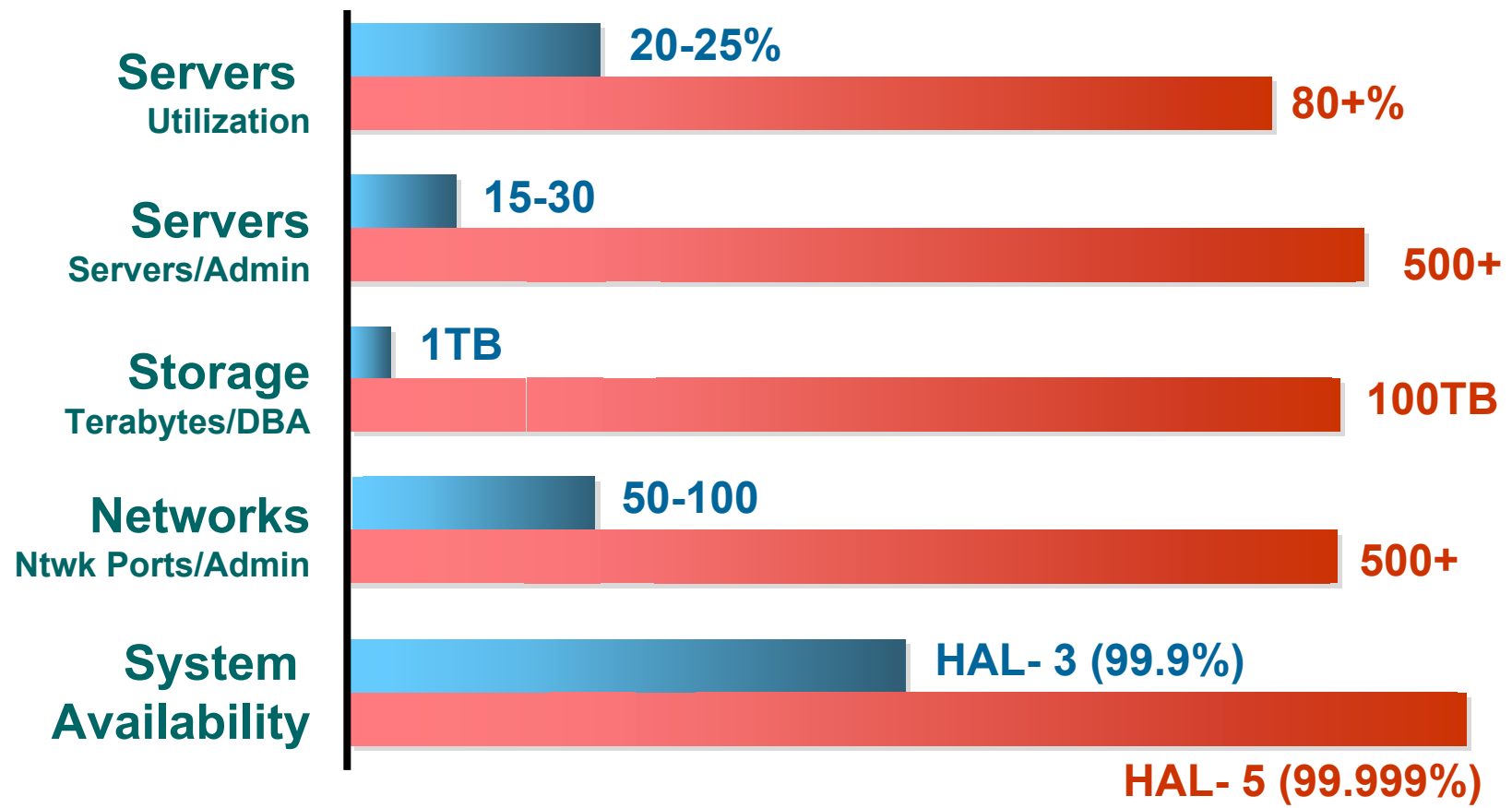
► Chaos in the Enterprise . . .



(1) Scales poorly (2) Difficult to manage (3) Reliability is questionable (4) Management costs out of control

Source: Blade Servers 2006 Industry Report – © IMEX Research.com

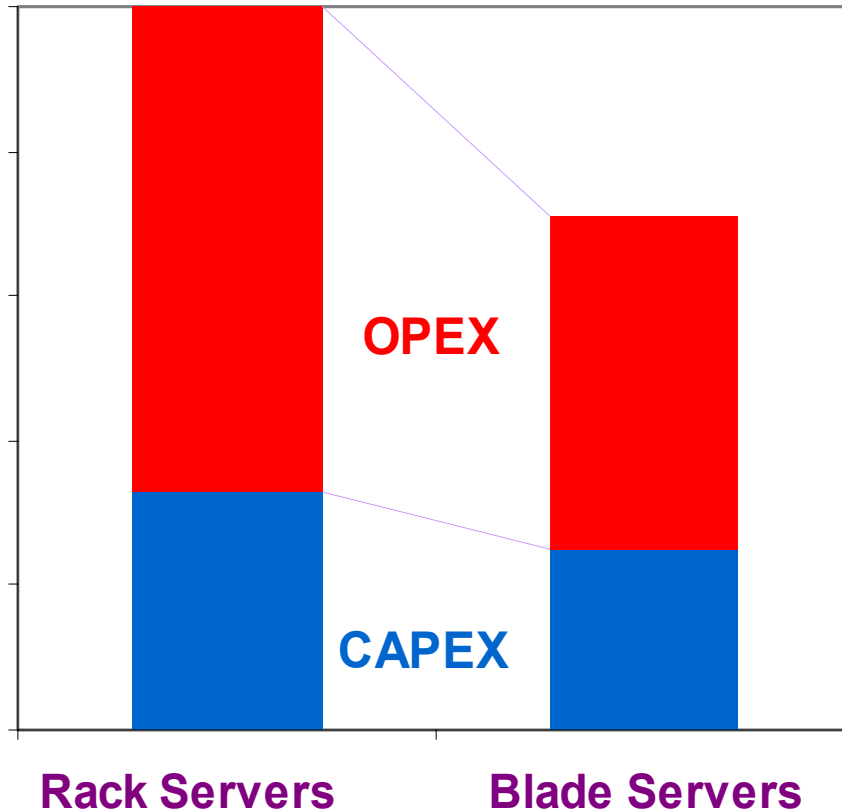
▶ DC Automation Driving Blades Market



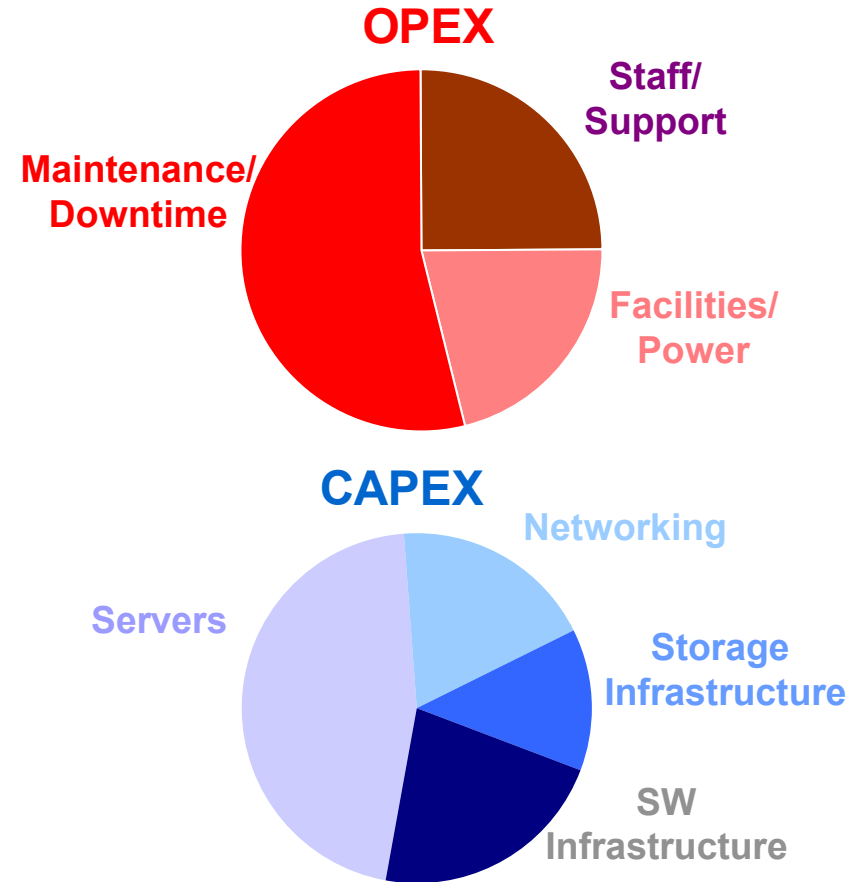
Source: Blade Servers 2006 Industry Report – © IMEX Research.com

► Blades - TCO Savings & ROI

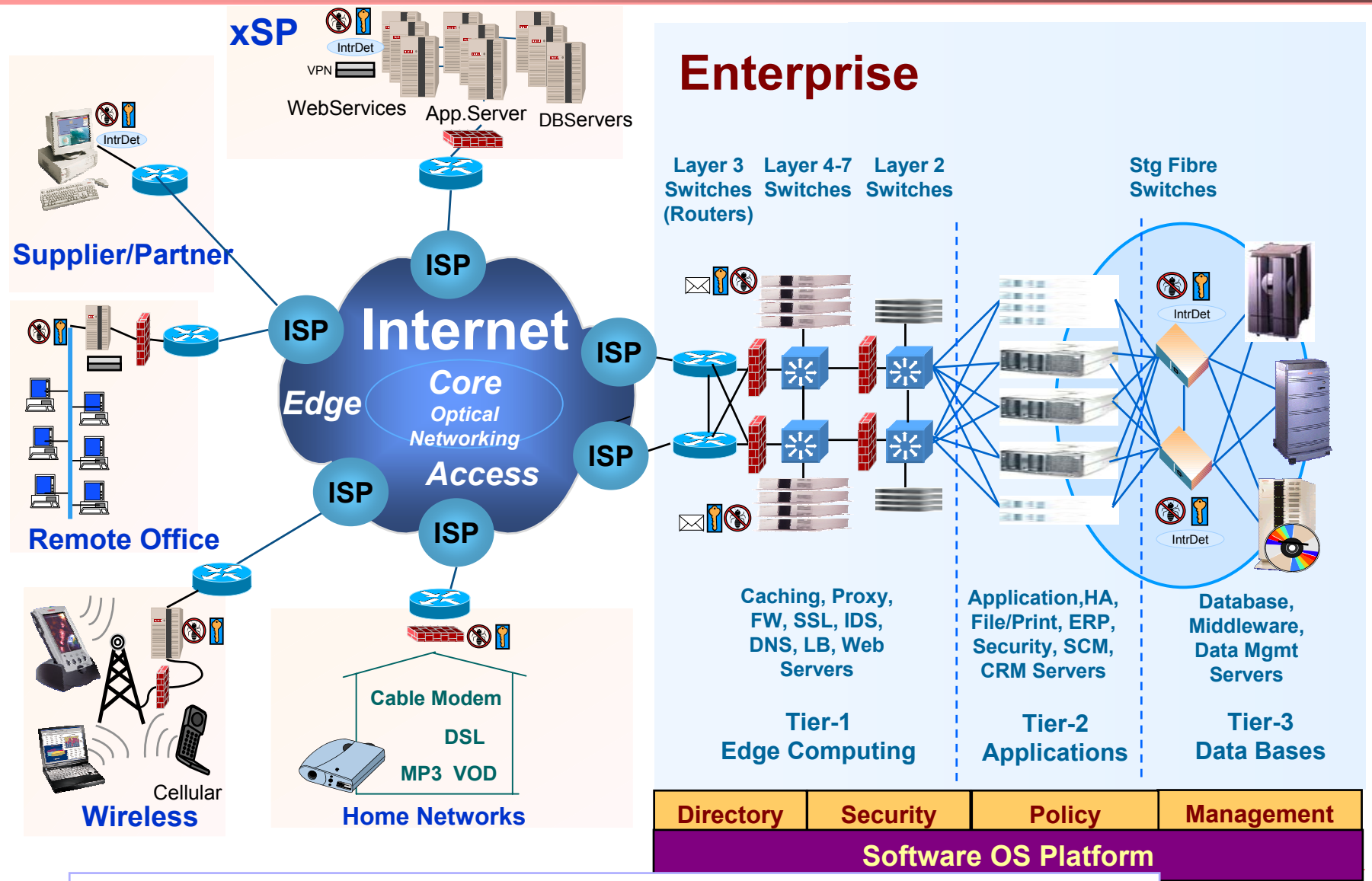
3 Year TCO Savings Rack vs. Blade Servers



TCO Savings in..



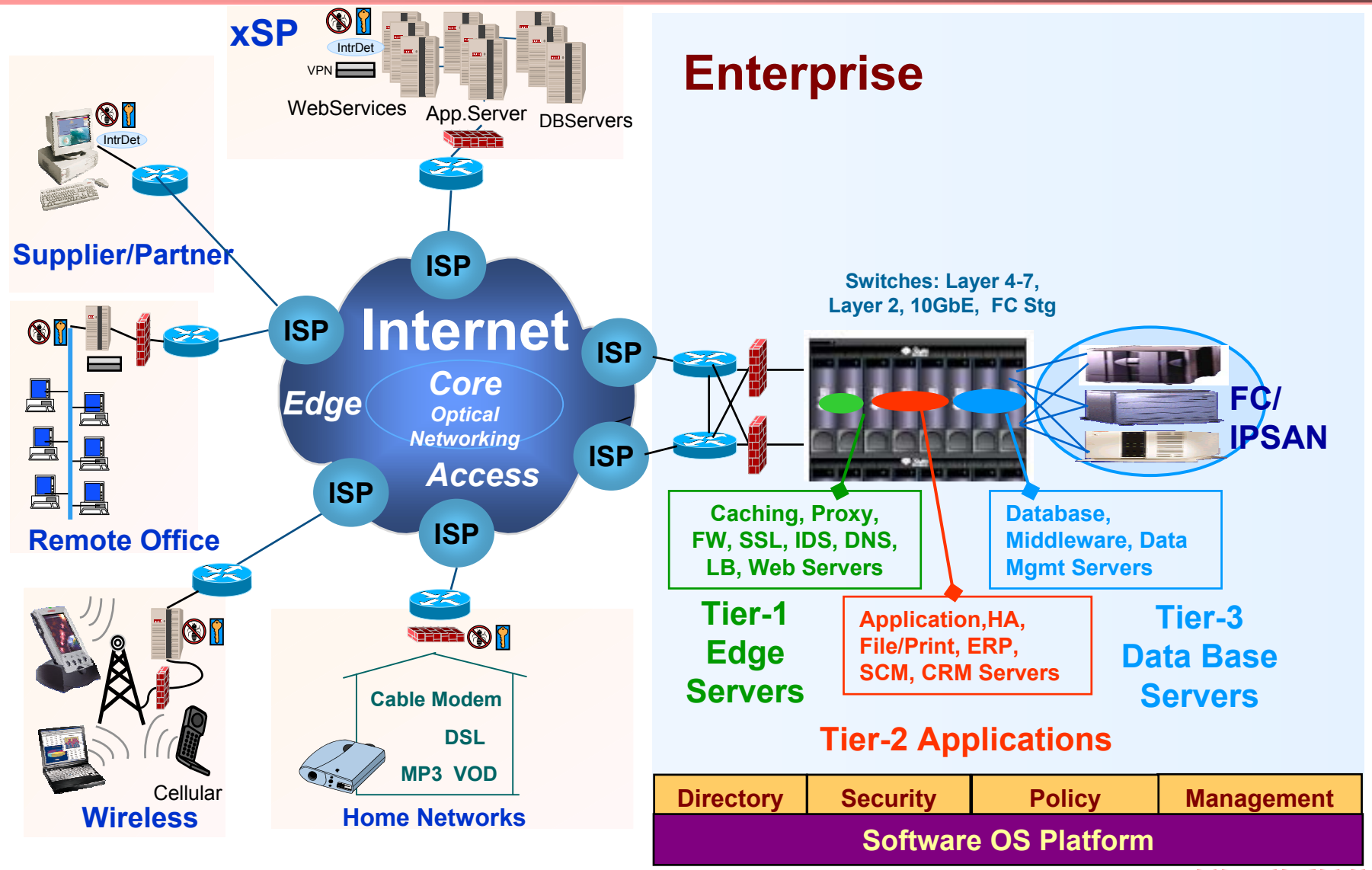
HA End to End Internet with Security Products



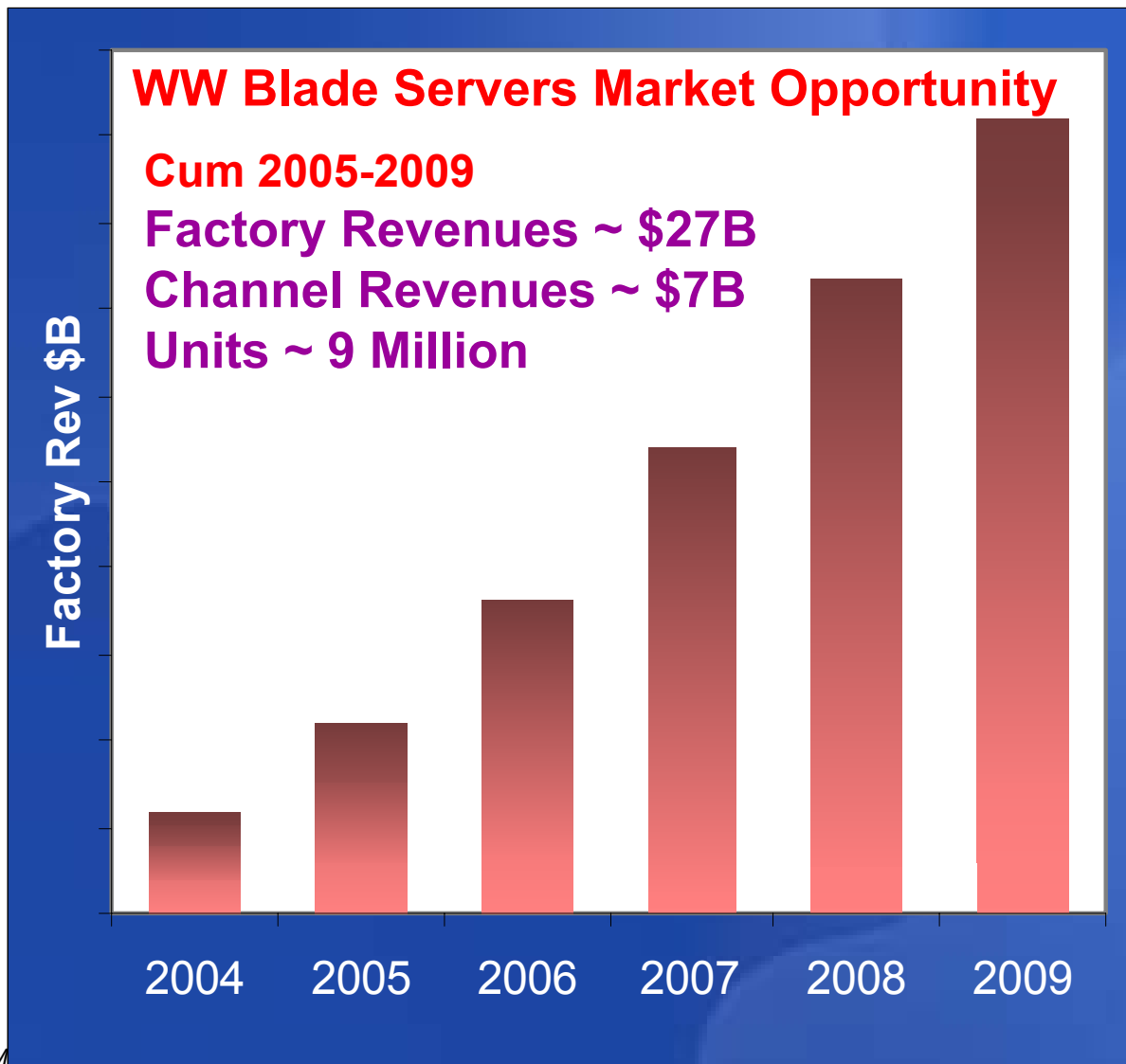
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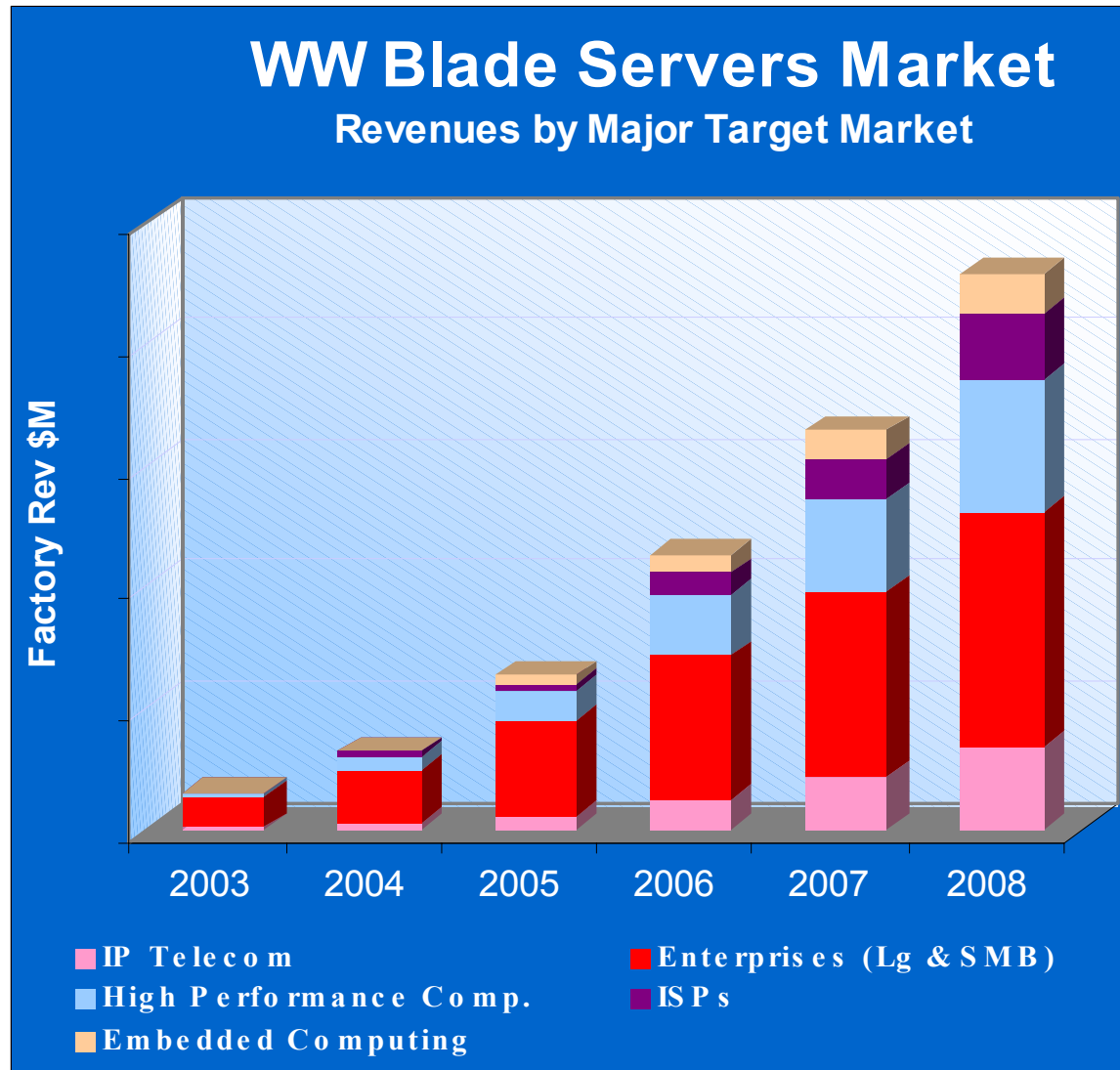
HA End to End Internet with Security Products



► Blade Servers Market Opportunity

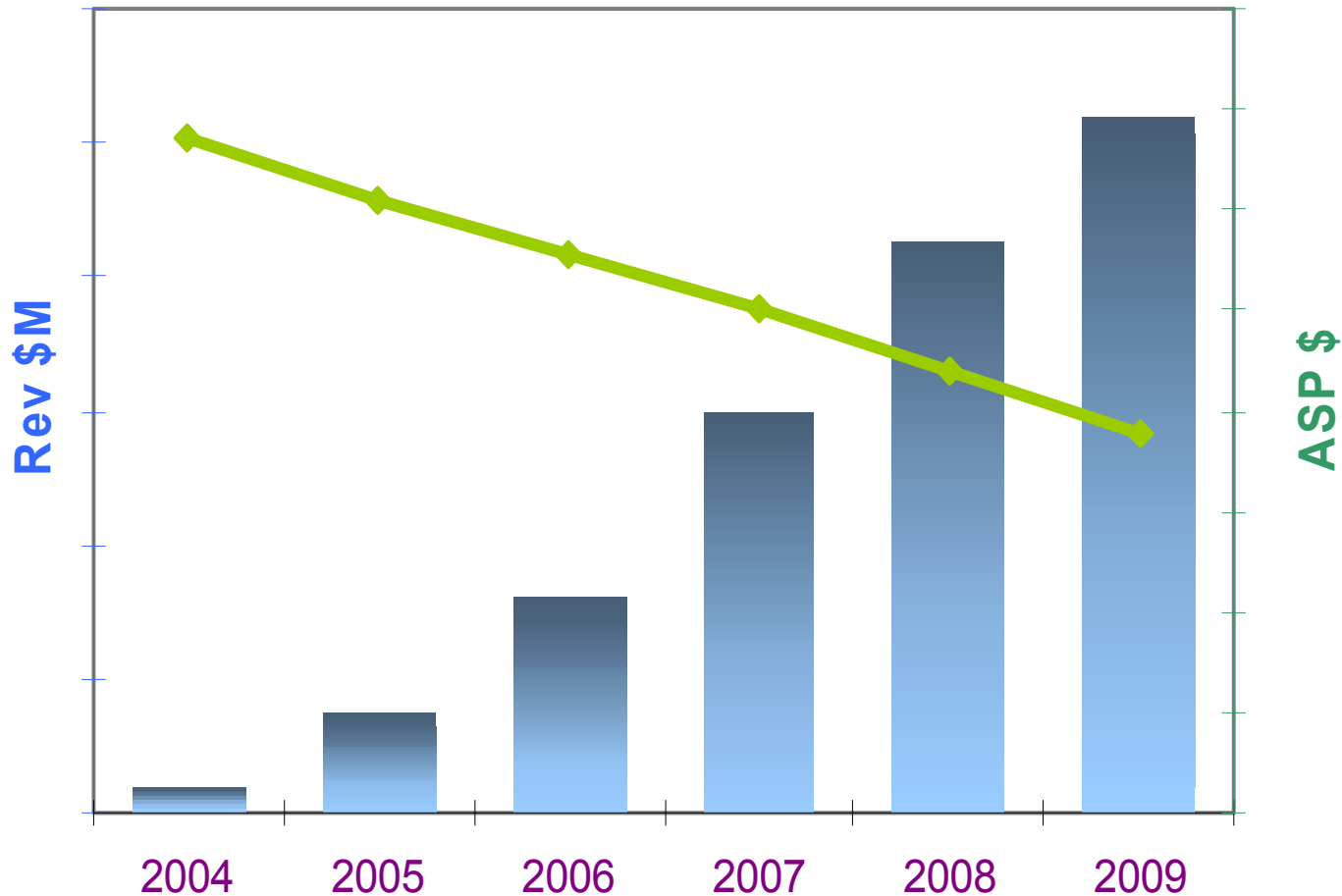


Blade Servers by Market Segments



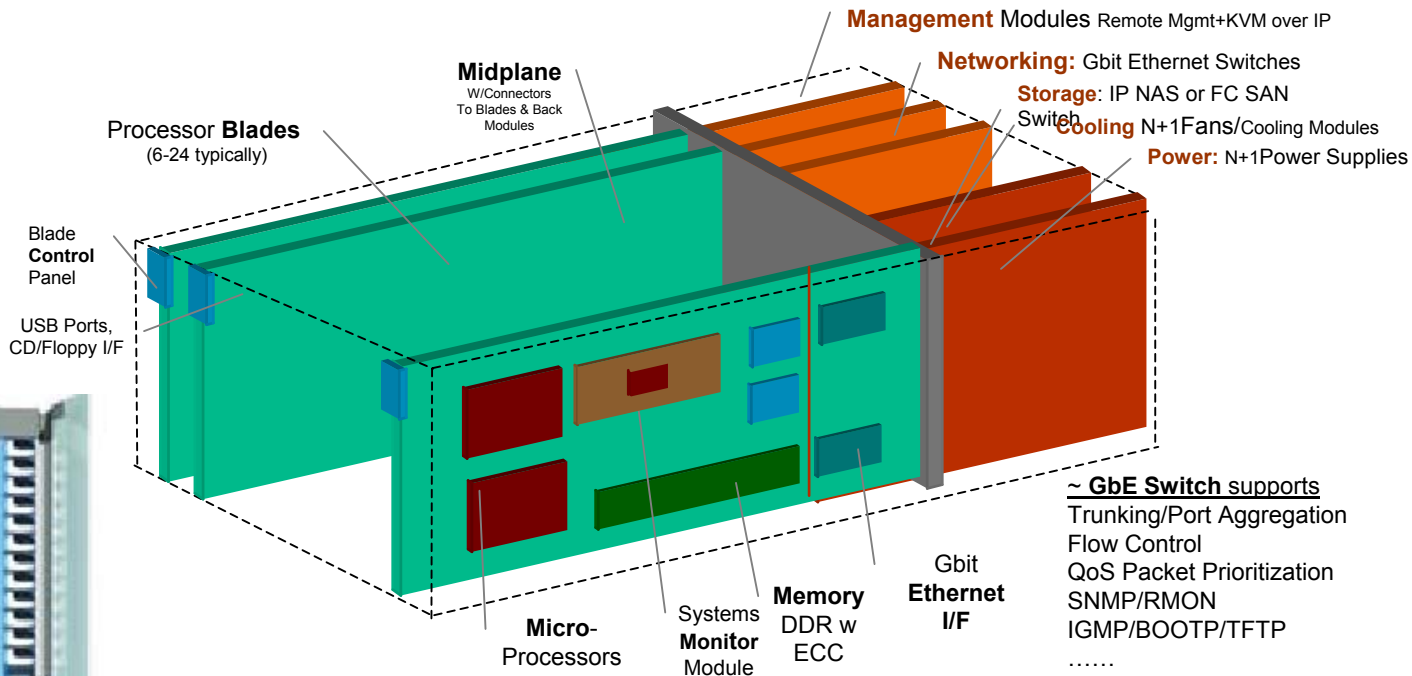
► *The Rise of PC Blades*

PC Blades Revenues & ASP

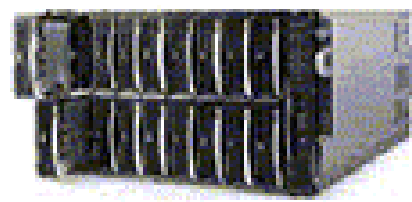


Source: Blade Servers 2006 Industry Report – © IMEX Research.com

Blade Infrastructure: Local Area Grid (LAG) ©

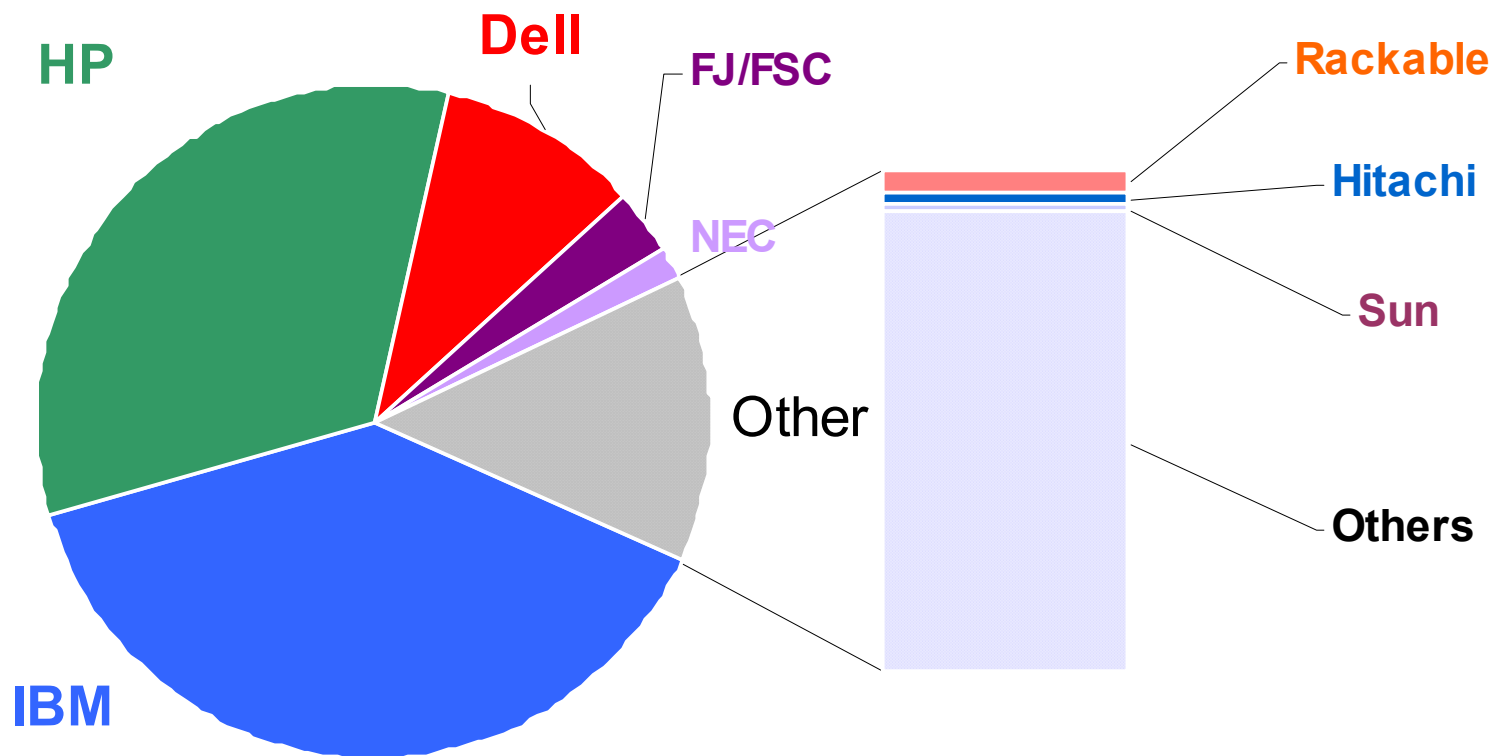


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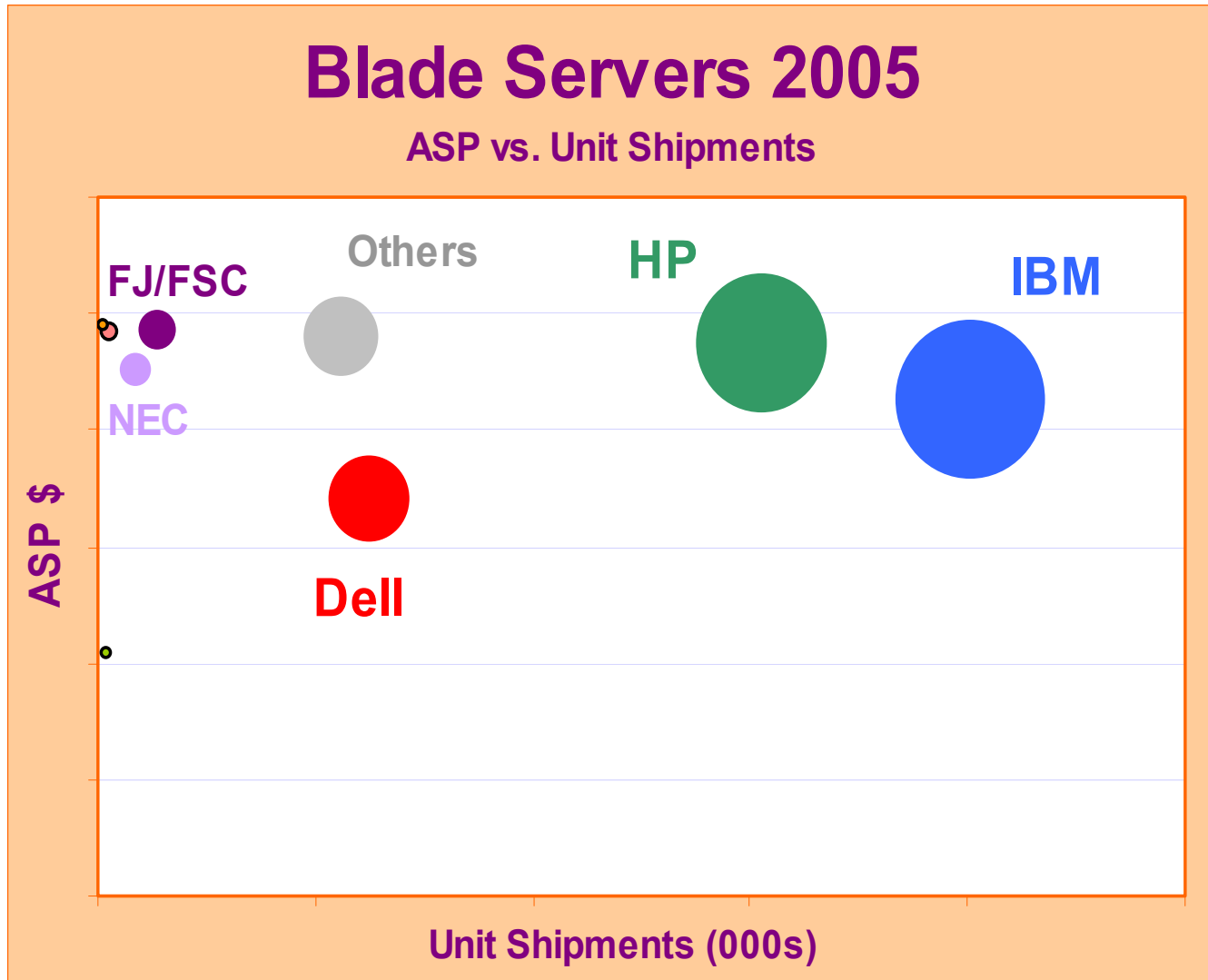




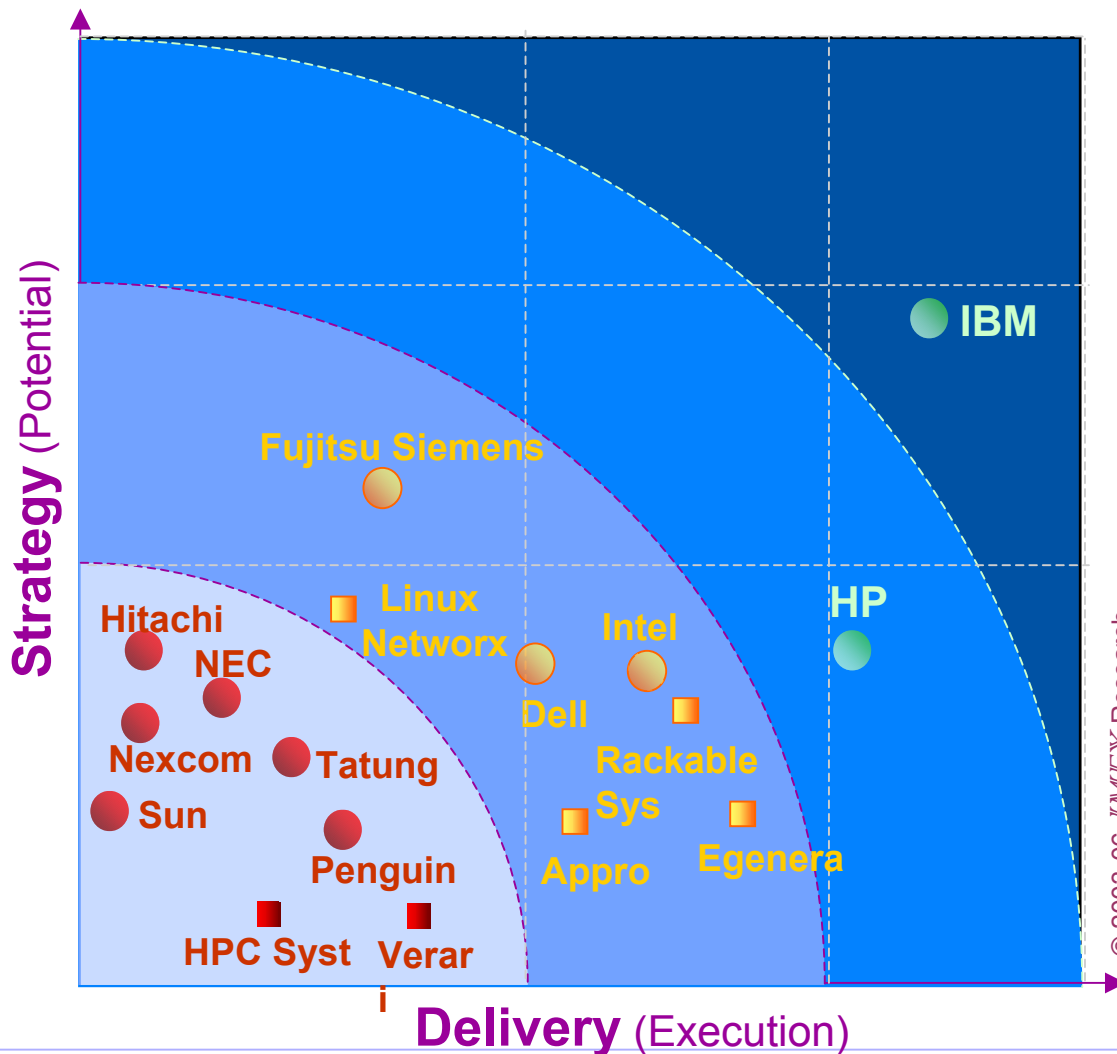
Blade Servers – Market Leaders 2005



▶ Leveraging Pricing to gain share



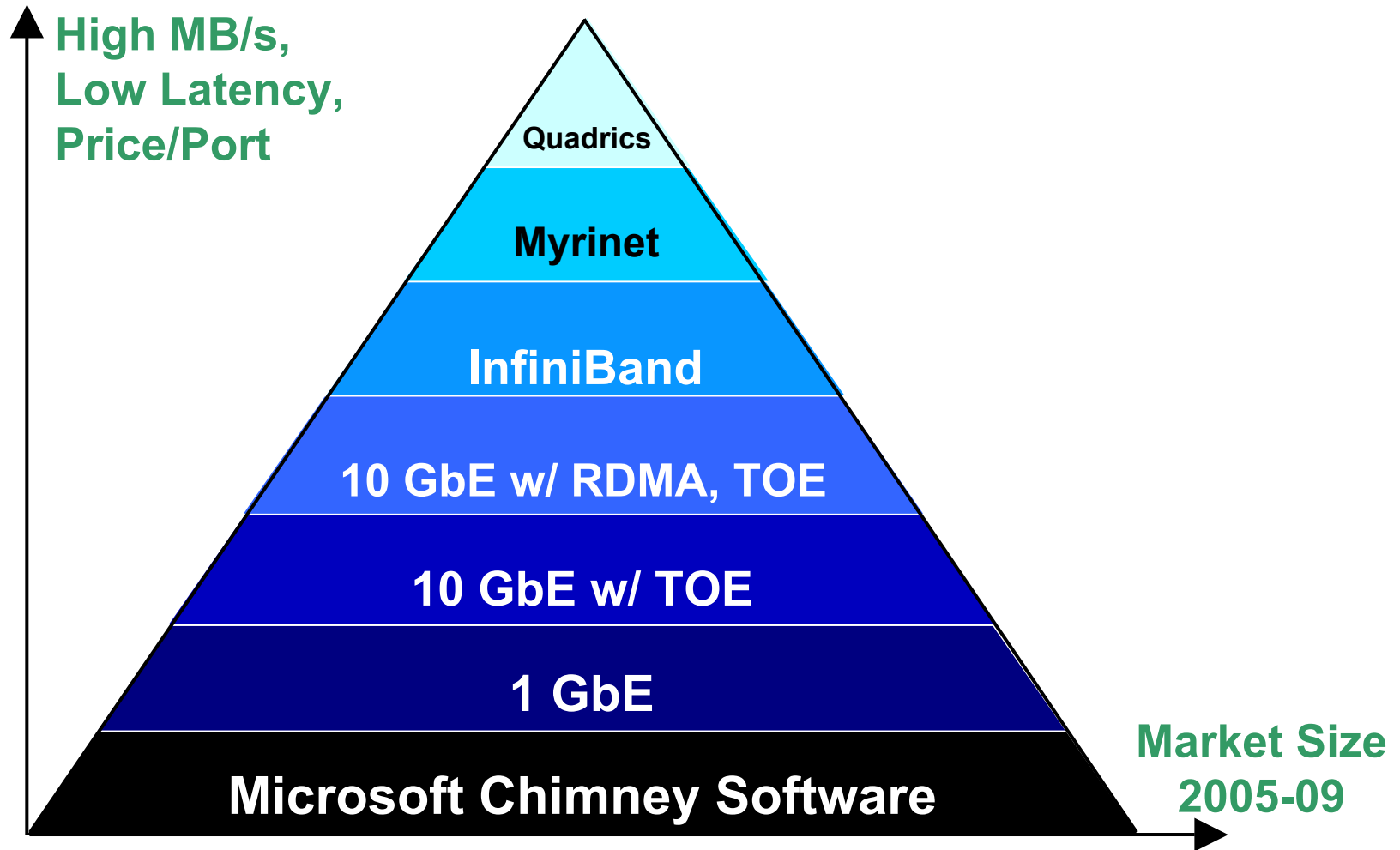
► Blade Servers: Vendor Positioning Index



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(As of 31 March 2005 See IMEXResearch.com
Blade Servers Industry Report 2006 for latest data & valuation metrics)

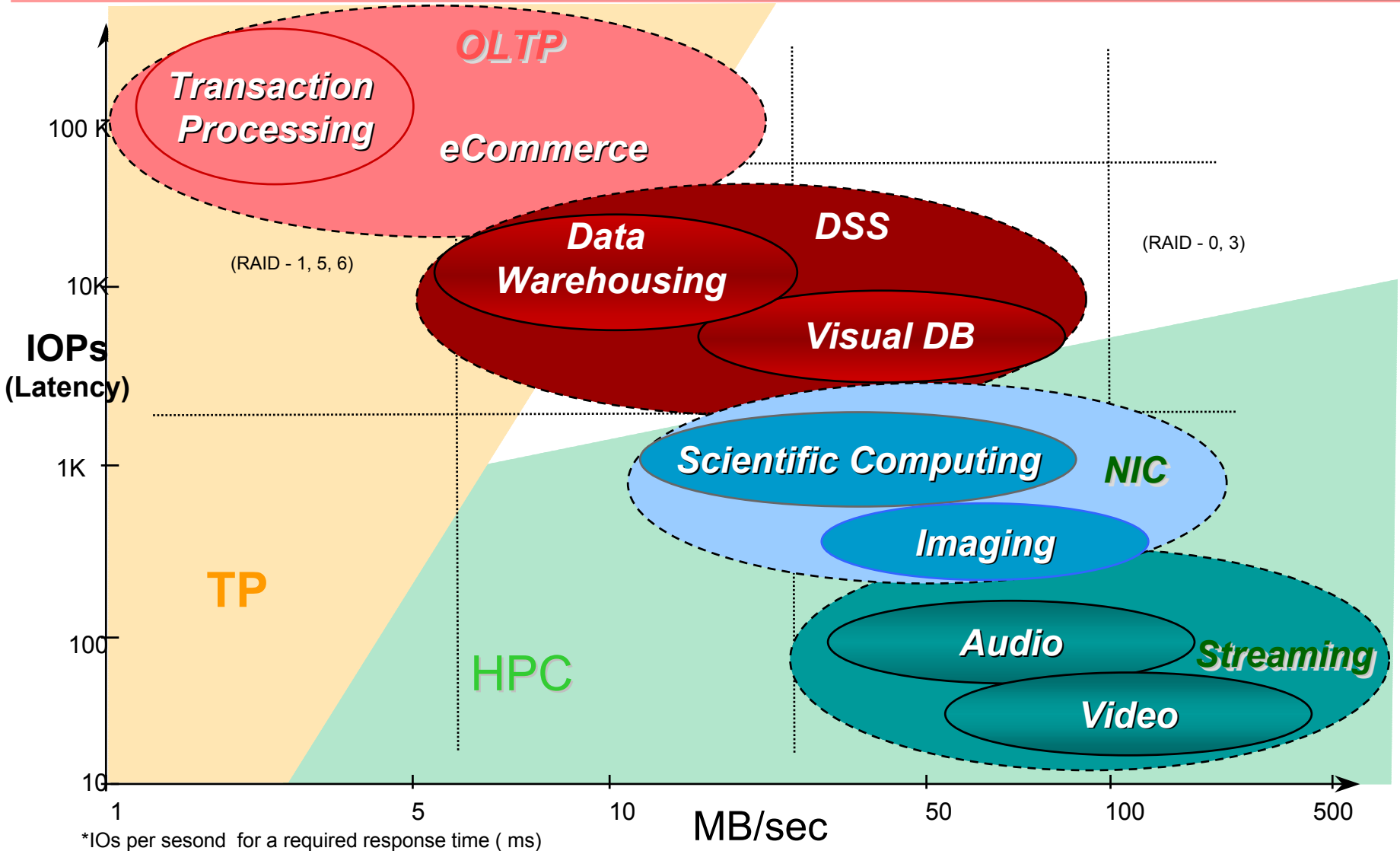
► Interconnect Price/Performance Hierarchy



Source: Blade Servers 2006 Industry Report – © IMEX Research.com

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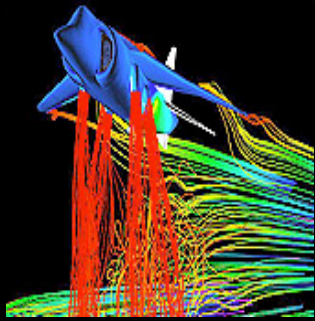
Market Segments by Application



For in-depth product requirements by market segmentation see IMEX Research.com's Blade Servers 2006 Report & Next Generation Data Center Infrastructure 2006 Report

HPC – Academia to Wall St to Hollywood

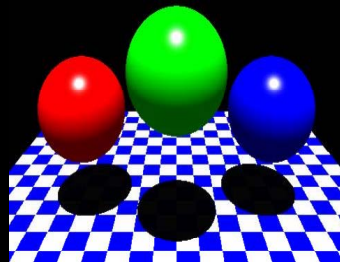
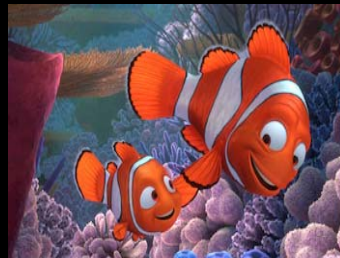
High Performance Computing



▶ 100+ Teraflops

▶ Throughput = 100 GB/s

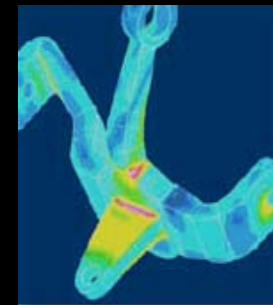
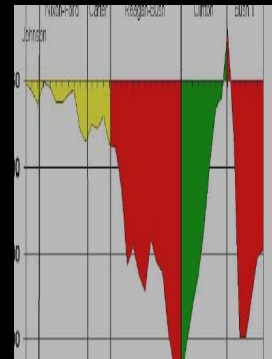
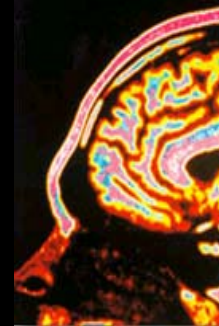
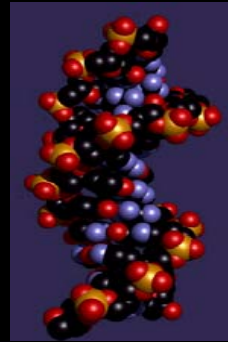
Commercial Visualization



▶ Rendering (Texture & Polygons)

▶ Throughput = 1.2 GB/s

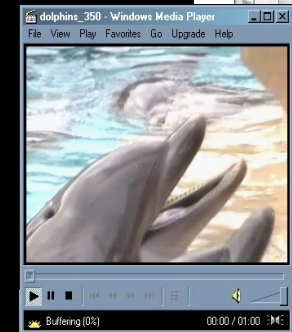
Bioinformatics Decision-Support Systems



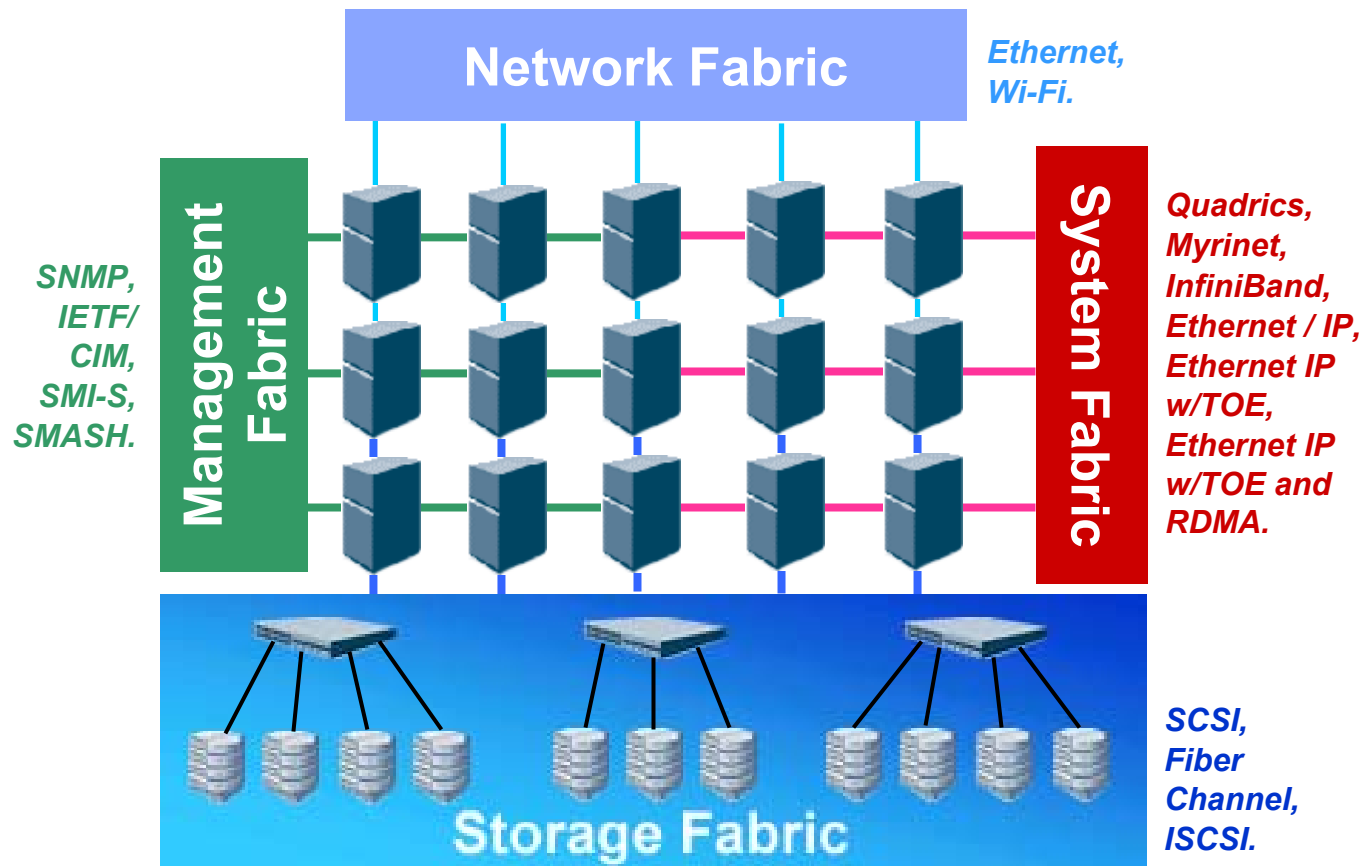
▶ Data rate & capacity

▶ Throughput : DSL/Cable

Entertainment Audio/Video OnDemand



Fabric based Clusters Architecture



Source: Blade Servers 2006 Industry Report & Next Generation Data Center Infrastructure 2006 Report

▶ HPC Architecture & Challenges

Architecture Goals & Criteria

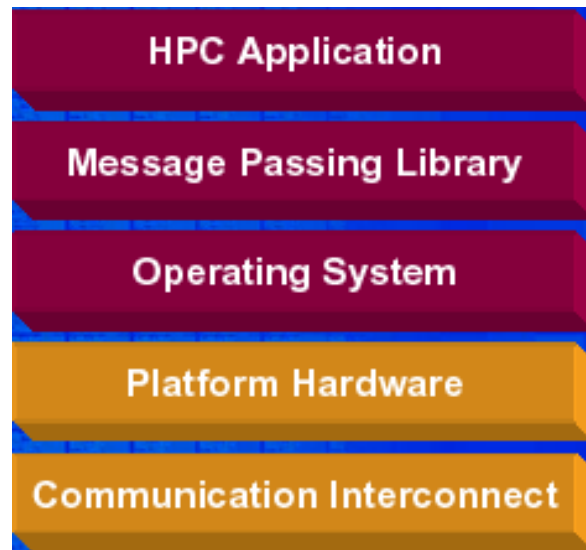
Goals

- Maximize compute time vs. messaging time
- High constant cross-sectional throughput
- Reduce or hide latency

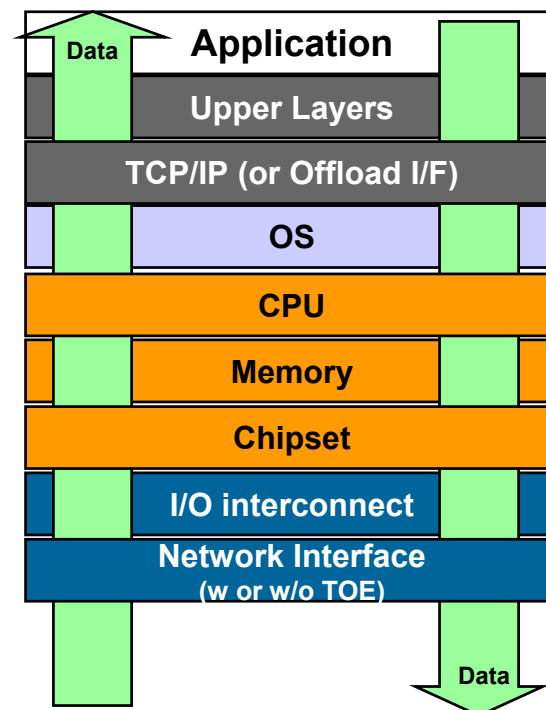
Metrics

- Bandwidth
- Latency
- System Interface
- SW Stack

HPC Communications Stack



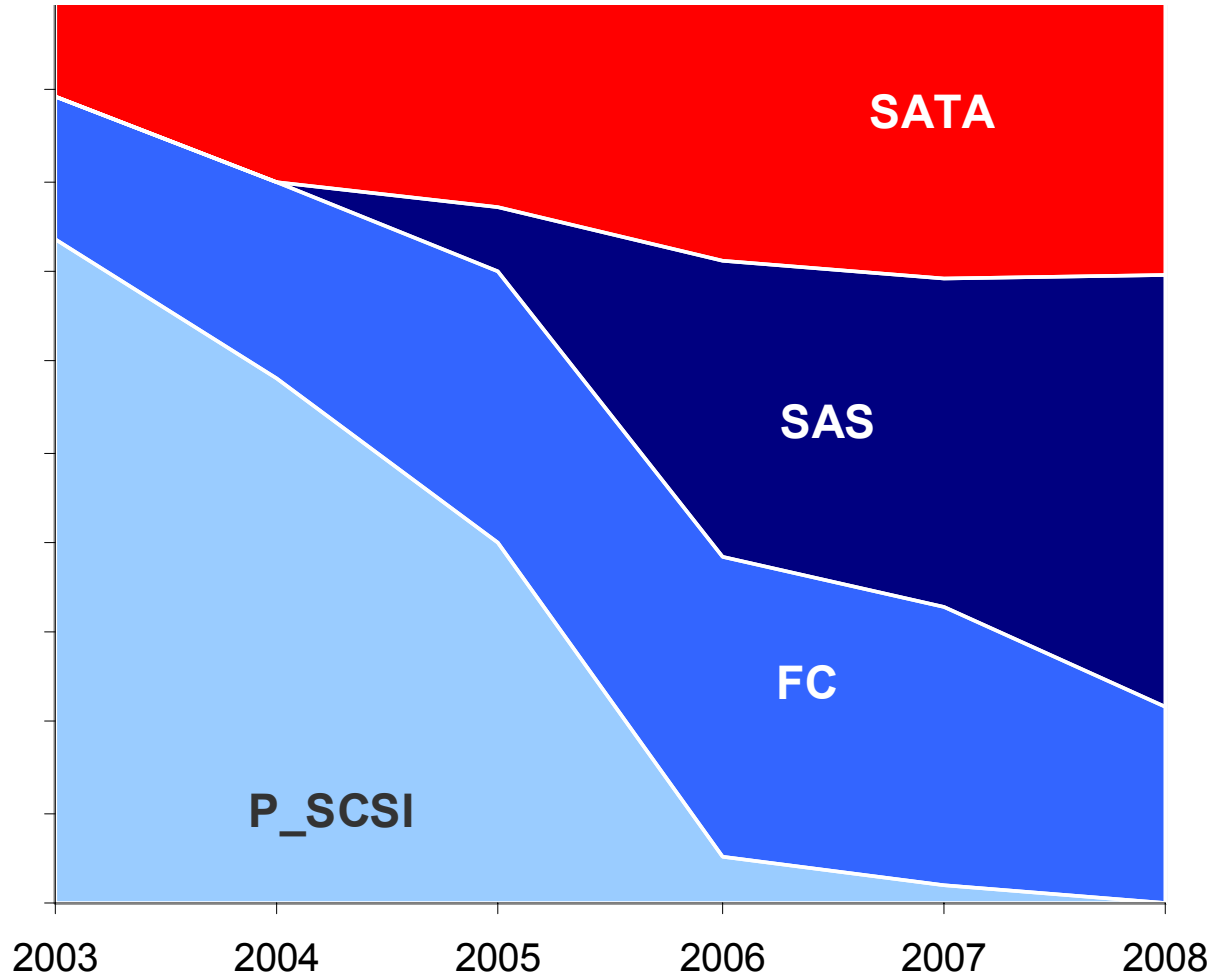
Entire Stack Needs Attention



Challenge is to move data from application to the network and back with minimum latency

▶ Enterprise Market is cost conscious

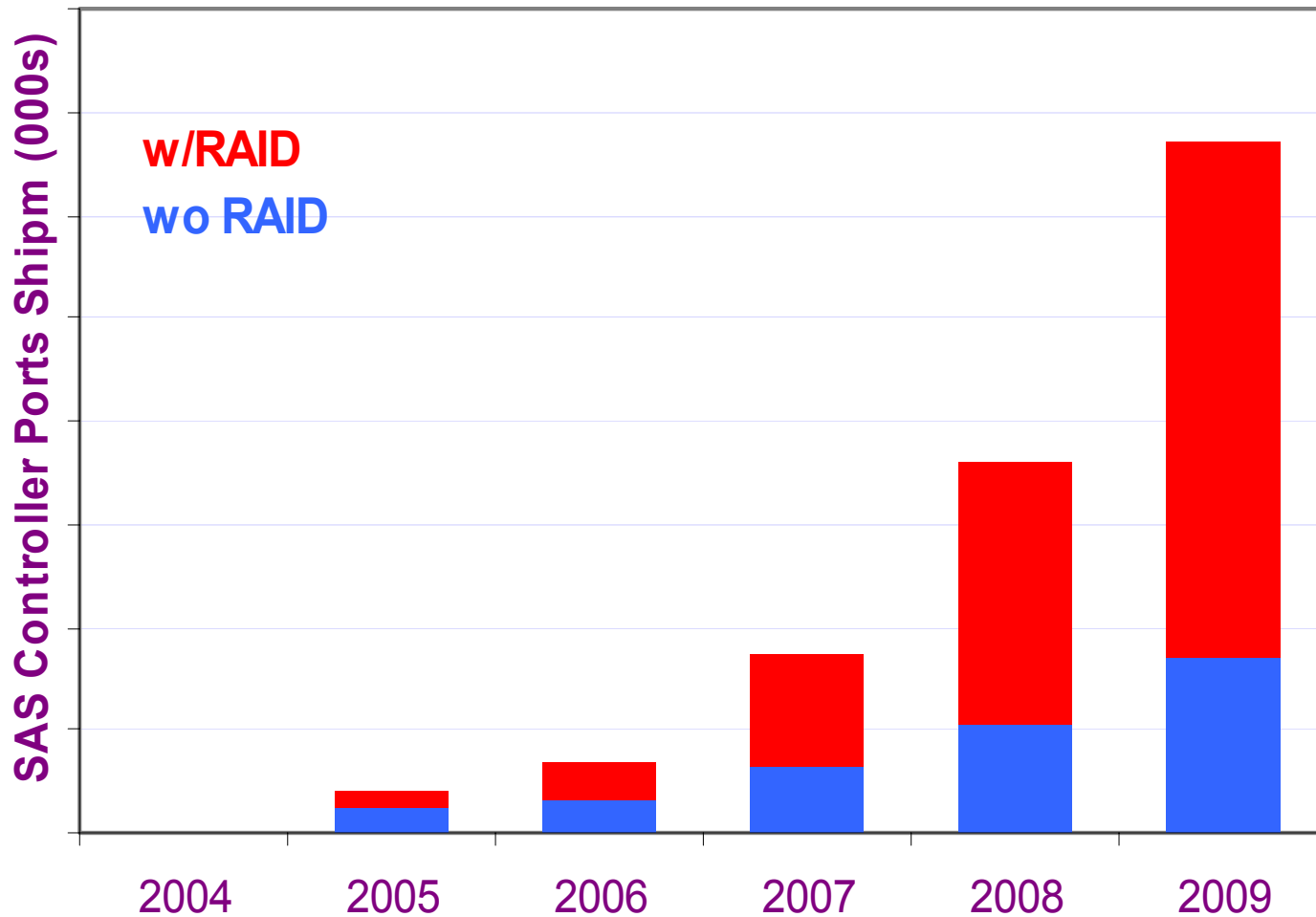
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Source: IP Storage Industry 2006 & SAS/SATA 2006 Industry Report
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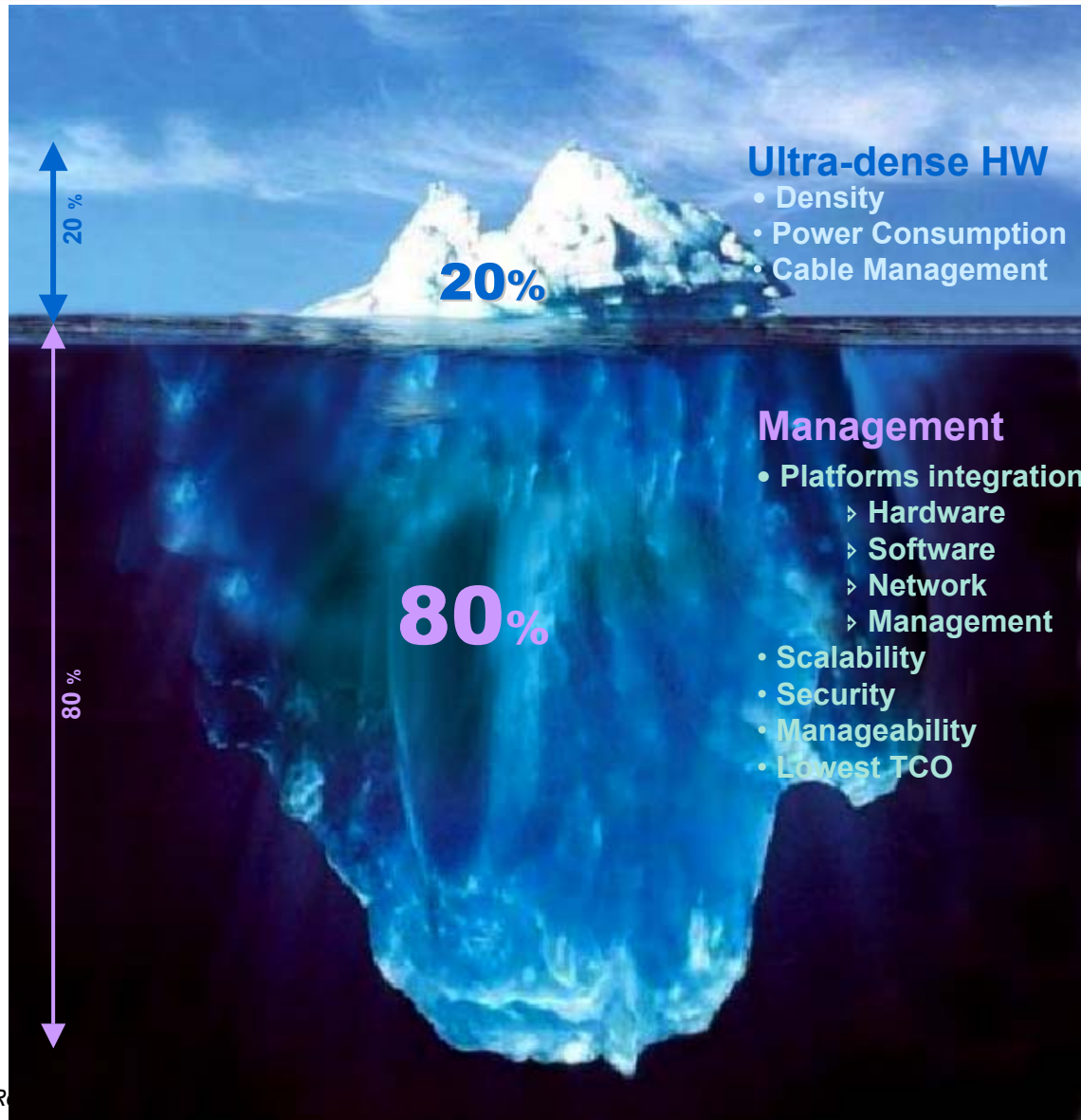
▶ SAS/SATA Market ready to explode

SAS Controller Market

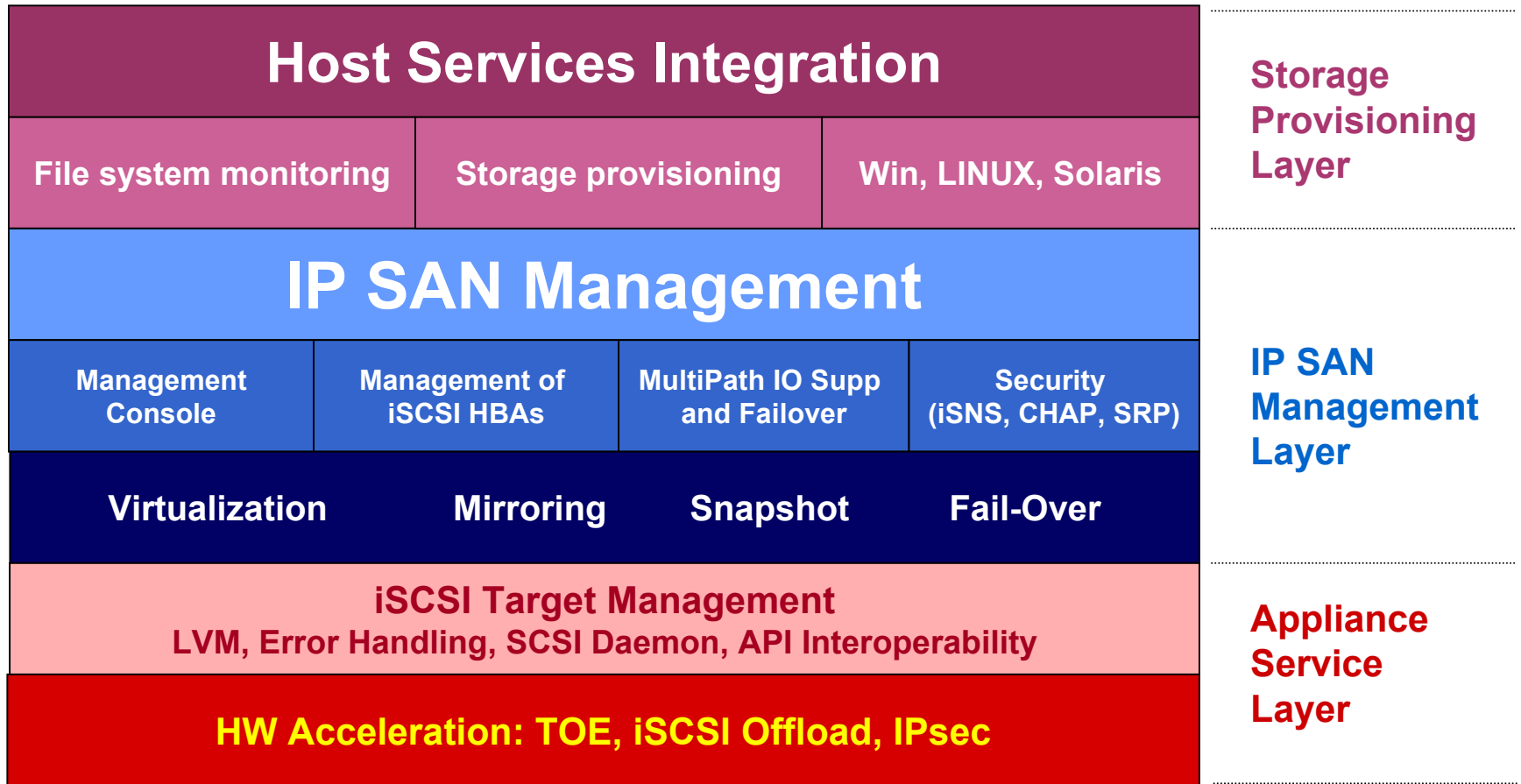


Source: IP Storage Industry 2006 & SAS/SATA 2006 Industry Report
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Management – Blade Servers



► *Future: IP Storage Management on a chip*

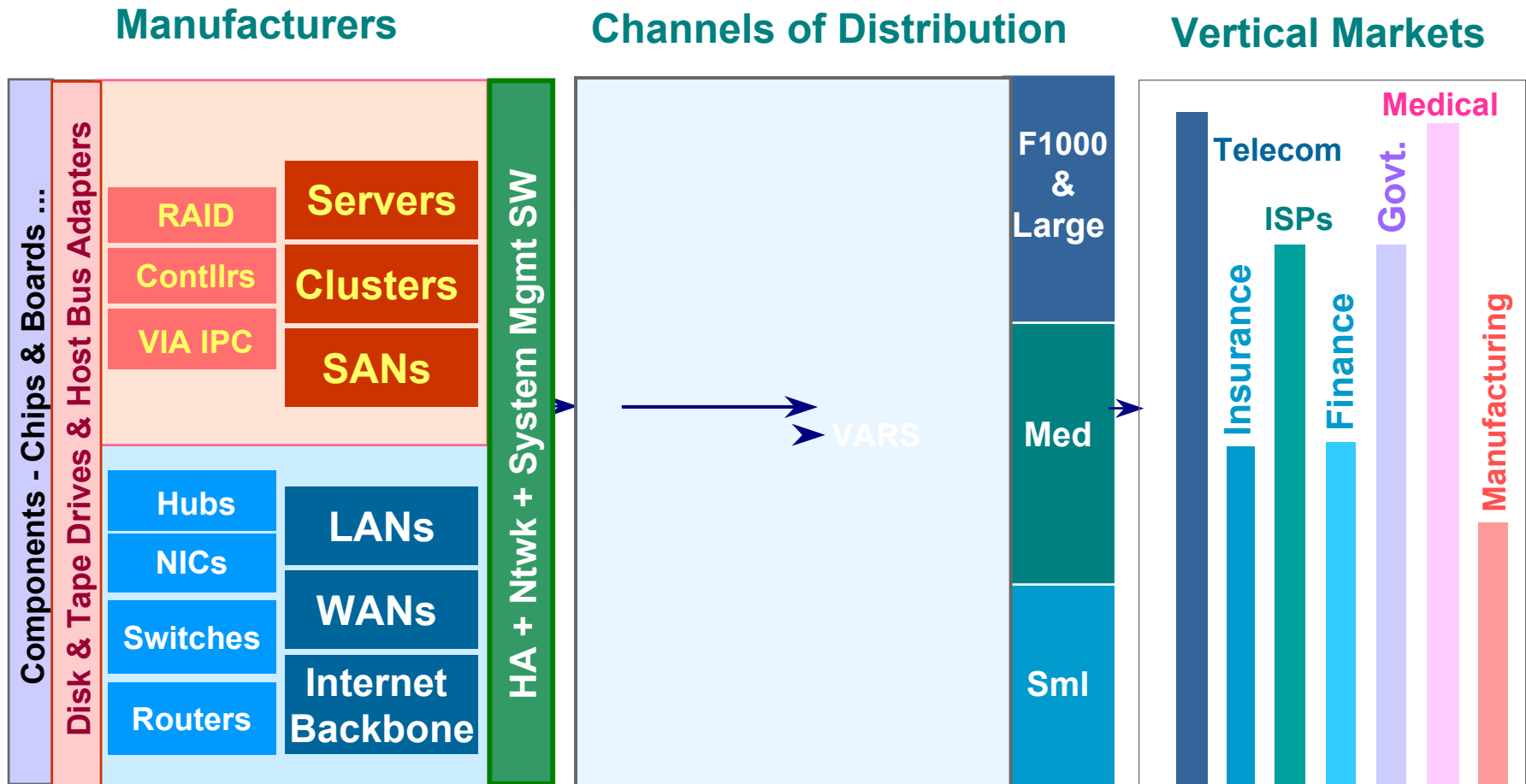


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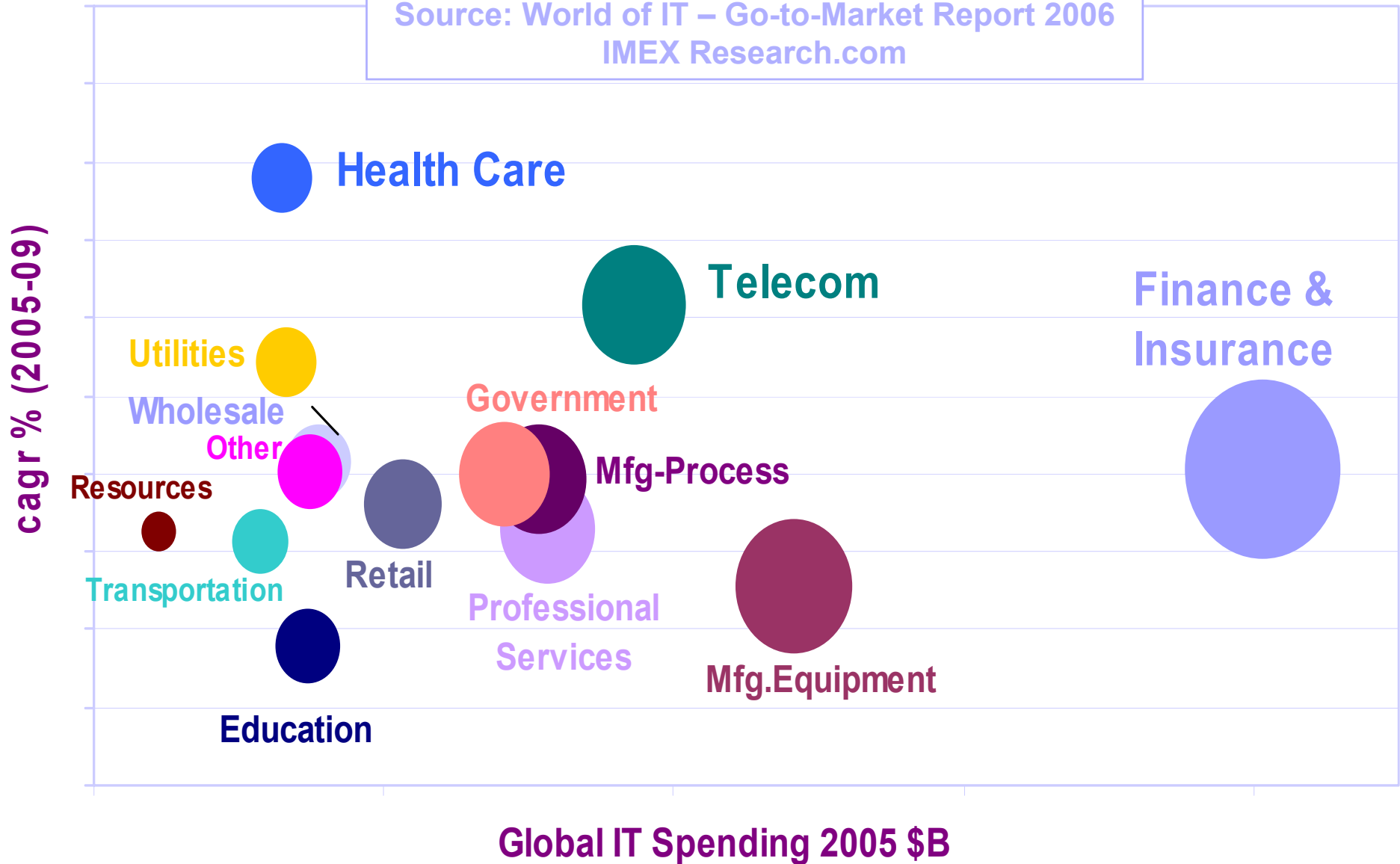
Go-to-market: Channels of Distribution

Industry Structure



Global IT Spending by Verticals

Source: World of IT – Go-to-Market Report 2006
IMEX Research.com





Your way to profitable technology markets.

Industry Keynote Address

Blade Servers: State of the Industry

2006

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