

IBM Systems & Technology Group

IBM Mainframe Strategy The System z9 Advantage

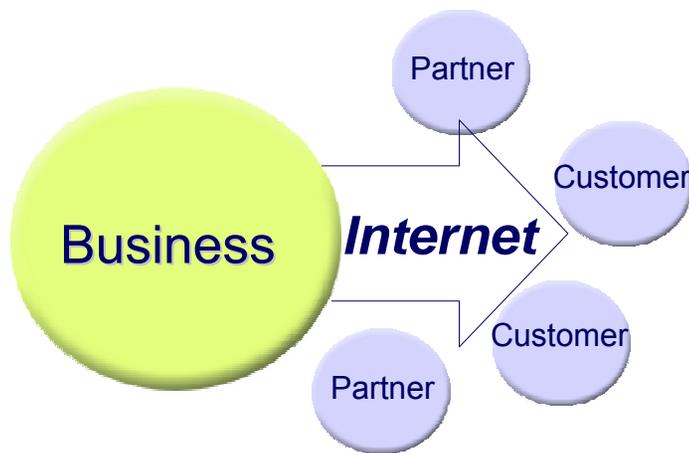
Terri Virnig
IBM System z9 Strategy and Marketing



IBM Systems Strategy and the Mainframe

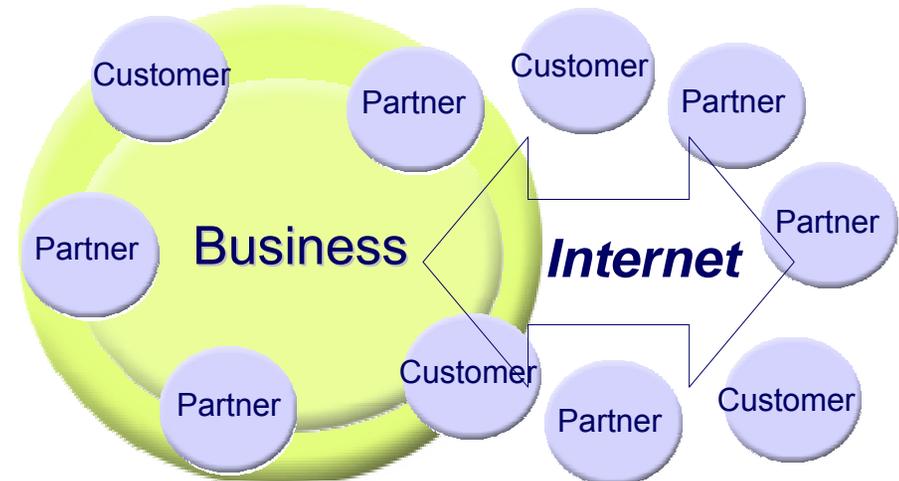
IT environments are constantly changing

Online transaction processing



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

On Demand collaborative processing



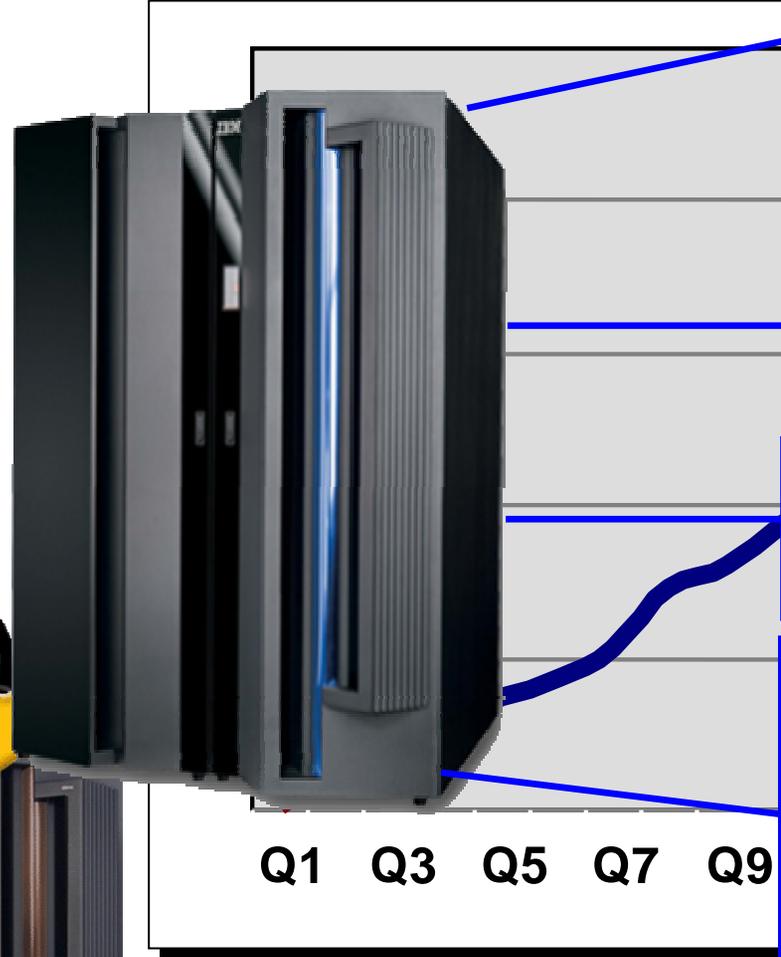
- **Shared**
- **Open/Standards based**
- **Dynamic**

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

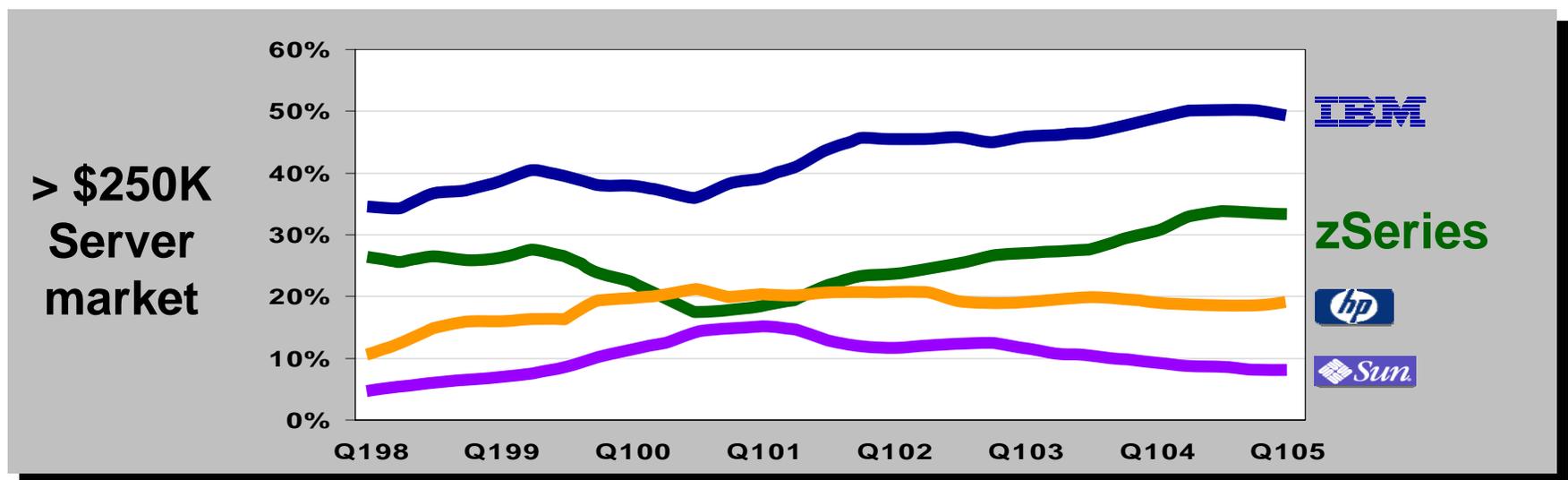
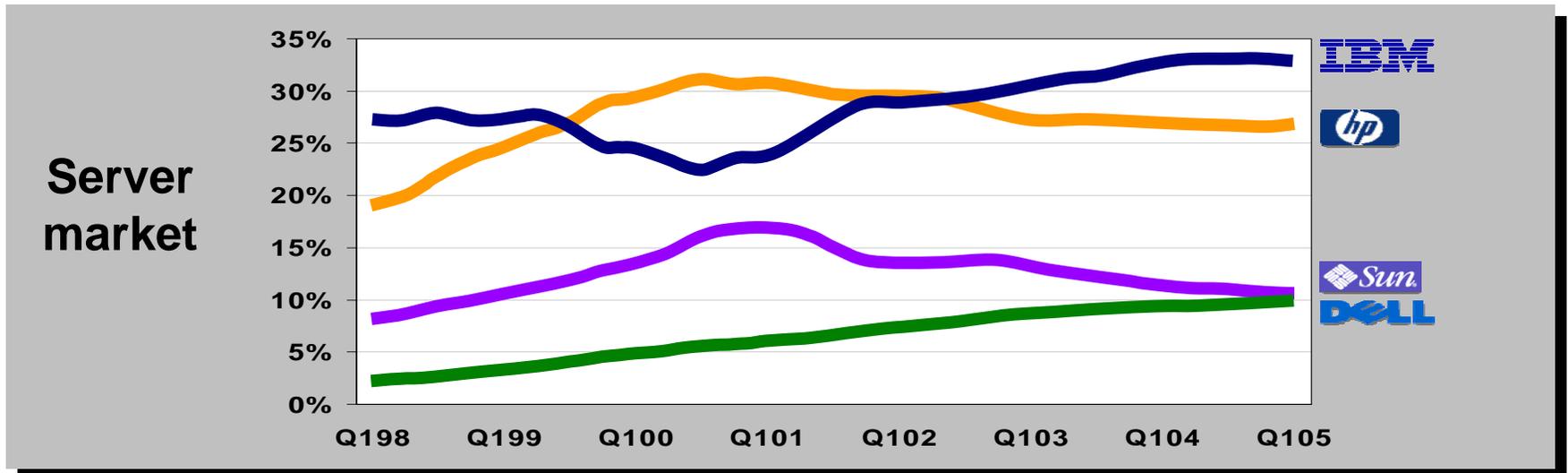
Collaborate to Innovate



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



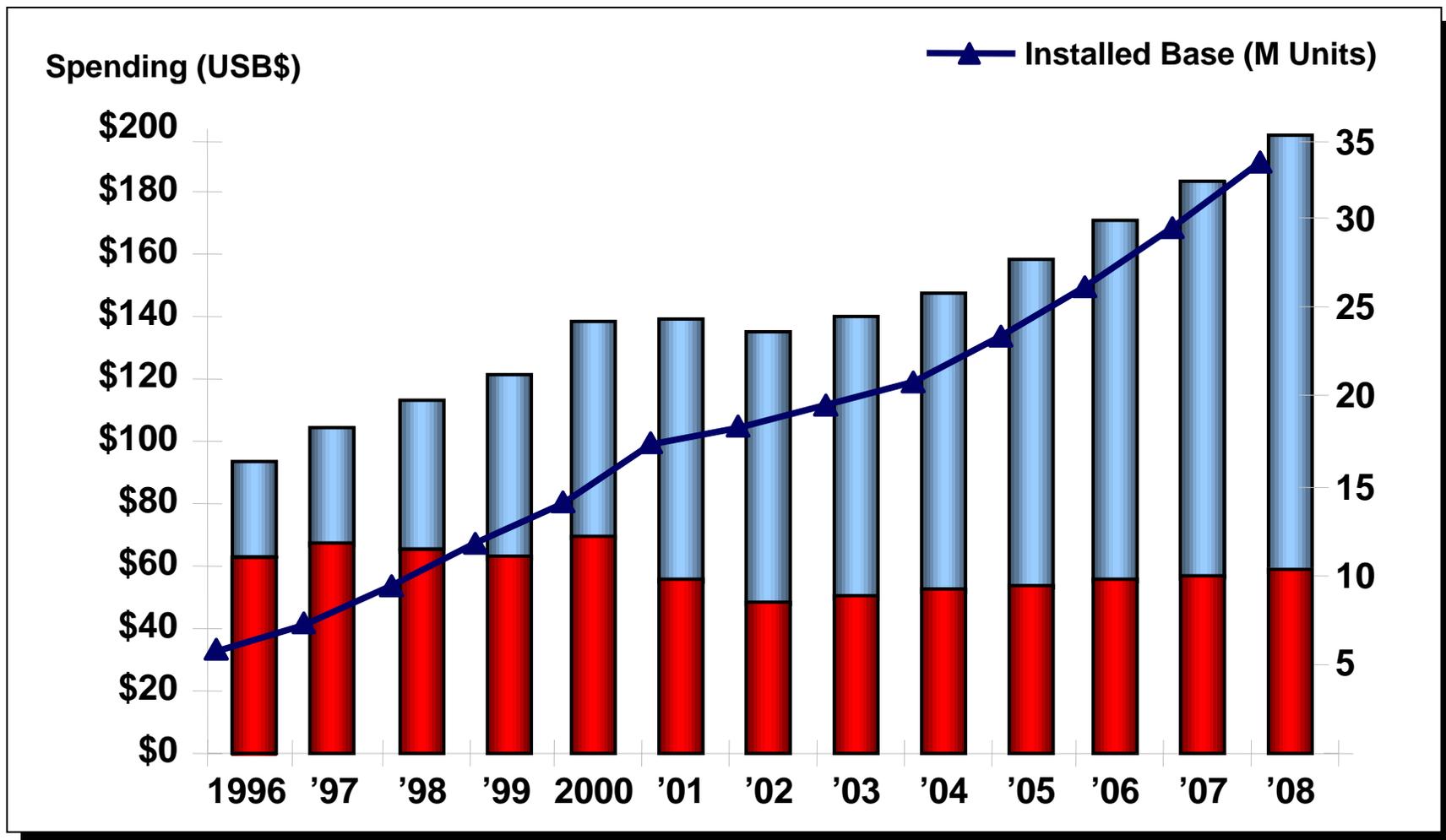
Market Momentum



Source: IDC FY2005-Q1 Quarterly Server Tracker and STG MI

The Mainframe and your journey to On Demand

Cost of Complexity



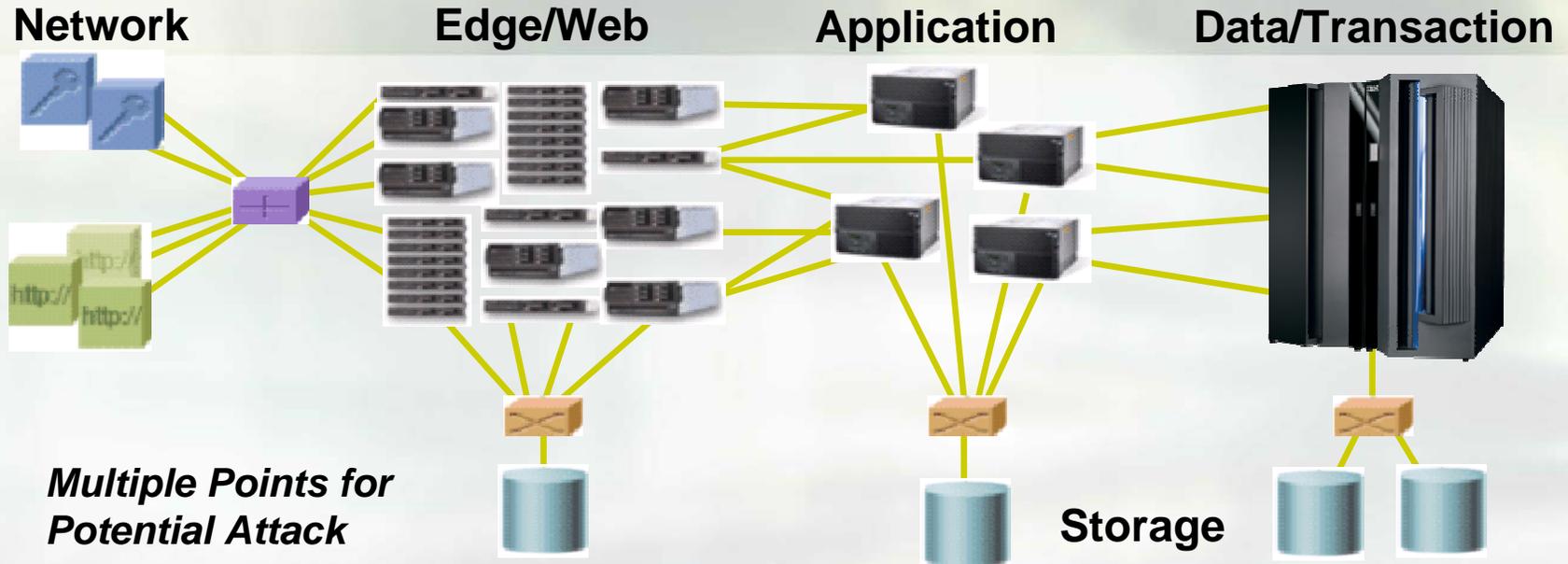
New server spending (USM\$) 3% CAGR

Cost of mgmt. & admin. 10% CAGR

Source: IDC

The Journey to On Demand

Traditional Operating Environment



Integration



Workload Management



Security



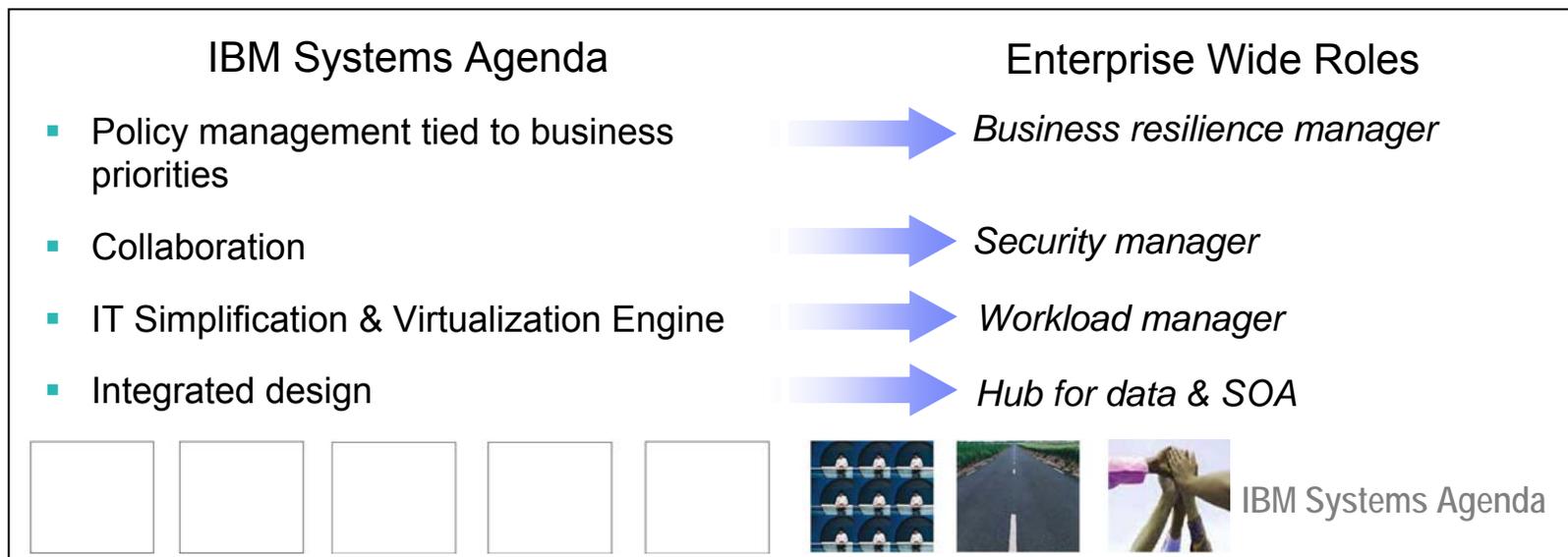
Business Resilience



IBM Systems Agenda:

Extending IBM's On Demand Strategy

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



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 mainframe multi-dimensional virtualization architecture. On the left, a vertical stack of mainframe hardware is shown, with the top unit labeled 'IBM' and the bottom unit labeled 'System z9'. To the right of the hardware, three stacked rectangular boxes represent the layers of virtualization: 'Virtual access' at the top, 'Virtual management' in the middle, and 'Physical & Virtual Resources' at the bottom. The background features a blue grid pattern with glowing circular data points.

Mainframe multi-dimensional virtualization

Virtualization Engine 2.0

Virtual access

Virtual management

Physical & Virtual Resources

System z9

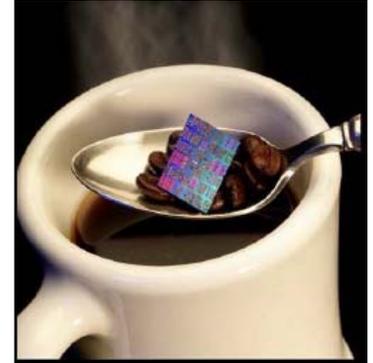
Key virtualization features are designed in, not added on

IBM's ongoing commitment to the mainframe: The IBM System z9

The Mainframe Charter



Innovation



Value



Community



IBM Announces the System z9

System z9

Investment:

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



Announcing the IBM System z9

The Next Level in Scalability



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

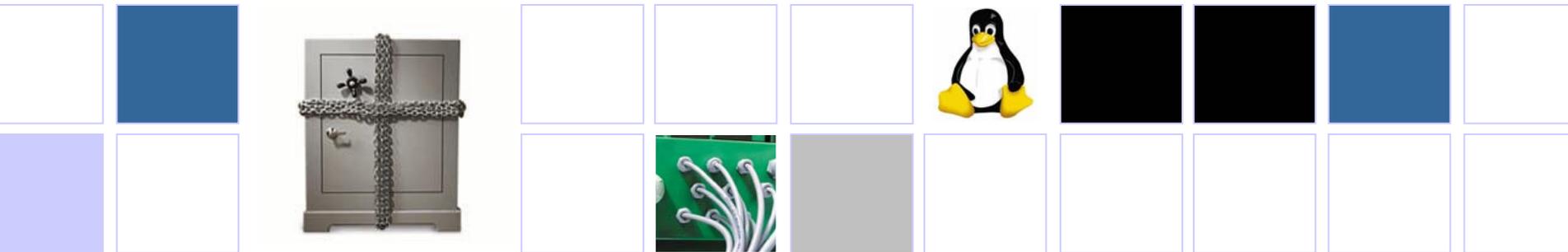
z9-109 – Providing new levels of availability

- 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



z9-109 – Enhancing security

- ★ ■ New integrated cryptography features offer more security options on z9-109
 - Advanced Encryption Standard (AES) support in z9-109 hardware
 - Stronger hash algorithm with SHA-256
 - Pseudo Random Number Generator
- ★ ■ Crypto Express2 improved flexibility and speed
 - Configurability options, two coprocessors, two accelerators or one of each
 - With both adapters configured as accelerators each Crypto Express2 card is designed to provide up to 6000 SSL handshakes per second *
- Secure encryption facility for z/OS to help protect data shared with partners, suppliers, and customers **
 - Designed to leverage z/OS key management and high performance hardware encryption
- Can help to achieve higher levels of certifications and compliance
- Virtualized cryptographic capabilities for card sharing by Linux virtual servers
- Complementary IBM technology and vendors' advanced security solutions
 - Can enable a cross-platform model that can extend RACF capabilities to the enterprise
 - May provide the capability of integrating security enforcement across the networking enterprise



The Mainframe Charter – setting future direction



Innovation

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



Value

- **Continued focus on specialty engines & accelerators**
- **Drive granularity to support broad market**
- **Price / performance improvements**



Community

- **Drive ISV & partner relationships**
- **Build new skills in marketplace**
- **Focus on emerging geographies**

The Hidden Costs of IT – Security Breaches & Downtime

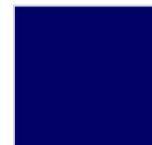
Security breaches are becoming more prevalent and can be very costly

- In 2004 known computer viruses increased by 25% to 112,438 known viruses*
- Sources of viruses began to expand as well: i.e., cell phones, PDAs, wireless networks, and embedded computers*
- Of 147 billion e-mails scanned, 6.1% contained a virus
 - The growth rate has doubled from prior years*
- Network attacks on utilities, telecommunication companies and government agencies surged 55% from July to August 2004*
- May 2005: largest breach of banking security in US history
 - 676,000 customer records stolen and up to \$Billions in losses to consumers**

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

- Regulatory compliance
 - Fines
 - Other penalties
- 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



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**

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



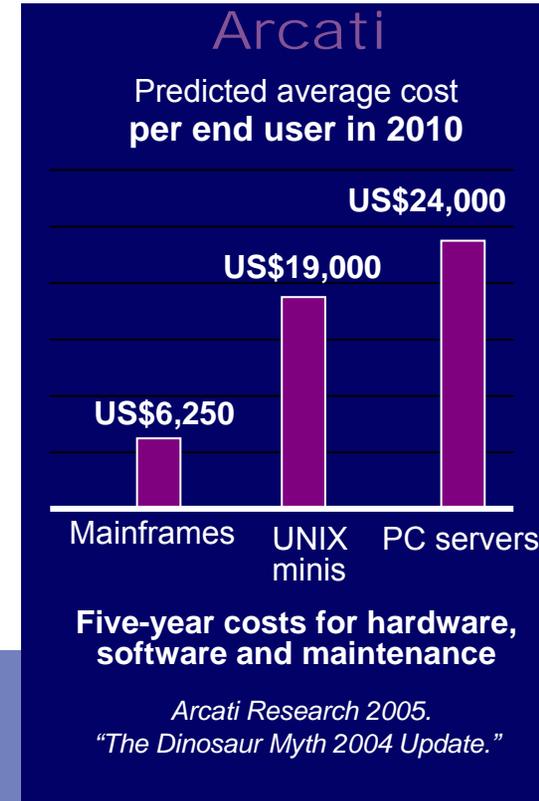
Getting the most value from your IT

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 better value out of your software
 - z9-109 delivers a 19 percent reduction in chargeable MSUs from z900
 - Innovative integration solutions with zAAPs and IFLs
 - Competitive tools portfolio
 - Delivering aggressive pricing to enable new workloads
 - IBM plans to continue to deliver innovative and flexible pricing, providing solid value**
 - Further refinement in utilization pricing metrics
 - Further leveraging specialty engines to improve integration and provide differentiating value

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



Customer councils

IBM Academic Initiative

- 20,000 new skills by 2010
- 200+ colleges and universities
- zNext Generation Program

Partners

- 240 mainframe Linux ISVs
- 1,500 mainframe partners

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

Transforming Clients into On Demand Businesses



Thank you !