

IBM Systems & Technology Group

IBM Mainframe Strategy The System z Advantage

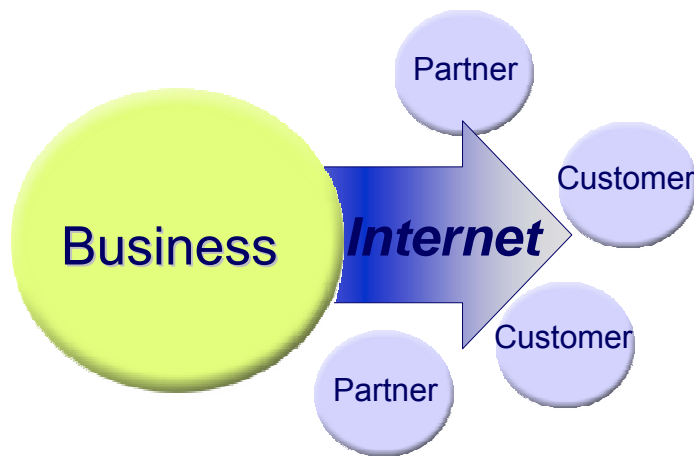
Terri Virnig
IBM System z Strategy and Marketing



IBM Systems Strategy and the Mainframe

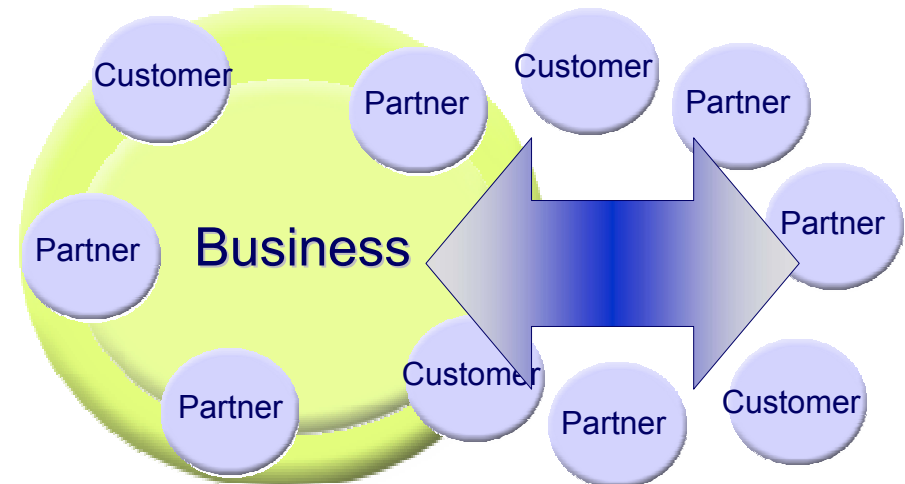
IT environments are constantly changing

Online transaction processing






- **Siloed**
- **Vendor defined**
- **Point-to-point**

On Demand collaborative processing



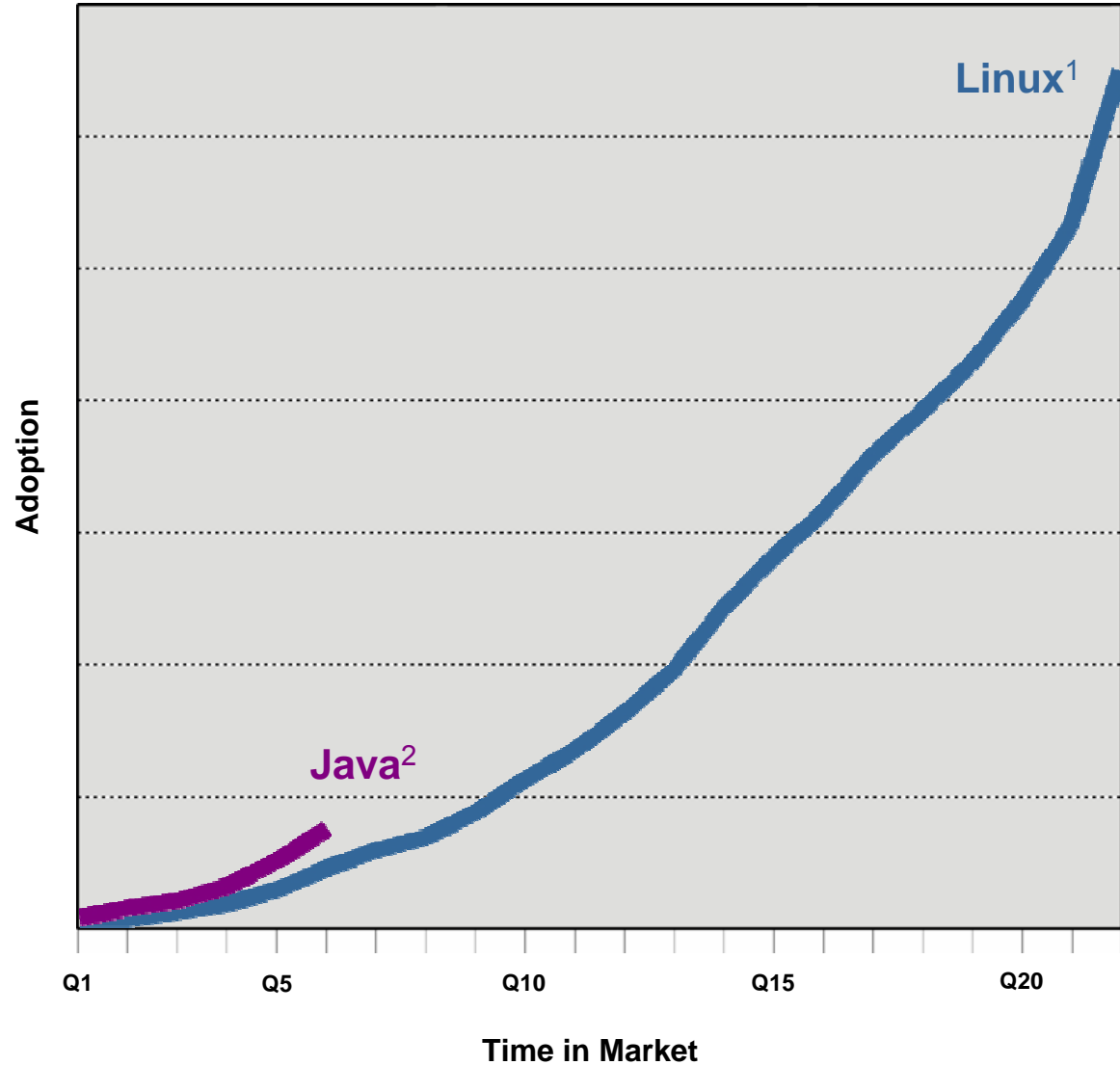
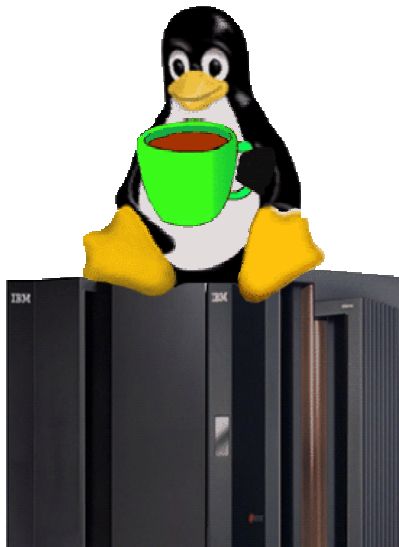
- **Shared**
- **Open/Standards based**
- **Dynamic**

On Demand Business – emerging infrastructure requirements

<i>Virtualization</i>		Virtualized systems resources Virtualized management Virtualized view into the ecosystem
<i>Openness</i>		Free flow of information Not locked in or tied to any one technology Commitment to maintaining “choice”
<i>Collaboration</i>		Secure access by ubiquitous devices Integrated systems Utilization of new data types

IBM Mainframe

- Virtualized
- Open
- Collaborative



IBM's Systems Strategy and the mainframe

Virtualize Everything

Commit to Open

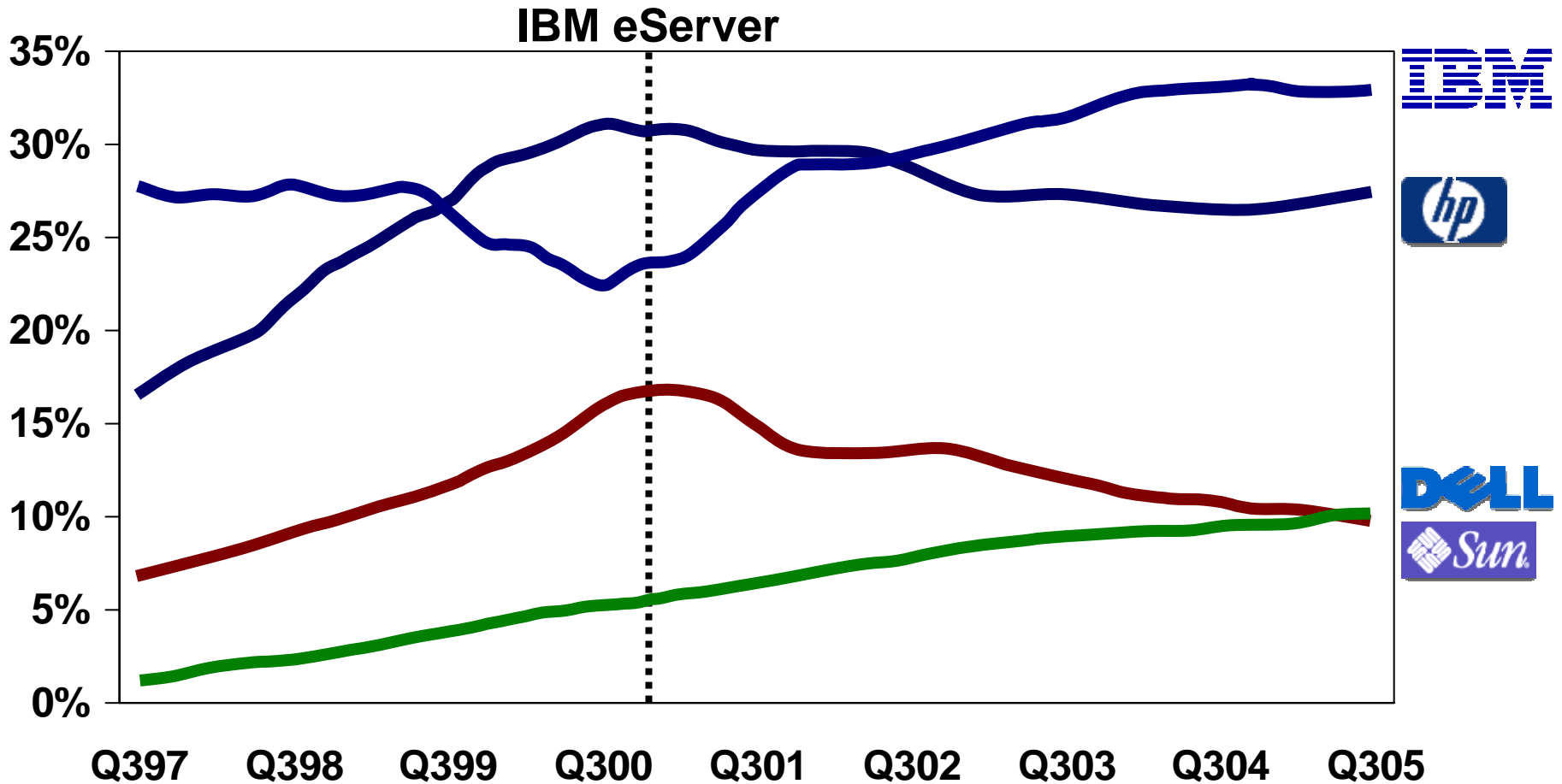
Collaborate to Innovate



- Reliability
- Dynamic Logical Partitioning
- On/off Capacity On Demand
- Automation
- Virtualization

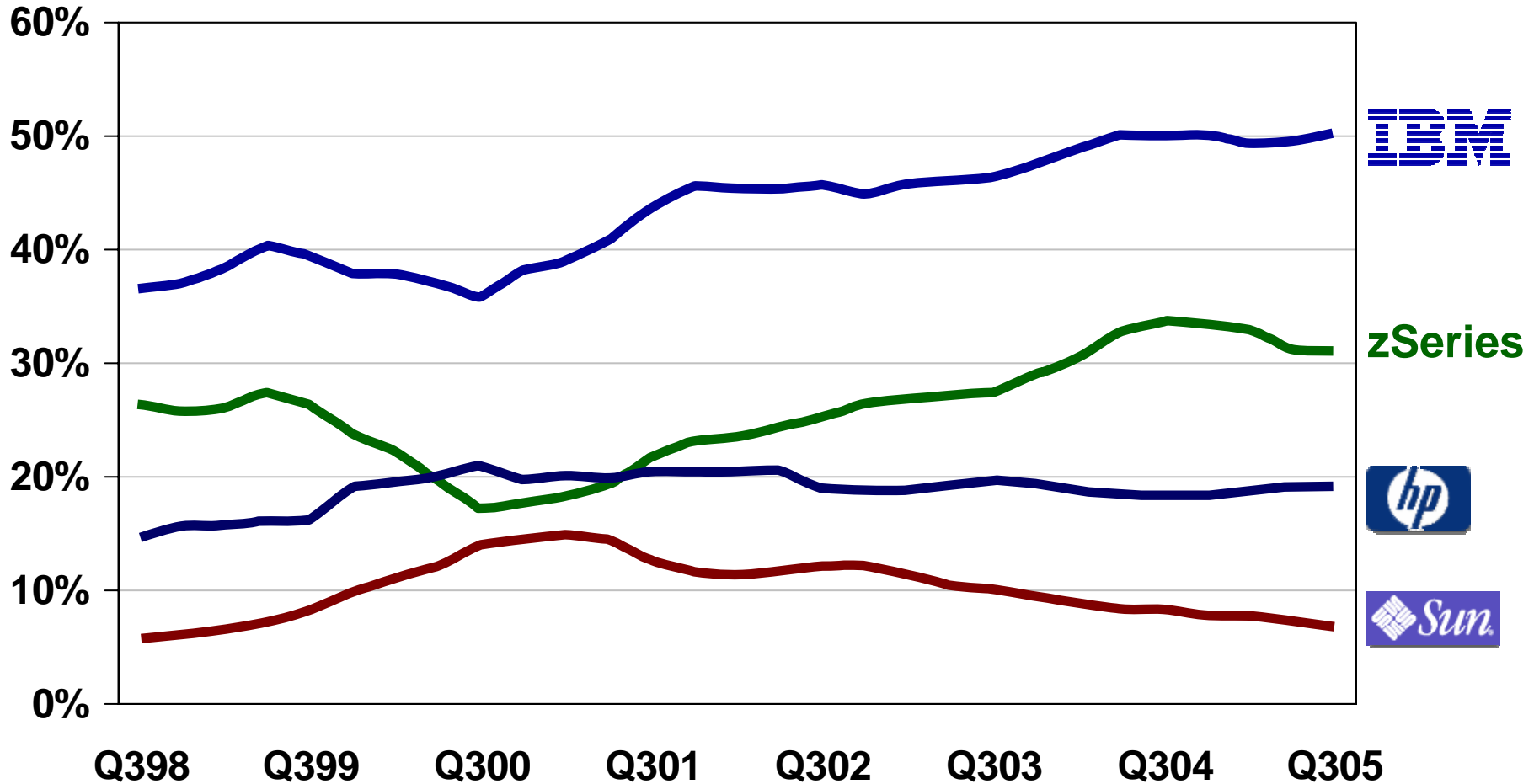


Marketplace Momentum



Source: IDC FY2005-Q3 Quarterly Server Tracker

Momentum in the > \$250K market



Source: IDC FY2005-Q3 Quarterly Server Tracker
\$250K+ server market

System z

Highest quarter of revenue
since 4Q98

Capacity grew 28% YTY

Largest quarter of MIPS in
history

The Mainframe and your journey to On Demand

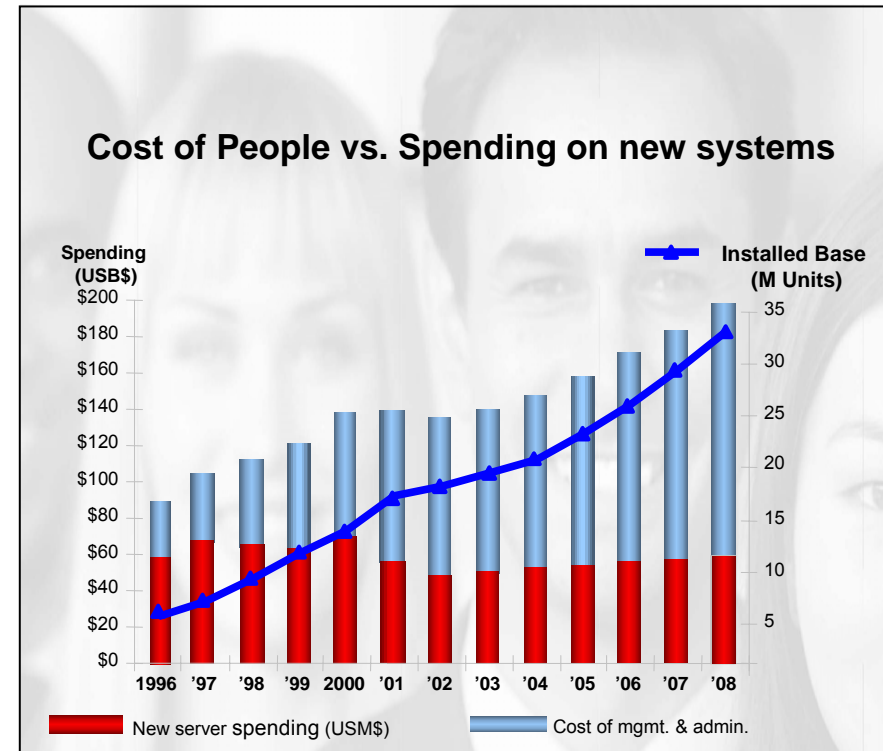
The Cost of Complexity

Managing today's mixed IT platform environments can be complex and costly

- Thousands of servers and growing
- Hundreds of applications
- **More data**
- Thousands of software licenses
- Thousands of distributed control points
- Ineffective costing methodologies

The Result

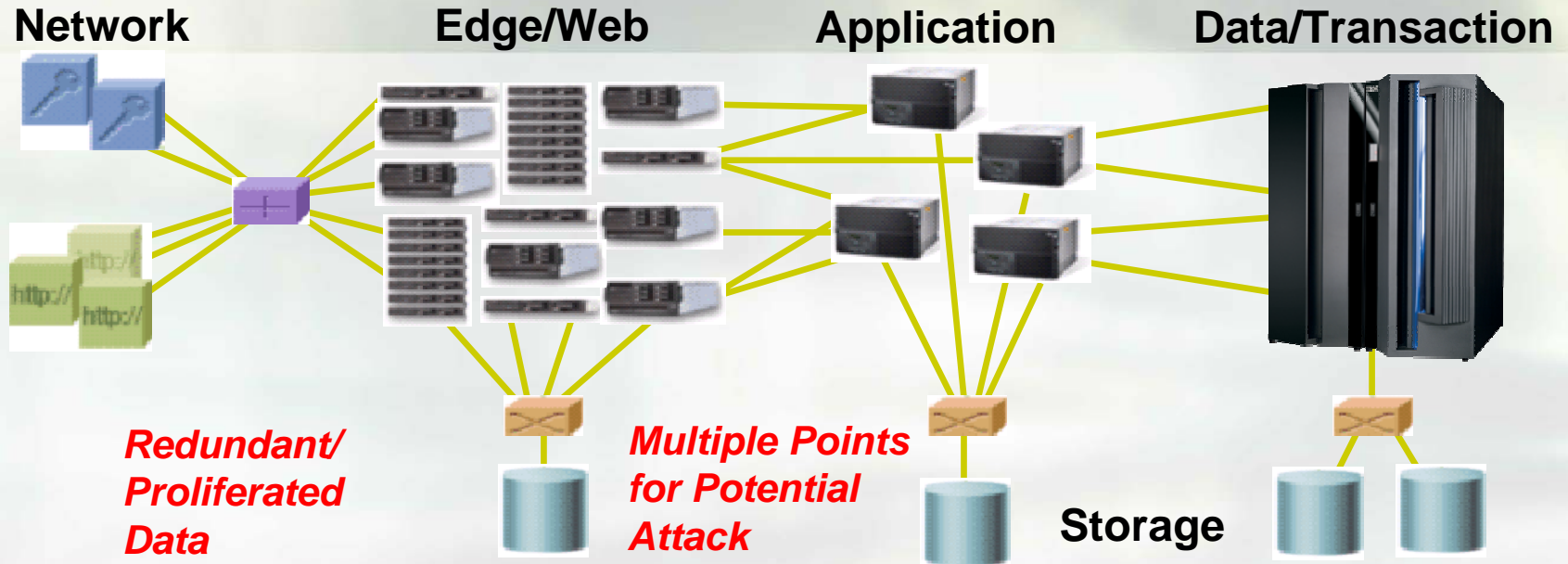
- Lack of control
- Underutilized IT assets
- **Spiraling people costs**
- Strains on electricity, cooling, and space
- Increased downtime and security costs
- Potentially - poor IT platform choices



Source: IDC, *On-Demand Enterprises and Utility Computing: A Current Market Assessment and Outlook*, IDC #31513, July 2004.

The Journey to On Demand

Traditional Operating Environment



Common View of Data



Integration



Workload Management



Security



Business Resilience



Mainframe Paradigm

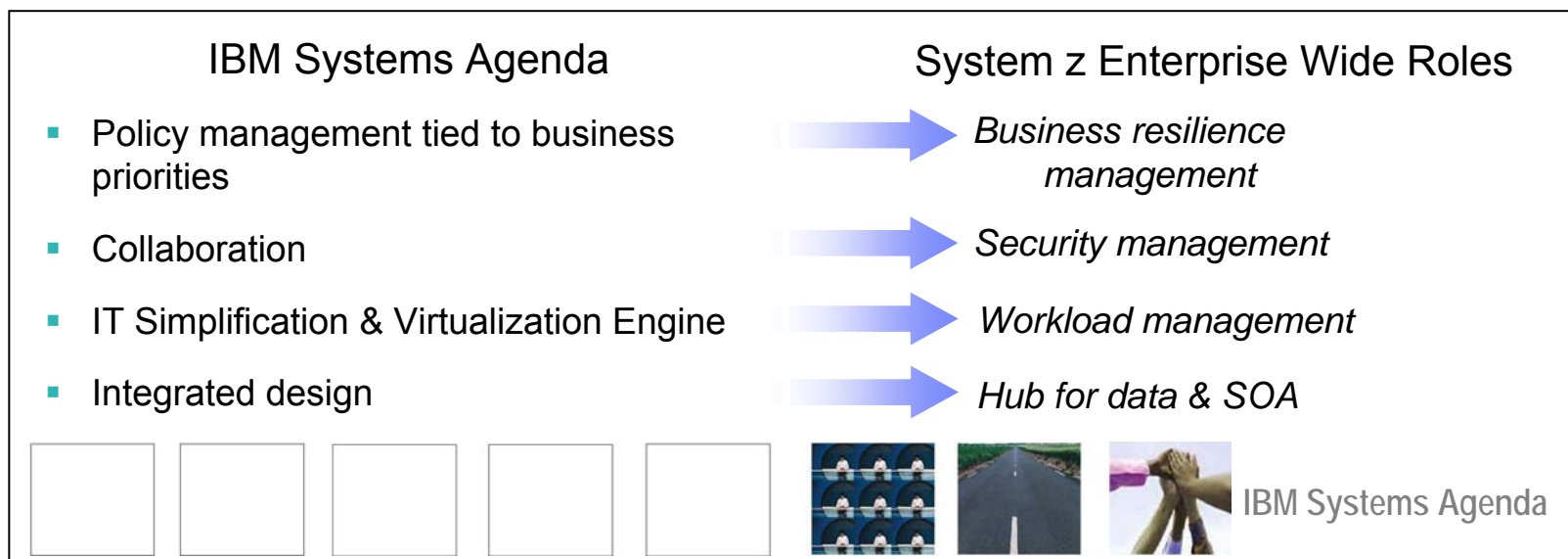
- Mainframe original design point:
 - Share everything
 - Support of mixed workloads
- Virtualization helps enable:
 - Simplification
 - High utilization
 - Intelligent management
- *This creates a foundation to:*
 - *Help customers solve On Demand business problems*
 - *Extend mainframe capabilities to intelligently manage virtualized resources across the enterprise*

The diagram illustrates the architecture of mainframe multi-dimensional virtualization. On the left, a vertical stack of three boxes represents the layers of virtualization: 'Virtual access' at the top, 'Virtual management' in the middle, and 'Physical & Virtual Resources' at the bottom. To the left of these boxes, the text 'Virtualization Engine 2.0' is written vertically. In the background, there is a large, stylized image of an IBM System z9 mainframe computer. The text 'System z9' is written in yellow at the bottom left of the mainframe image. At the bottom of the entire diagram, a yellow text box states: 'Key virtualization features are designed in, not added on'.

IBM Systems Agenda:

Extending IBM's On Demand Strategy

- Linkage of business design/transformation to business processes and IT infrastructure
- Information On Demand and SOA Strategy
- System z9 as the first proof point of the Systems Agenda



IBM's ongoing commitment to the mainframe: The IBM System z

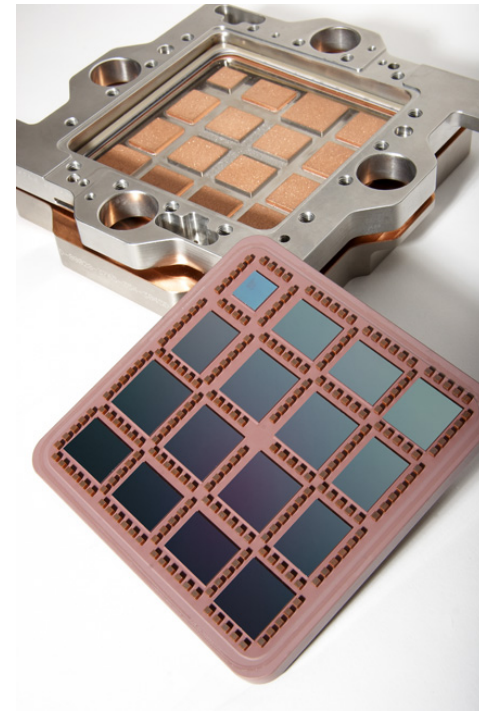
The Mainframe Charter



Innovation



Value



Community



IBM Announces the System z

System z9

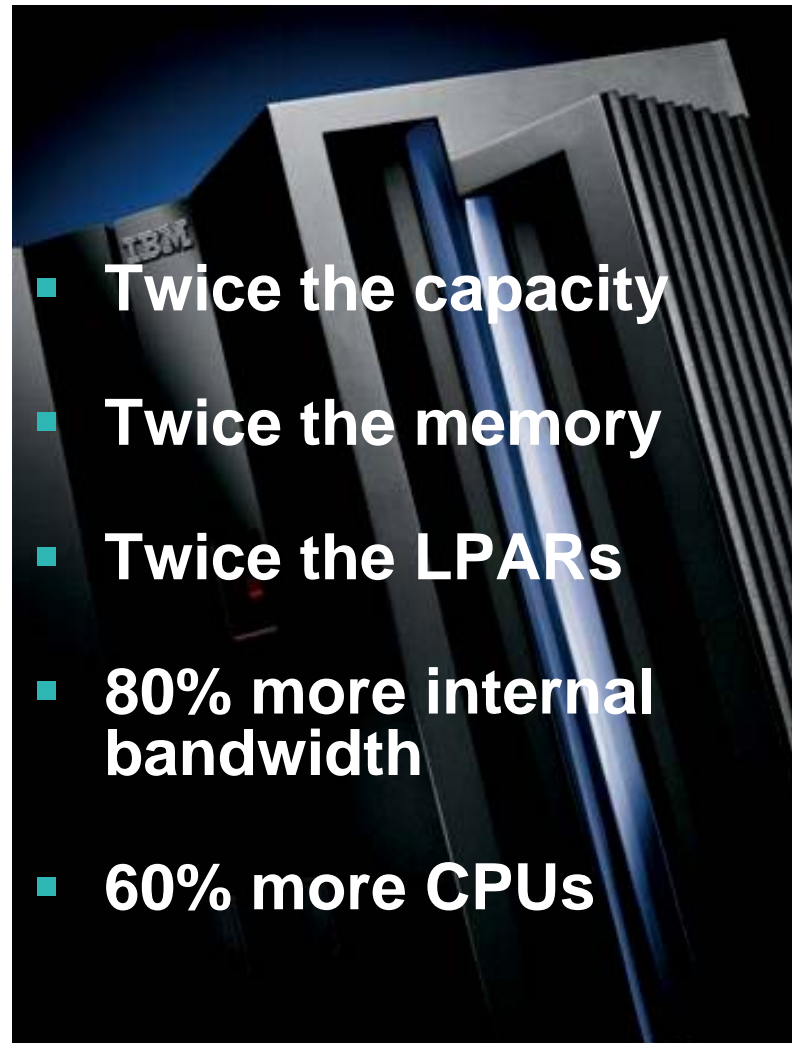
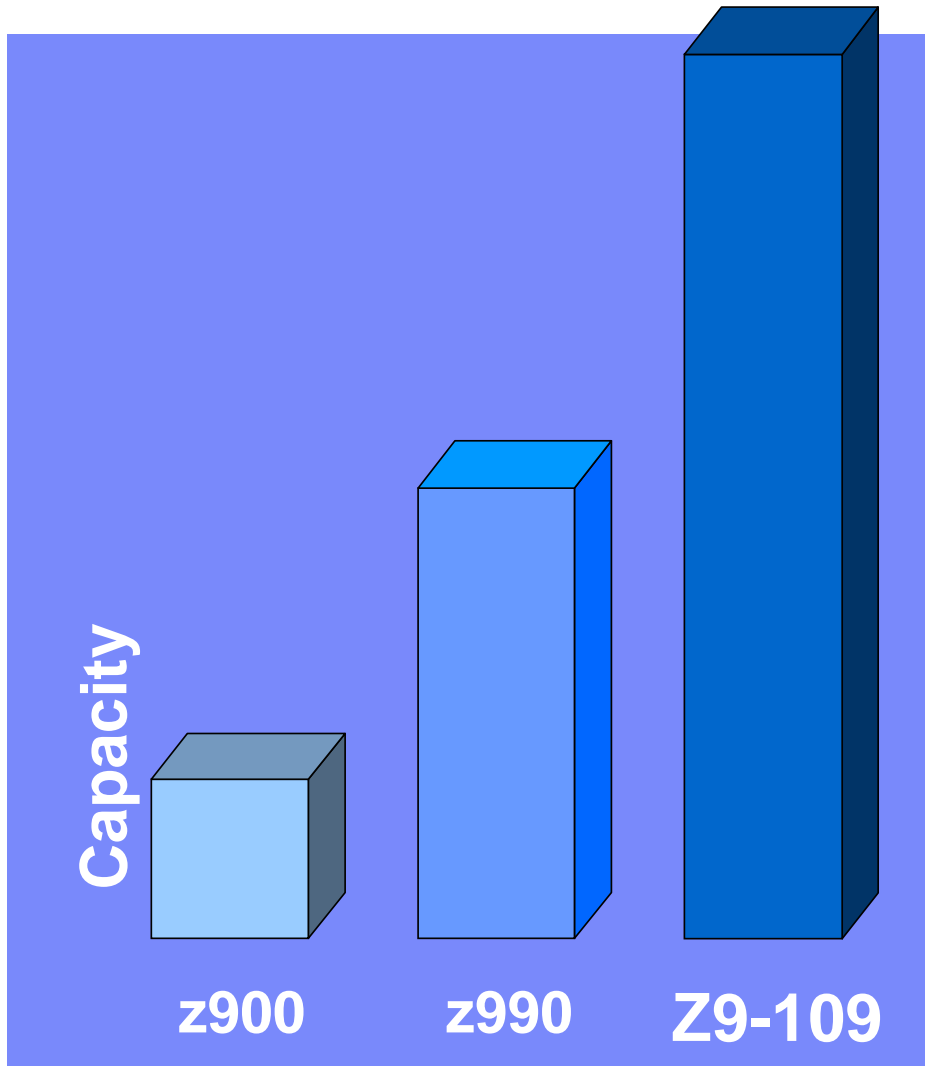
Investment:

- 3 years
- \$1.2 billion
- 5,000 tech professionals



Announcing the IBM System z

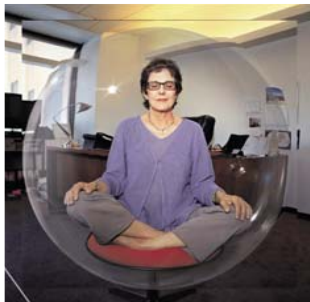
The Next Level in Scalability



- Twice the capacity
- Twice the memory
- Twice the LPARs
- 80% more internal bandwidth
- 60% more CPUs

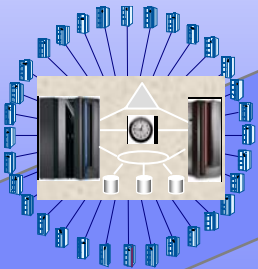
Leadership in systems innovation

- New innovations in business resiliency help to keep your business secure and provide peace of mind
 - Helping to keep your applications protected against planned and unplanned outages
 - New security options help to tighten system security
- Advanced virtualization and intelligent workload management help you maximize resources
 - z9-109 offers improved scalability, increased logical partitions and management of specialty engines
- The System z9 environment provides the ability to integrate applications and data
 - Specialty engines can provide price/performance improvements
 - Upgradeability options to z9-109 help provide investment protection



Technology Evolution with Mainframe Specialty Engines

- Centralized data sharing across mainframes



ICF 1997

IFL 2001

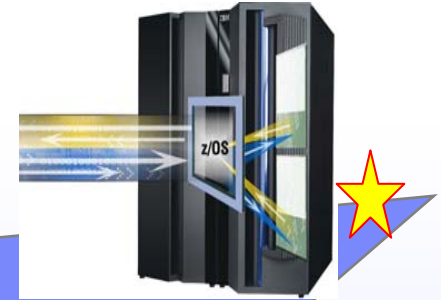


- Support for new workloads and open standards



zAAP 2004

- Incorporation of Java™ into existing mainframe solutions



zIIP 2006

- Designed to help improve resource optimization for eligible data workloads within the enterprise



zIIP – System z9 Integrated Information Processor

- A breakthrough that strengthens mainframe position as the world's premier database serving platform
- Frees-up computing capacity
- Business Intelligence and transaction processing:
 - ▶ Reduce security risks
 - ▶ Improve resource optimization
 - ▶ Lower costs



DB2 v8 exploitation of IBM zIIP

Database workload scenarios

- ERP, CRM, Business Intelligence apps



- Data warehousing applications¹
- DB2 for z/OS v8 utilities

1- The zIIP is designed so that a program can work with z/OS to have all or a portion of its enclave Service Request Block (SRB) work directed to the zIIP. The above types of DB2 V8 work are those executing in enclave SRBs, of which portions can be sent to the zIIP.

The Hidden Costs of IT – Security Breaches & Downtime

Security breaches are becoming more prevalent and can be very costly

- **Computer viruses increased by 25% in 2004**
- **Estimates of over 6% of e-mail contain viruses**
- **More Than 90% Of Companies Expose Sensitive Data¹**
- **Businesses Reluctant To Report Cyber Attacks²**
- **One In Four Identity-Theft Victims Never Fully Recover³**
- **Card Associations Unite Setting Standards to Fight Fraud⁴**

Downtime and security issues can mean more than economic loss to your business

- *Regulatory compliance*
- *Cost of research and recovery*
- *Cost to notify customers*
- *Problem solution or remediation*
- *Claims from trusted vendors and business partners*
- *Market competitiveness*
- *Customer loyalty*
- *Business image & reputation*

Brokerage Retail	\$6.5 Million
Credit Card Sales Authorization	\$2.6 Million
Airline Reservation Centers	\$90,000
Package Shipping Services	\$28,250
Manufacturing Industry	\$26,761
Banking Industry	\$17,093
Transportation Industry	\$9,435

Source: ©Eagle Rock Alliance, LTD. All Rights Reserved 2003

¹ Reconnex Insider Threat Index August 2005

³ Nationwide Mutual Insurance Co. Survey July 2005

² 2005 CSI/FBI Computer Crime and Security Survey

⁴ Green Sheet Inc. August 2005 Issue 2

Vision to Secure Enterprise Data

Solutions for a Heterogeneous Environment



**Protect Data Leaving
Your Enterprise**



**Enterprise-wide
Key Management**



Protect Archived Data



**Protect
Enterprise-
wide Data**

z9-109 – Providing new levels of availability

- New enhanced book availability and redundant I/O interconnect – increasing z9-109's availability by helping to avoid unplanned outages:•
 - Enhancing recovery of resources
 - Improving ability to nondisruptively add and repair memory resources
- Improving the application of hardware driver maintenance:•
 - Potentially reducing planned outages using enhanced driver maintenance
- Extending capability for Capacity Backup Upgrade (CBU) to include specialty engines
- Improving memory availability with flexible memory offering



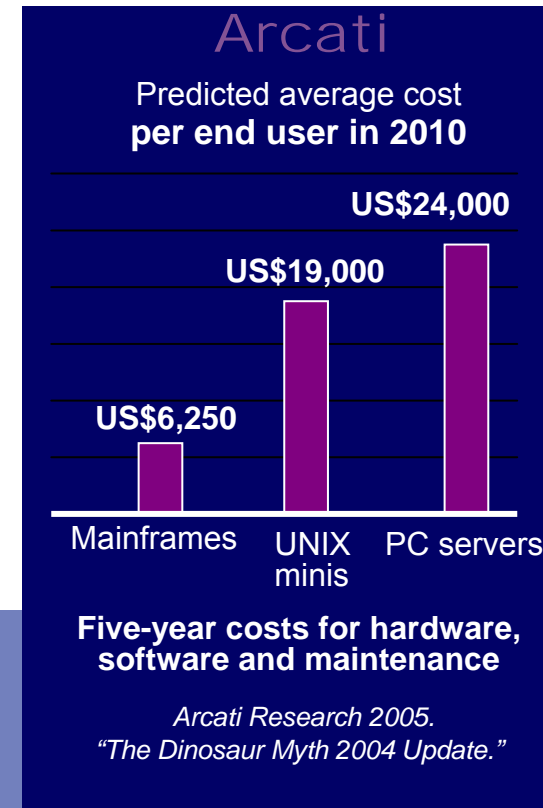
Getting the most value from your IT

Delivering value today and tomorrow

- The mainframe charter recognized the need to continually improve price/performance
 - Lowering costs across the board with each successive generation
 - Specialty engines delivered up to a 58% percent price/performance improvement from z900
 - No charge MES for specialty engines
 - z9-109 memory pricing now as low as US\$8,000 per GB*
 - z9-109 hardware maintenance cost down 46 percent from z900
 - Delivering greater value from your software
 - z9-109 delivers a 19 percent reduction in chargeable MSUs from z900
 - Innovative integration solutions with zAAPs, zIIPs and IFLs
 - Competitive tools portfolio
 - Delivering aggressive pricing to enable new workloads
 - Low cost specialty engines
 - SoD for subcapacity NALC

Prediction: *The five-year cost of mainframes will be one third of UNIX mini environments and one quarter of PC server environments.*

Arcati Research 2005. "The Dinosaur Myth 2004 Update."



Mainframe Community Ecosystem



IBM Academic Initiative

- 20,000 new skills by 2010
- 200+ colleges and universities
- 800 students in first ever Mainframe student contest

Partners

- 282 Linux ISVs and 790 Linux applications
- Websphere z/OS ISV initiative adds 16 applications ; increased investment in '06

Mainframe blog <http://mainframe.typepad.com>

The Mainframe Charter – setting future direction



Innovation

- **Focus on enterprise wide roles**
 - ▶ Security
 - ▶ BR and Workload management
 - ▶ Data Hub and Business Integration
 - ▶ On Demand solutions with SWG
- **Continue to “Raise the Bar” on technology leadership**



Value

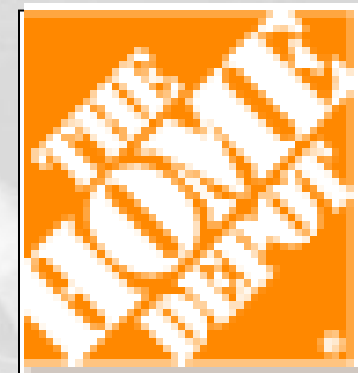
- **Attractive for new workloads**
- **Continued focus on specialty engines & accelerators**
- **Drive granularity to support broad market**
- **Generation to generation Price / performance improvements**



Community

- **Drive ISV applications & strengthen partner relationships**
- **Build new skills in marketplace, including next generation**
- **Focus on emerging geographies**

Transforming Clients into On Demand Businesses



Thank you !