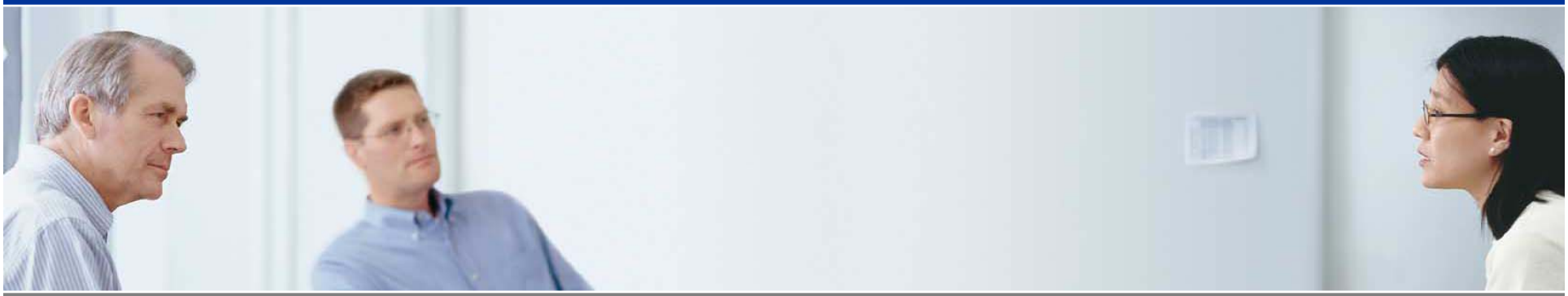
Today's Business Climate & The Role of the Mainframe



John R. Phelps

November 15, 2005

Gartner

Issues

1. What are the big picture issues that Gartner clients are dealing with?
2. What do we see as the current status of the IBM mainframe?
3. How is the IBM mainframe evolving to overcome today's challenges and sustain long-term viability?

CIO Management Priorities Focus on Contributing to Growth and Efficiency

To what extent is each of the following CIO actions a priority for you in 2005?	Rank 2005		Rank 2004	Rank 2003
Delivering projects that enable business growth	1	▲	18	**
Linking business and IT strategies and plans	2	▲	4	6
Demonstrating the business value of IT	3	▼	2	2
Applying metrics to IT organization and services	4	▲	14	**
Tightening security and privacy safeguards	5	▲	6	10
Improving business continuity readiness	6	▲	12	**
Improving the quality of IT service delivery	7	▼	1	8
Consolidating the IT organization and operations	8	▼	3	**
Developing leadership in the senior IT team	9		*	*
Improving IT governance	10	▲	11	3

▲ ▼ Selected change in ranking compared with 2004

***** New question for 2005
** New question in 2004

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What are the “Big” Server Concerns?

Managing an increasingly complex infrastructure

Balancing sharing with protecting information

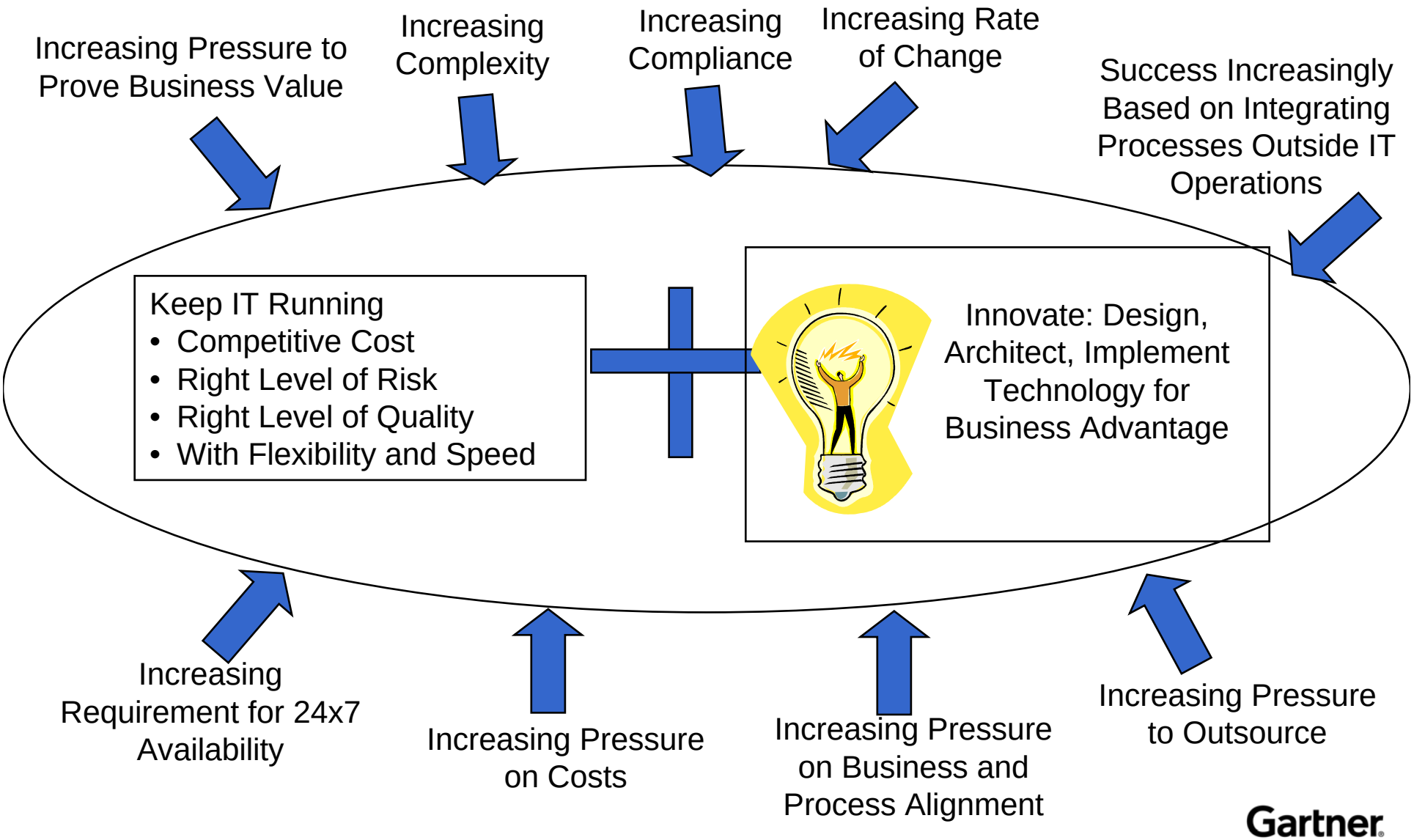
People costs outstripping hardware/software costs

More demanding service levels

More pressure to deploy quicker

Demand exceeds budget growth

IT Operations and Infrastructure Management Challenges



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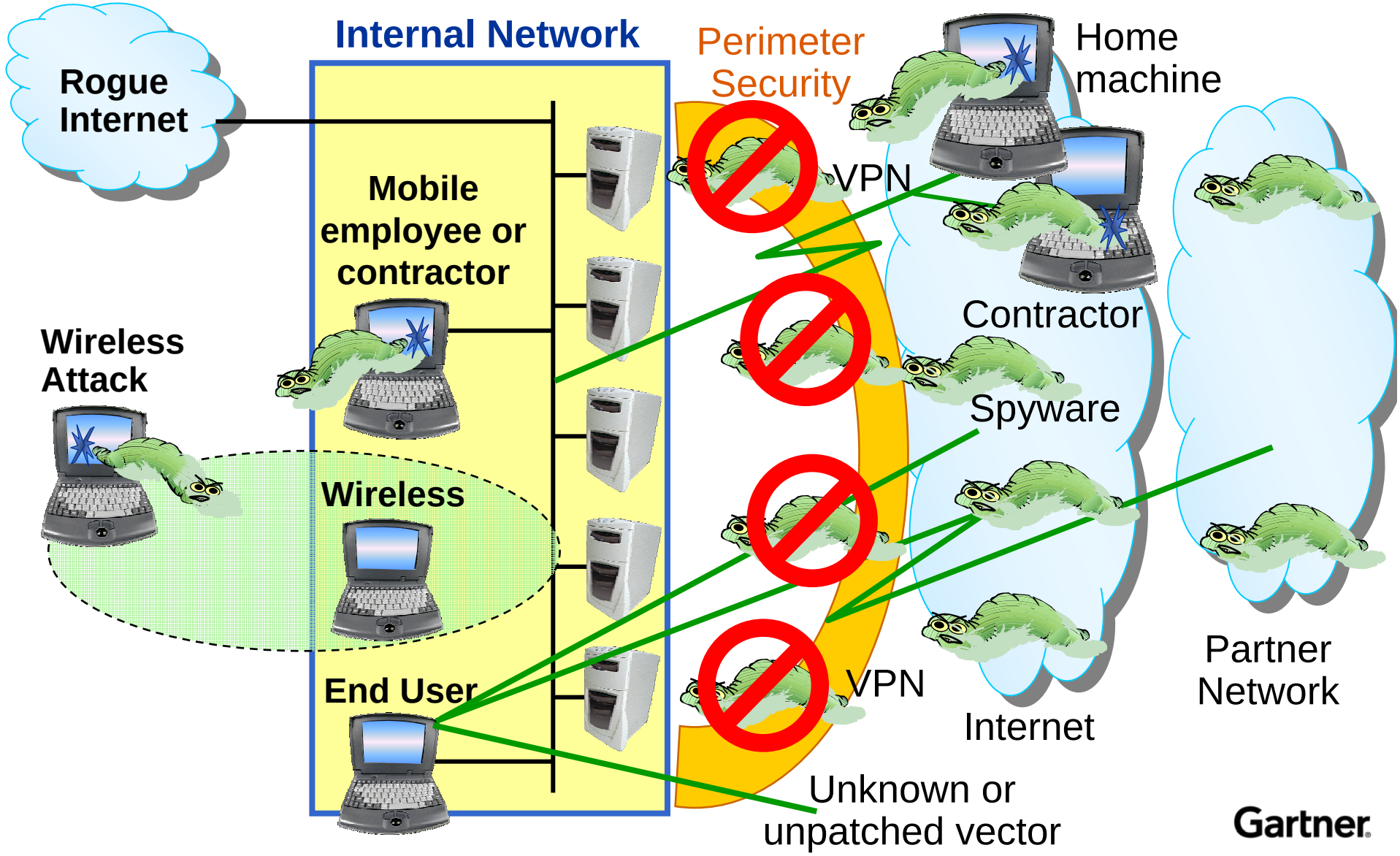
More Bad Stuff Bypassing Perimeter Security



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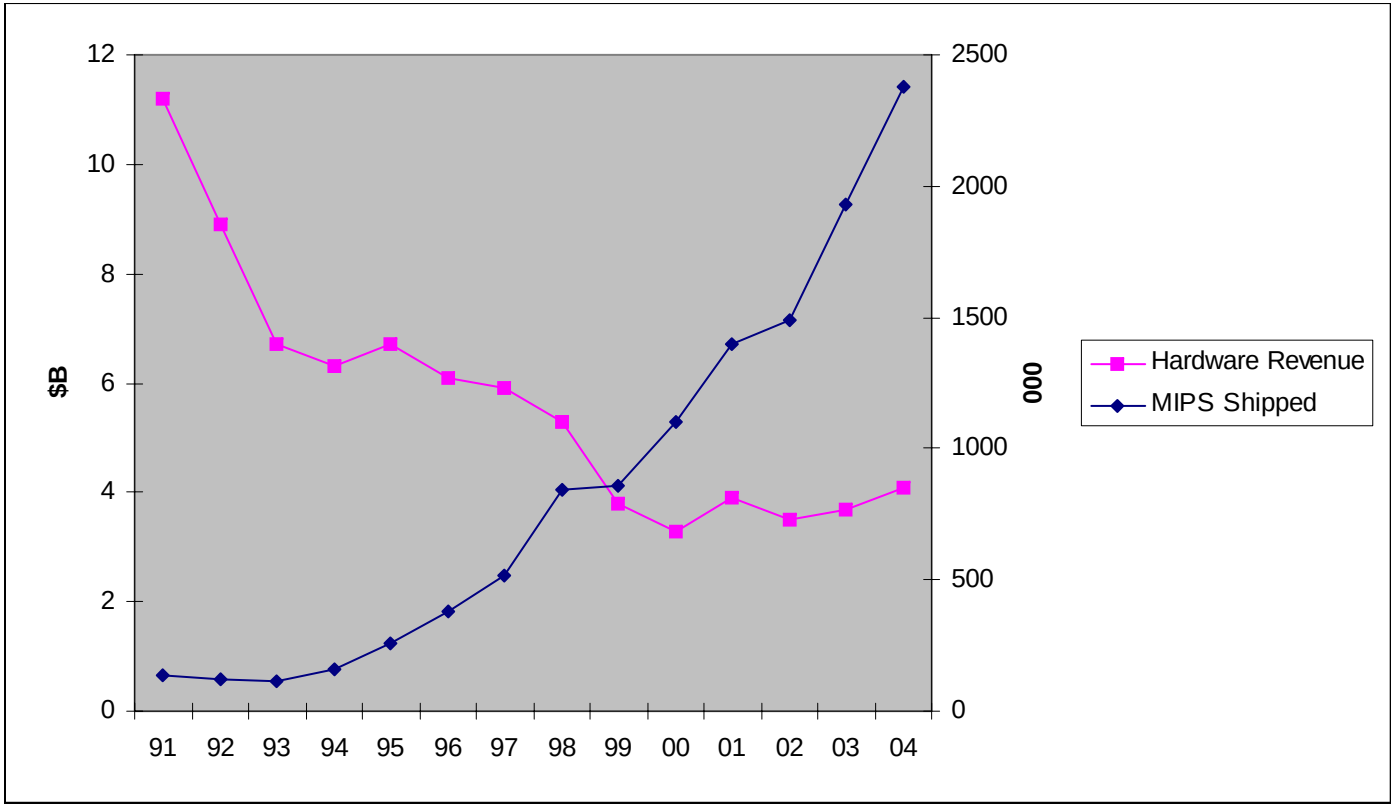
Issues

2. What do we see as the current status of the IBM mainframe?

IBM Has Stabilized and Revitalized the Mainframe Platform

IBM Mainframe Trends



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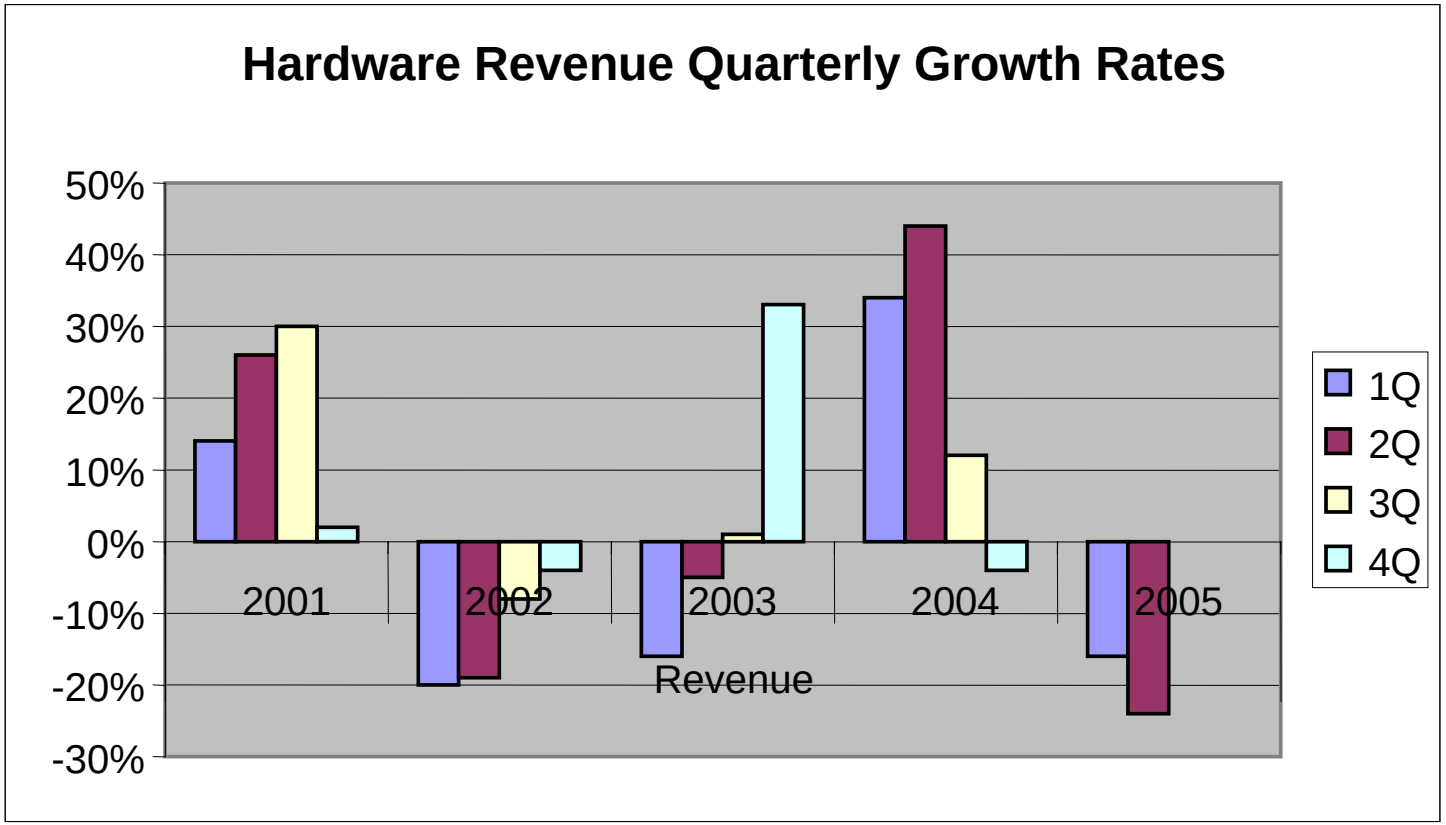
Product Cyclicality Still Raises the Long-Term Viability Question In the Press



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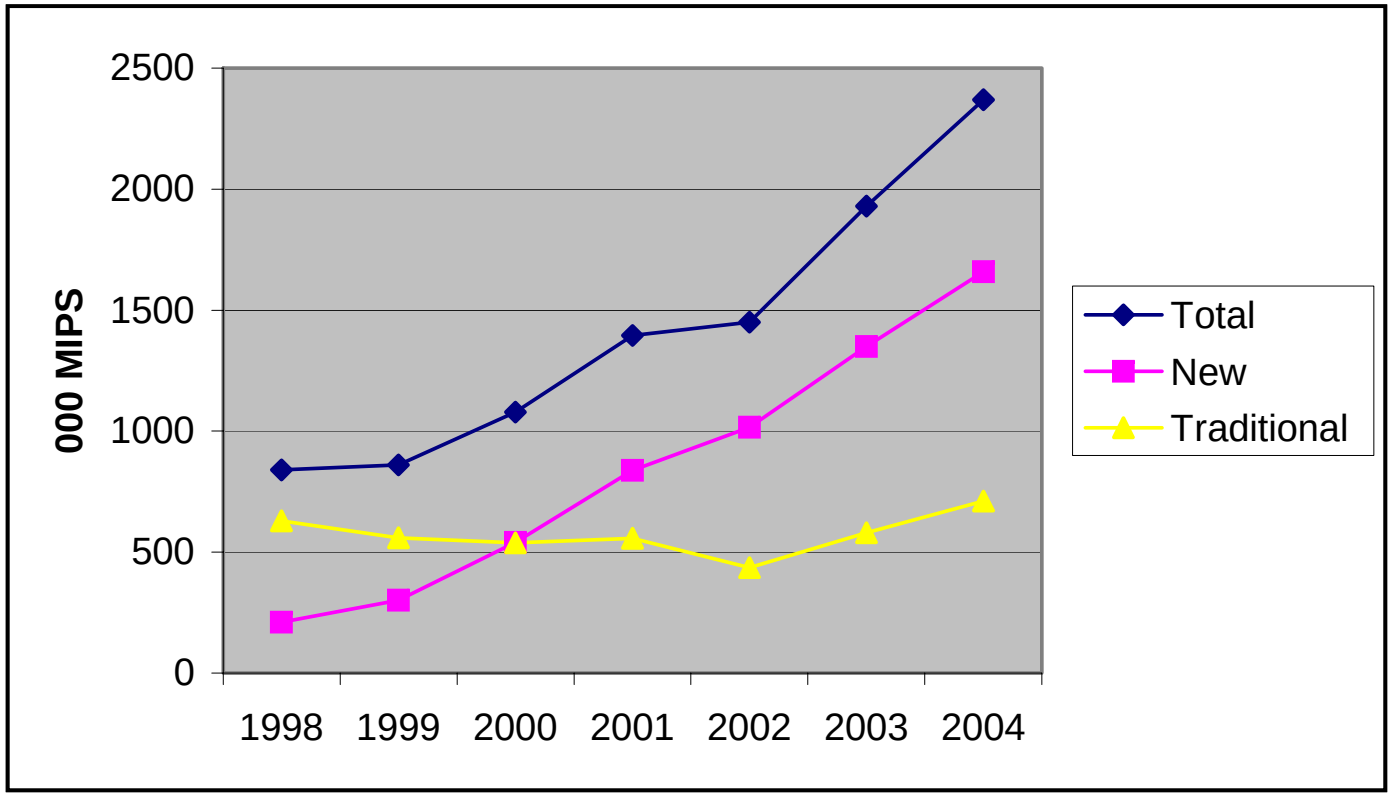
The Evolving Mainframe Market

IBM MIPS Shipped



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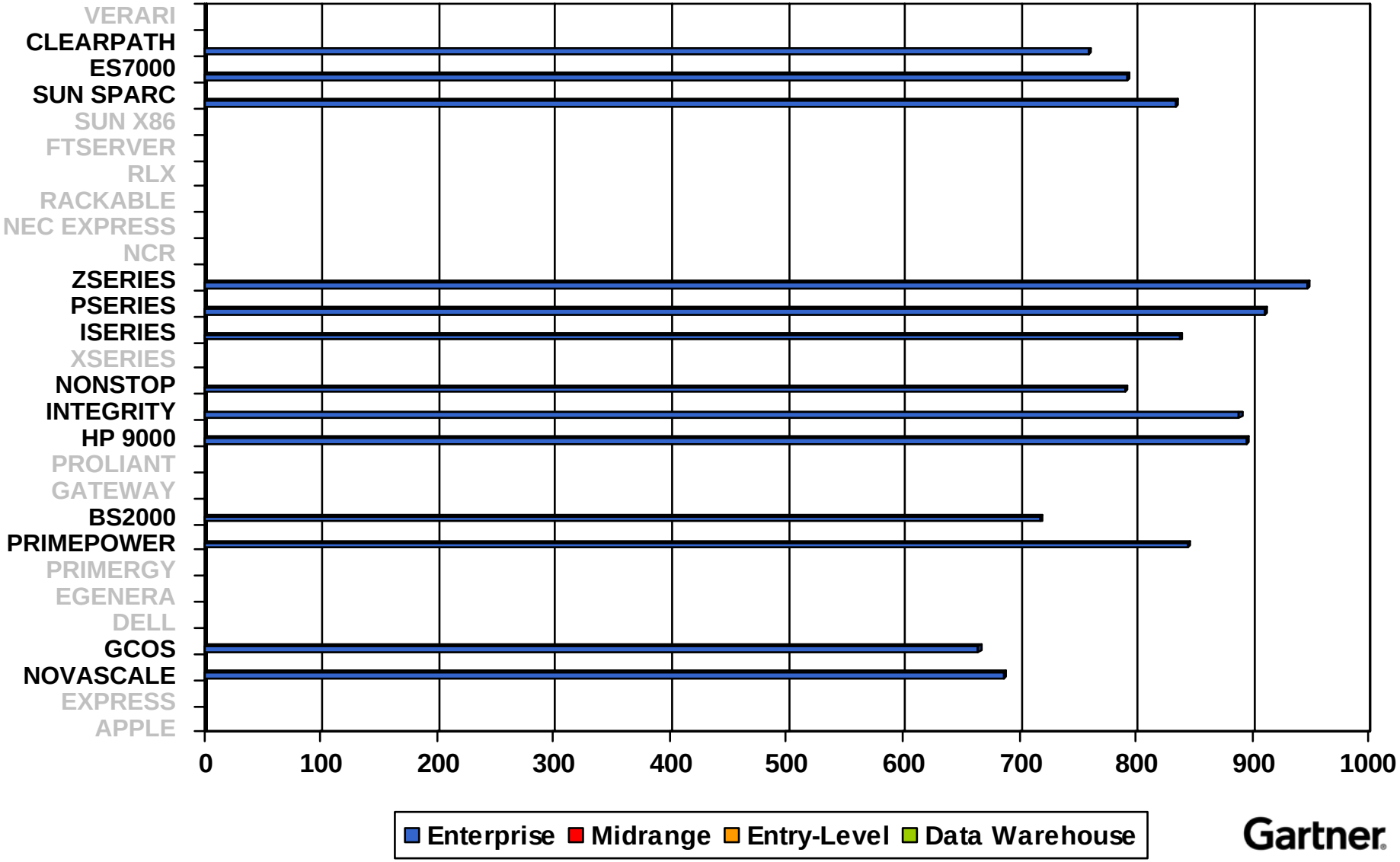
Why Does It Make Sense for IBM to Continue to Invest in the Mainframe Platform

- Marketshare
- A profitable hardware business
- A profitable software business
- A profitable services business
- Key differentiator for the most demanding of customers
- Technology pass through
- Door opener for other IBM divisions

The IBM Mainframe Will Remain a Relevant Player in IT Infrastructure

Based on September 2004 Results

Weighted Scores



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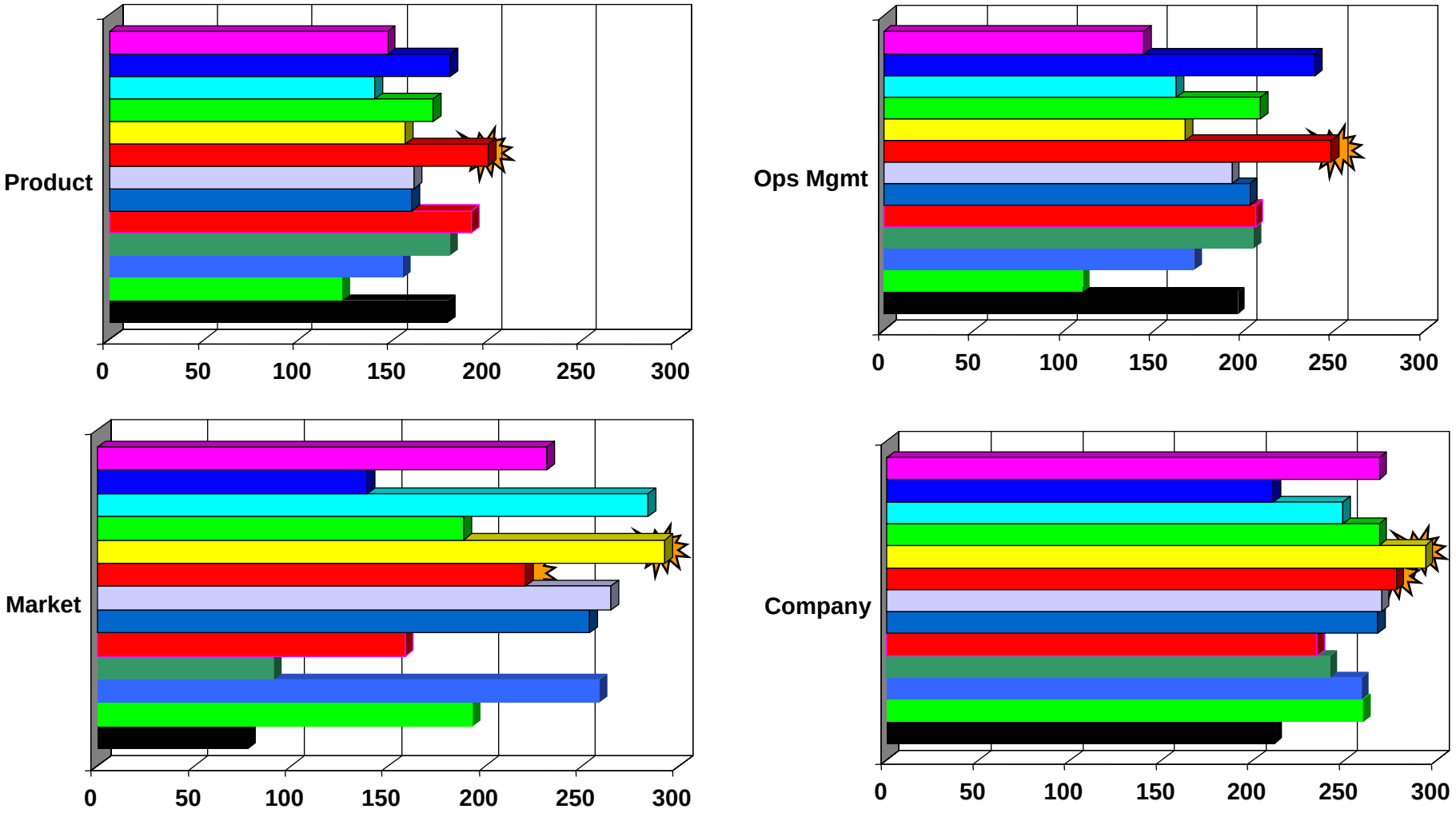
The IBM Mainframe Leads in Product and Operational Management

Based on September 2004 Results

Weighted Scores



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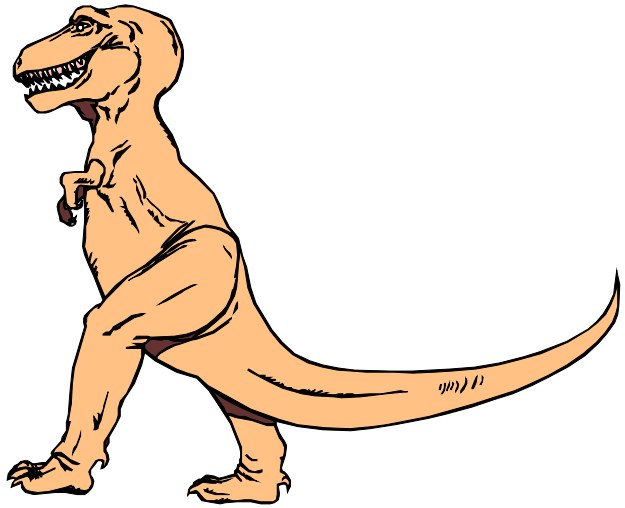
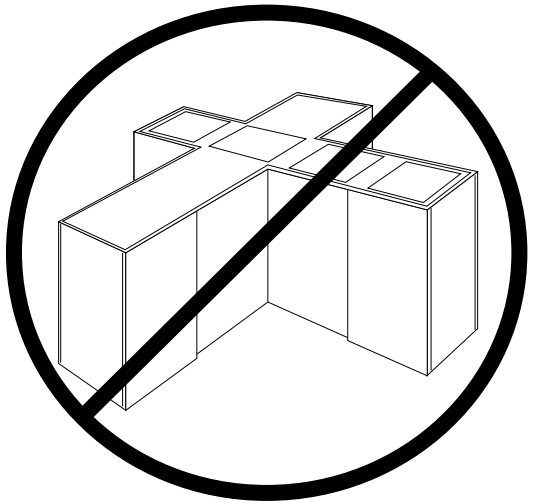
Issues

3. How is the IBM mainframe evolving to overcome today's challenges and sustain long-term viability?

What is Your View of the Mainframe?





Mainframes:
“We’re back and we’re [illegible]”

Mainframes:
“Never buy one again”

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What Has Made the Mainframe Unique?

High Capacity
+ Processor
+ I/O bandwidth
+ Scalability

Reliability, Availability and Serviceability
+ Hardware
+ Software

Operational Disciplines
+ 24x7
+ Disaster/recovery
+ Security
+ Backup/recovery

Systems Management

Mixed Workloads

Security
+ Hardware
+ Software
+ Integrity

Perceived Shortcomings
- High hardware costs
- High software costs
- Proprietary operating system
- Not user-friendly

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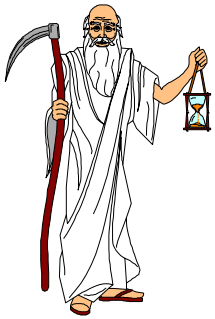
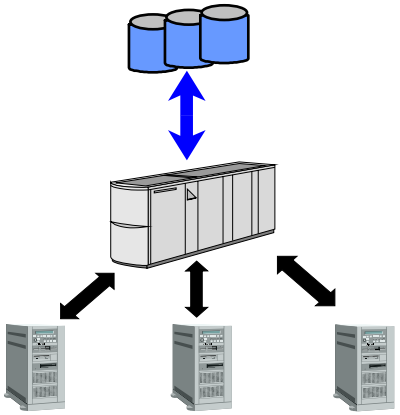
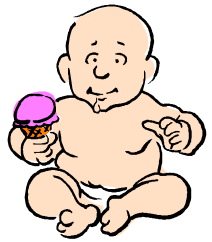
What is the Role of The Mainframe?



Mainframes: **“Perfect for legacy applications”**



Mainframes: **“The ultimate data server”**



Mainframes: **“Perfect for new emerging applications”**

Mainframes: **“The ultimate consolidation platform”**

Mainframes: **“The mission-critical server”**

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If the Mainframe Is the 'Best' Technology, Why Doesn't Everyone Use It?

- Application portfolio or ISV enthusiasm
- Total cost of ownership (TCO)
- Graying of the mainframe staff
- Perceived complexity of system
- Desire for use of open standards
- Public perception that the mainframe is obsolete
- Other platforms becoming "good enough"

Linux on the IBM Mainframe Report Card

- Growing number of ISVs/applications
- Relatively small but growing presence
  - Primarily within mainframe base
  - Infrastructure & Websphere apps
  - Starting database applications
- Continues to build on Linux market momentum
- Continuing to improve mainframe price/performance
- Capacity planning and granularity issues need to be addressed

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Is Java Another Growth Factor for the Mainframe?

zSeries Application Assist Processor

Status

- zAAP ships started in June 2004
- Need z990/z890/z9 and z/OS 1.6
- Need JVM/SDK 1.4.1

Potential Benefits

- Reduced hardware and software costs
- Use as consolidation systems
- Increased application portfolio
- Helps cover any performance issues
- Lower costs for middleware that uses Java

Challenges

- Maturity of Java on other platforms
- Need for a wider breadth of applications
- Capacity planning
- Java performance on the mainframe vs. other platforms

zAAP Economics

Example 1

2000 MIPS, 20% JAVA

$000	Before	After
Hardware	4,000	3,325
Annual maintenance	300	250
z/OS suite	1,300	1,125
IBM Totals	**$5,600**	**$4,700**

Example 2

z990-303 Engine Upgrade

$000	General	zAAP
Hardware	750	125
Annual maintenance	55	17
z/OS suite	175	
IBM Totals	**$980**	**$142**
ISV Cost		**?**

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IBM Mainframe Software Pricing: An Ongoing Evolution

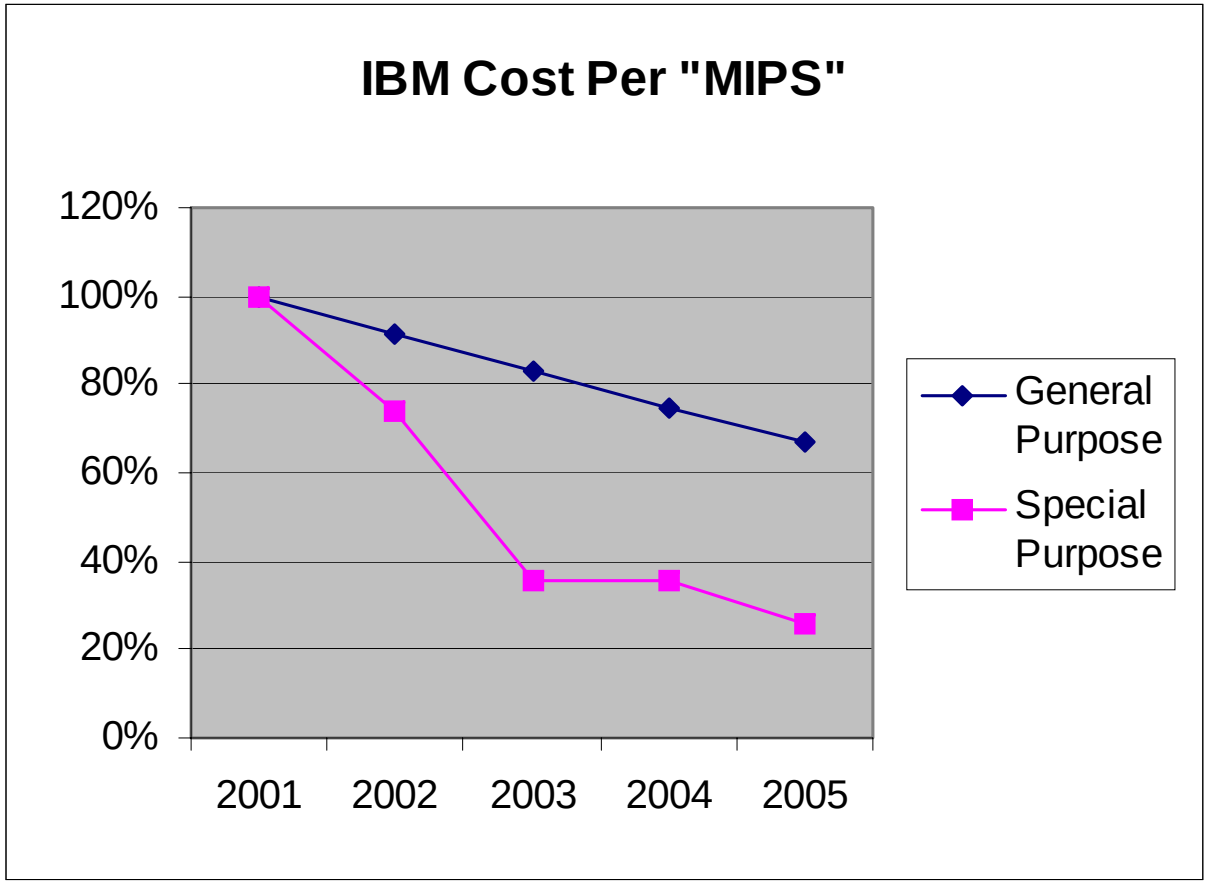
- 1993: Measured usage
- 1994: PSLC introduced
- 1998: SOI on usage pricing
- 1998: NALC
- 1998: "IBM will simplify the number of pricing options"
- 1998 – 1999: More PSLC levels
- 1999: GOLC
- 2000: Tools and utilities initiative launched; WLC introduced
- 2002: zELC and z/OS.e
- 2002 – 2003: More WLC levels; "pricing" MSUs for the z990
- 2004: z890 MSUs; tWLC
- 2005: z9 pricing MSUs

New technologies create serious challenges for traditional capacity-based software pricing models

Other platforms face new challenges for software pricing

- Multi-core Processors
- Consolidation
- Distributed workload management
- Capacity on Demand
- Virtual Machine and Partitions
- Rapid Provisioning and Migration Software

Mainframe Price/Performance Trends — Two Paths Diverge



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What Makes the Mainframe Attractive for New Workloads?

- Incremental cost of ownership
  - Software costs for incremental general purpose MIPS can be trivial
  - Special purpose MIPS fence off additional costs
  - Hardware pricing – no incremental cost to technology refresh
  - Often no additional staffing required

The Aging Mainframe Community — Last One Out Shut off the Lights?

- The industry concern about an aging mainframe skills set is a legitimate concern
- Solving the problem is not a short-term fix
- IBM is putting a great deal of money into a multi-year effort by:
  - Enhancing its internal skills, which will aid deployments short-term
  - Providing training and education for customers
  - Continuing to recruit, port and enable partners and software vendors
  - Leveraging reference architectures to build better industry solutions
  - Working at the grass-roots level is the long-term solution
    - Get 20,000 mainframe trained resources in market by 2010
    - Over 150 colleges in IBM's Academic Initiative
    - Create "zNextGen" working with SHARE

Recommendations for Addressing the Skill Set Issue

- Get Your strategic planners, architects and HR involved!
- Explore cross-training opportunities with IBM and your current (non-mainframe) employees
  - Courses
  - Conferences
- Work your local universities
  - Alert/recruit them to the opportunity
  - Get in the hiring loop

What Makes the Mainframe a Credible Option for Today's Emerging Workloads

- Virtualization
- Mixed workloads with very different characteristics
  - Capable of high utilization
- Sophisticated management capabilities
- High availability
- Security
  - Inherent in platform within system
  - High-performance Encryption capabilities
- BC/DR
- Openness
  - Special purpose engines

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Recommendations

Mainframes will remain a good fit where

- High levels of the "ities" are needed
- Applications need to tie to legacy data
- TCO is for all workloads, not just one

- Carefully evaluate new initiatives such as Linux and zAAP
- Look at all costs, including so-called hidden costs, when comparing platform solutions
- Take advantage of IBM’s efforts to address the skills issue
- **The IBM mainframe remains a viable platform for mission-critical applications**

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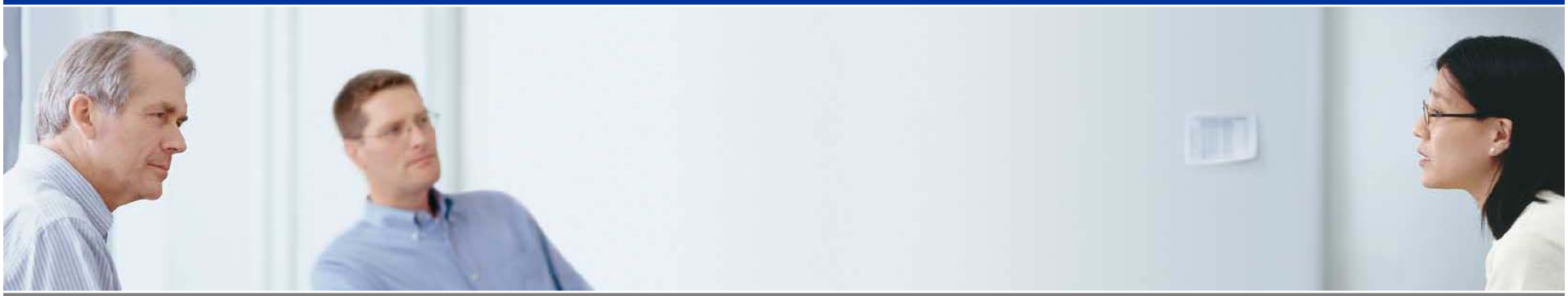

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