

# Virtualization 2.0: The Next Phase in Customer Adoption



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## State of Virtualization

- Server virtualization is now considered a **mainstream technology** among IT buyers
- IT professionals are **very bullish** on future use
  - 22% servers virtualized today with 45% in 12 months
- Core infrastructure and data center strategies are being turned **upside down!**
- Customer satisfaction is **very high**...but expectations are climbing as customers use the technology to support **business critical applications**
- Virtualization **changes everything** advanced planning is a critical key for success

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## State of Infrastructure Today

### Server Sprawl

- > **41 m** physical servers by 2010 - **700% increase** in 15 years
- > **Ave UT <10% = \$140 bn** in excess server capacity - a 3-year supply

### Power & Cooling

- > **50c** for every \$1 spent on servers
- > **\$29 bn** in power and cooling industry wide

### Space Crunch

- > **\$1,000** /sqft
- > **\$2,400** / server
- > **\$40,000** / rack

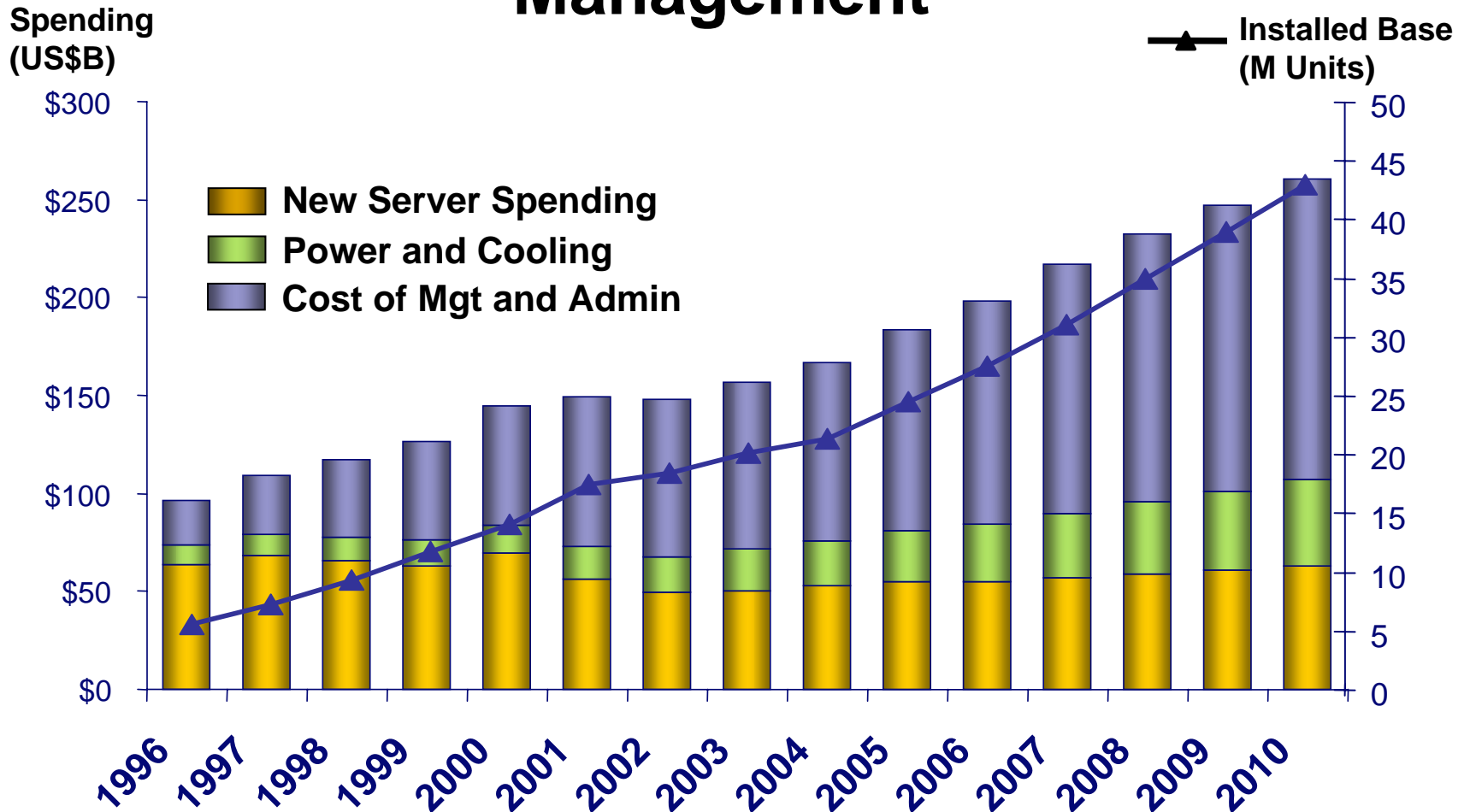
### Operating Cost

- > **\$8** in maintenance for every \$1 spent on new infrastructure
- > **20-30 : 1** server-to-admin ratio

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# Worldwide Server Market: Cost of Management

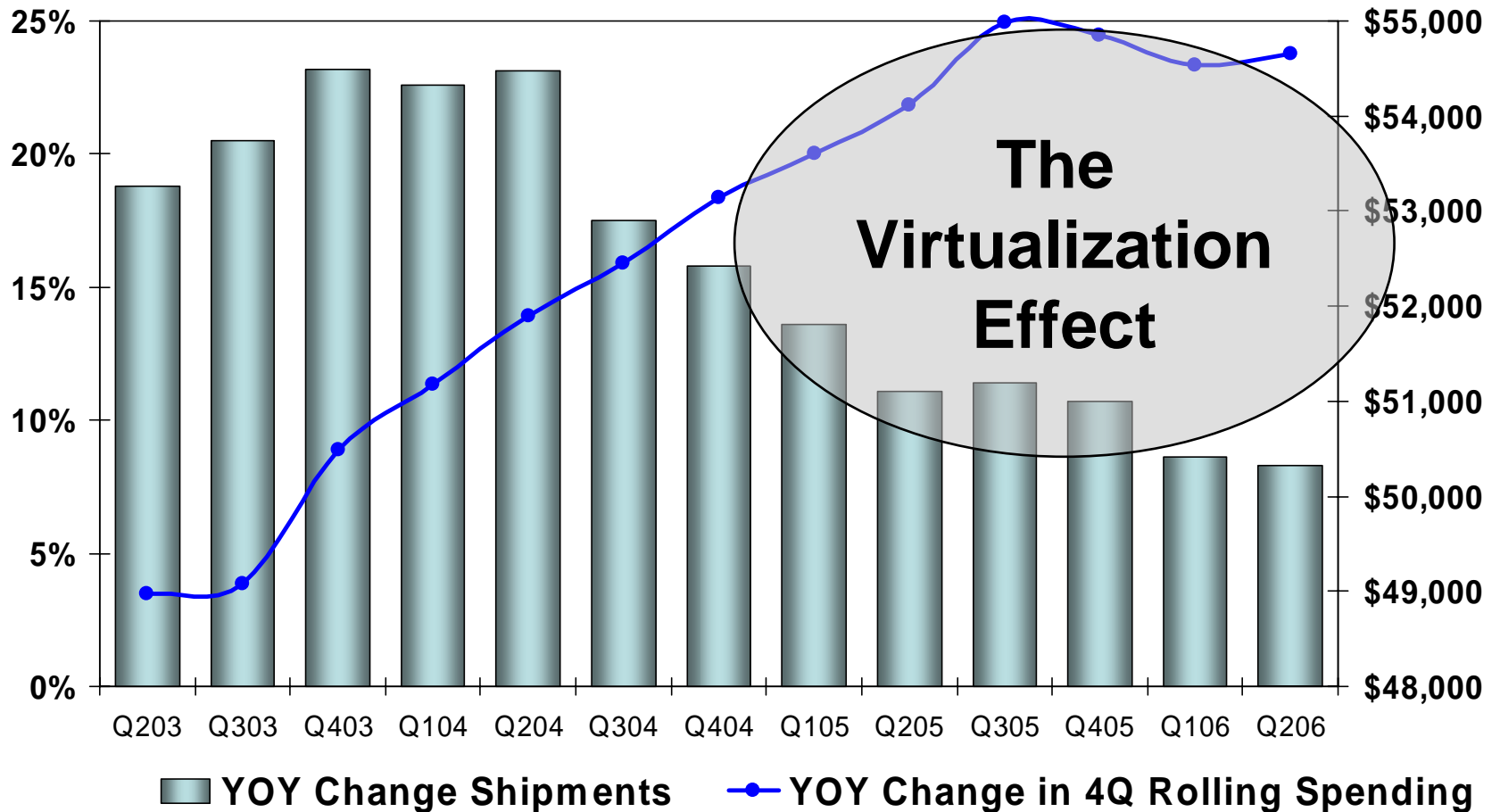


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# The Server Explosion Moderates

% Growth Shipments

4Q Rolling Customer Spending (\$M)



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## Business Case Development

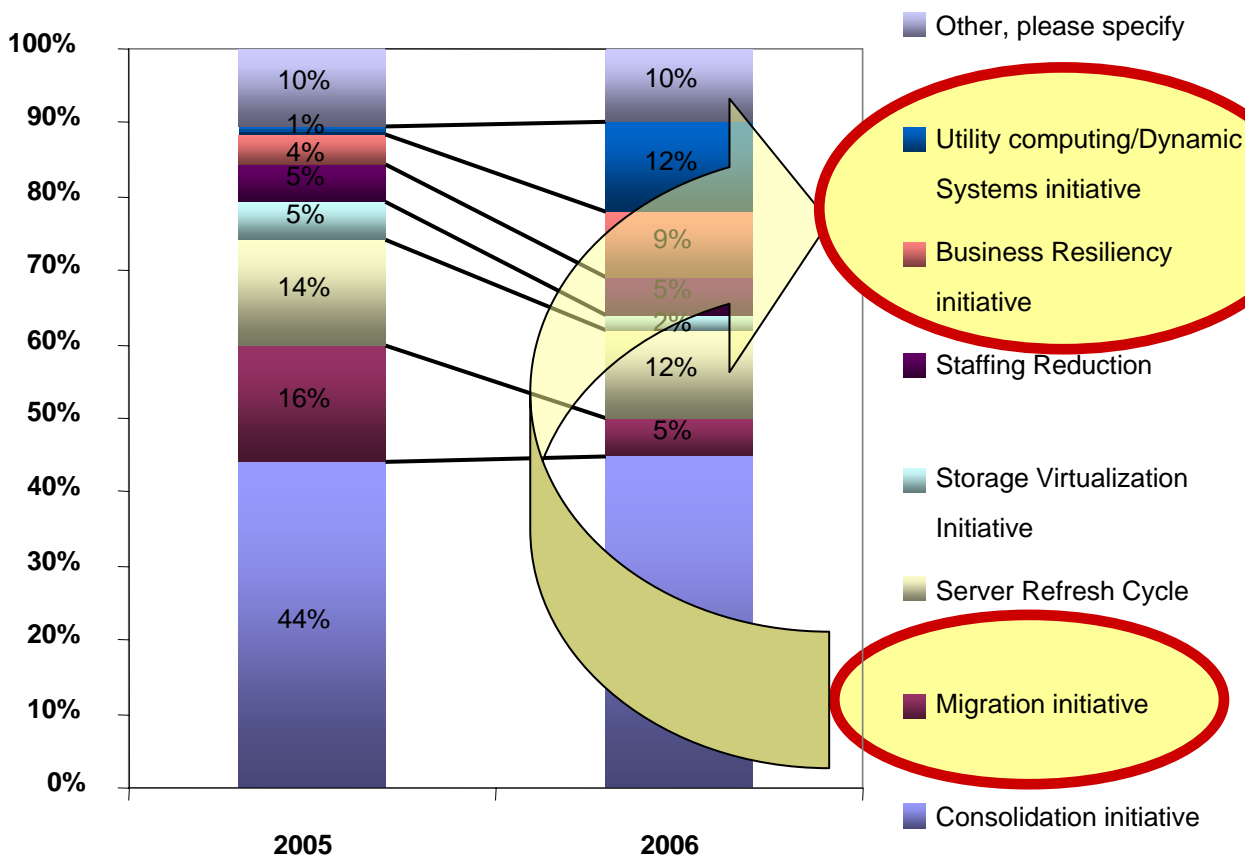
- Today, half of the customer report creating a formal business case to justify their virtualization investments
  - Most believe virtualization **reduced hardware by 20%** of their installed base
- Most of the respondents believe they have **saved upwards of 23% over the last 12 months** by implementing virtualization
  - Hardware Savings, Real Estate, Power and Cooling
- IT savings are almost as likely to be **returned to the business** rather than funding other IT investments.
- Cost of downtime was rarely considered...even through more than **50% of today's virtual servers support critical production workload**
  - Net effect is virtualization is to create more mission critical servers

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# Virtualization: Changing Motivations

- Consolidation remains strong driver for virtual server use
- Users quickly consuming legacy re-host
- Business Continuity and Utility Computing are new growth engines
- These new areas account for 1/4 of spending today!

Type of Project Associated with Virtual Server Purchase



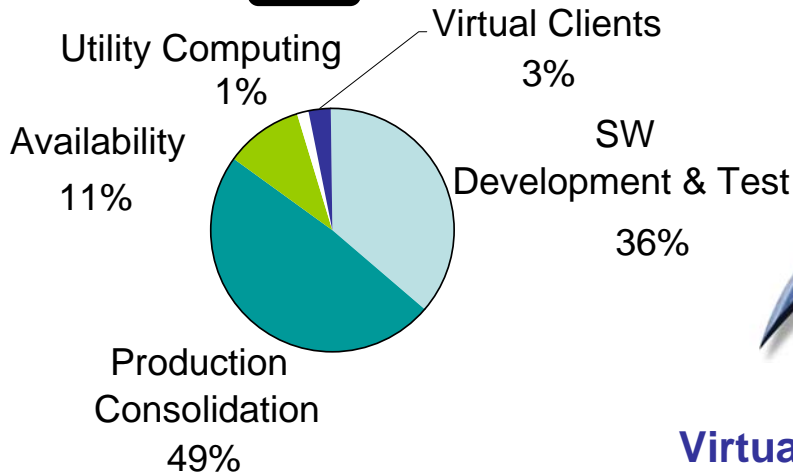
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Source: IDC Virtualization Study, 2006



# The Next Virtualization Milestones

**2006**



**\$1,044M Opportunity**

## Virtualization 1.0

- Encapsulation
- Resource sharing
- Dynamic consolidation

## Virtualization 2.0

- Mobility
- Planned downtime
- Virtual Clients

## Virtualization 2.5

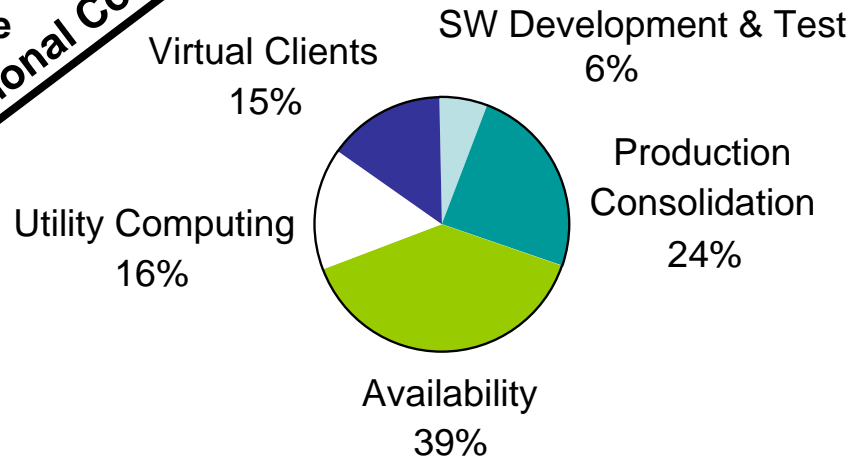
- Unplanned
- HA/DR/back-up
- Workload balancing
- Virtual Clients

## Virtualization 3.0

- Automation
- Service oriented
- Policy based
- Variable costs

**Operational Cost Reduction**

**2011**



**\$3,200M Opportunity**

**CAPEX**

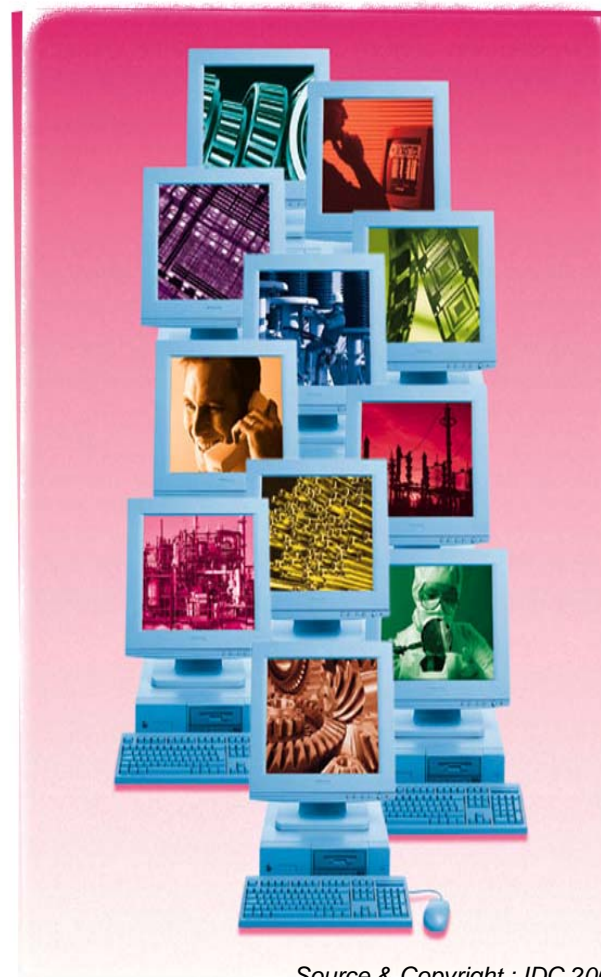
# Emerging Challenges

## *Server Virtualization Hurdles*

- Increasing User Expectations
- Virtual Machine Sprawl
- Image /Change Management
- Coordinated Data Replication
- Application Awareness
- Appliances – where when and how?
- Security at the VM
- Network Configuration
- Usage Metering and Chargeback

Source: IDC Virtualization Study, 2006

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## Key Takeaways

- Virtualization: A great vehicle to improve capital **and operational** efficiencies
- Great tool for a **variety of business issues**
  - Server Consolidation
  - Business Continuity
  - Virtual Clients
  - Creating Resource Pools
- The dynamic data center requires **integration**
  - Coordination of virtualization, failover, data replication, applications, and process automation tools is key



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## Top 10 Virtualization Questions

1. What is it you are trying to accomplish? Client/server consolidation, application isolation, increased business agility, protect more IT assets, or simply reduce hardware costs/improve utilization?
2. Have you done a virtualization skills assessment? Is there a tiger team in place that draws from server, storage and network infrastructure teams?
3. How are you planning to change your IT process both to account for virtualization and to fully capture the benefits?
4. What applications do you want to virtualize? How is performance in a virtual environment?
5. Have you garnered support across the organization – executive, business unit as well as IT teams?

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## Top 10 Virtualization Questions

6. Have you considered your business continuity plans? Virtualization acts to concentrate risk and create more mission critical servers.
7. What applications should be consolidated together? Today this is more art than science – but quality assessment tools are emerging
8. Have you looked at application support and licensing implications? Some apps do not support virtualization or it does not make economic sense to virtualize
9. Do you need live migration? It's a great peace of mind tool but it does have network implications
10. Is your infrastructure ready?

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## Essential Guidance

- **Make sure to do a ROI analysis**
  - **Emphasis hard costs** first; factor in future server growth projections
  - **Server, Power and Cooling** benefits are all well documented
- **Factor in process improvements to reduce soft costs**
  - Don't overlook **cost of downtime**
  - Look to change **server to admin** ratios
  - Agility, provisioning time, **IT responsiveness** can all be improved with virtualization
- **Start small – and look at IT processes from the start**
  - **Implement lifecycle management** practices that include archival otherwise virtual machine sprawl can overwhelm
  - **Test and refine** – both in terms of technology implementation and business case
- **Invest in virtualization skills** – create a **virtualization team**

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