Why IBM^

Sheryl G. Matton
Worldwide Marketing
IBM Systems Group

Objectives

■ Present an overview of the IBM e-business on demand™ strategy

■ Show how IBM ^ ™ addresses business and infrastructure needs
- ➡ Addresses today's IT needs
- ➡ Establishes the building blocks for e-business on demand

■ Help you to evaluate and select servers
- ➡ Increase awareness and consideration for IBM ^
- ➡ Generate greater interest in IBM ^ in all areas of your business

e-business on demand

**Responsive
Variable
Focused
Resilient**

On Demand Business
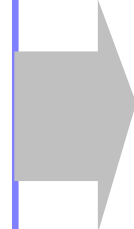
Responsive

Variable

Focused

Resilient

We are entering a new era in business value
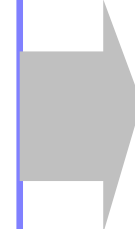
Access

Enterprise Integration

On Demand

"Get your business on the Net"

- Market reach extended

- 24x7 access from customers
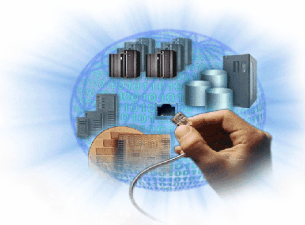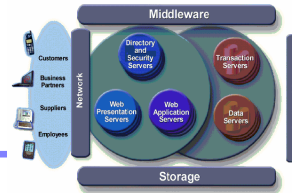
- Access, publish and transact

"e-business is real business"

- Business productivity gains

- Industry standards

- Integrate both internally and externally

"Optimize operations... dynamically respond to the needs of customers, employees and partners

- Improve level of service
- Exploit profitable opportunities
- Synergy with customers and partners

Phases of e-business adoption

As customers enter the On Demand era, their requirements change

**Design Centers
for e-business on demand** tm

**Advanced e-business
Council**
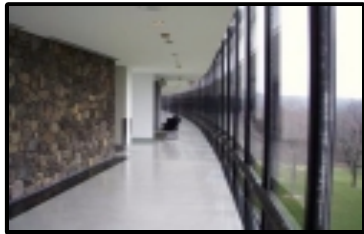
**IBM's Institute for High
Performance Web Computing**

On Demand
Business Attributes

- **Responsive** in real time
- **Variable** cost structures
- **Resilient**
- **Focused** on core competencies

On Demand
Operating Environment

Infrastructure Needs

- **Integrated**
- **Open**
- **Virtualized**
- **Autonomic**

30,000 e-business engagements

IBM's own transformation

How do you meet your business and infrastructure needs today?

Evaluate applications and solutions	Select hardware platform	Install and integrate systems Train personnel Customer support	Become more efficient over time	Manage overall project costs within budget
			- availability - skills - systems mgmt	

IT Life Cycle

IBM ^ Initiatives

Application Flexibility	Technology Leverage	Risk Mitigation	Infrastructure Efficiency	TCO Reduction
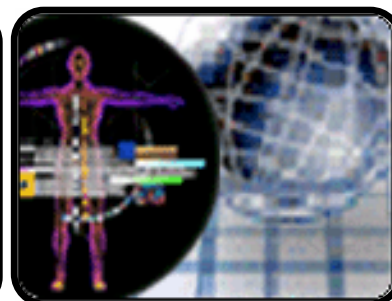
Application Flexibility

An IT partner committed to open standards-based business solutions

Evaluate applications and solutions
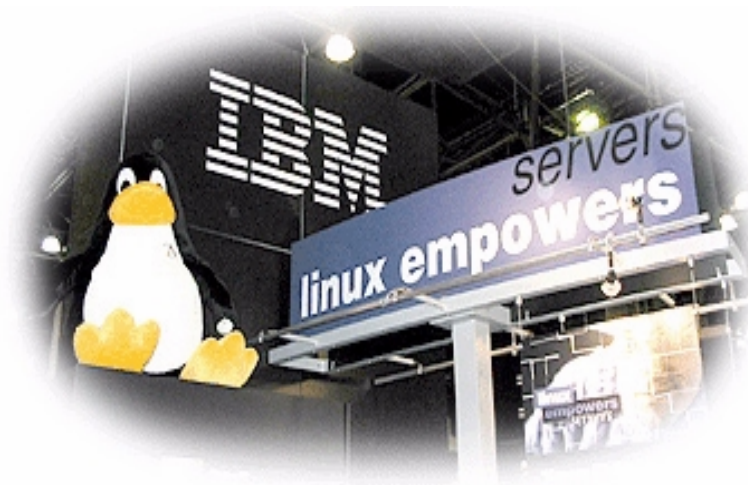
Open standards
Linux ®
Middleware
Partnerships

Business Attributes

- **Responsive**
- **Variable**
- **Focused**
- **Resilient**
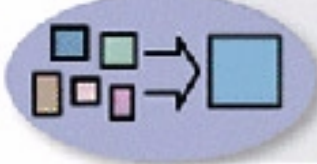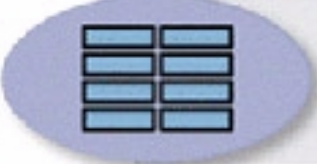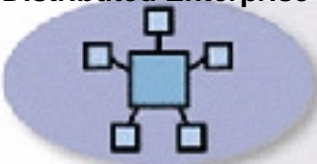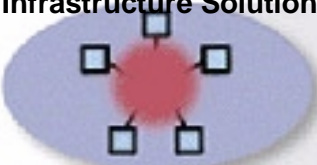
Infrastructure Needs

- **Integrated**
- **Open**
- **Virtualized**
- **Autonomic**

Open standards - the foundation of Application Flexibility

Linux

WSDL

SOAP

XML

Globus

Web
Services

SNIA

Linux deployment strategy supports customer goals

Topologies	*Recent Customers*	*Goals*
Workload Consolidation	T···· Merrill Lynch AIR NEW ZEALAND	Improve performance Speed deployment Dramatically improve TCO
Linux Clusters	Triaton The BusinessProcessor Mississippi State NASA Jet Propulsion Laboratory	Price/performance Improve uptime Rapid setup and install
Distributed Enterprise	STARBUCKS COFFEE CASAS BAHIA	Lower cost Easily replicated High reliability and stability
Application Solutions	ISV Applications, IBM Middleware, eServer Wolferman's Mainichi 7 ELEVEN	Solution assurance Optimized Reduced implementation time
Infrastructure Solutions	Mazu NETWORKS FERMAX	Low cost Easy to setup/expand Turnkey

Alliances that drive integrated solutions

Integrated

Open Middleware

Open

Decoupled infrastructure

Linux	z/OS™	OS/400®	AIX®	Windows®
Non-IBM servers	IBM ^		IBM TotalStorage™	

Virtualized

Autonomic

Technology Leverage

Select hardware platform

A leader in technology that can help me tie the pieces together

Performance
Choice
Flexible growth
Storage management
On demand building blocks

Business Attributes

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- **Variable**
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Infrastructure Needs

- **Integrated**
- **Open**
- **Virtualized**
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Performance through technology leadership

2002 Patents

Company	Patents
IBM	3288
Intel	1077
HP	1061
Sun	502
Microsoft	499
Compaq	324
Dell	109
EMC	101
Oracle	84
Apple	76

POWER4 ™ microprocessor

Silicon on insulator

Copper Wiring

z900 multichip module
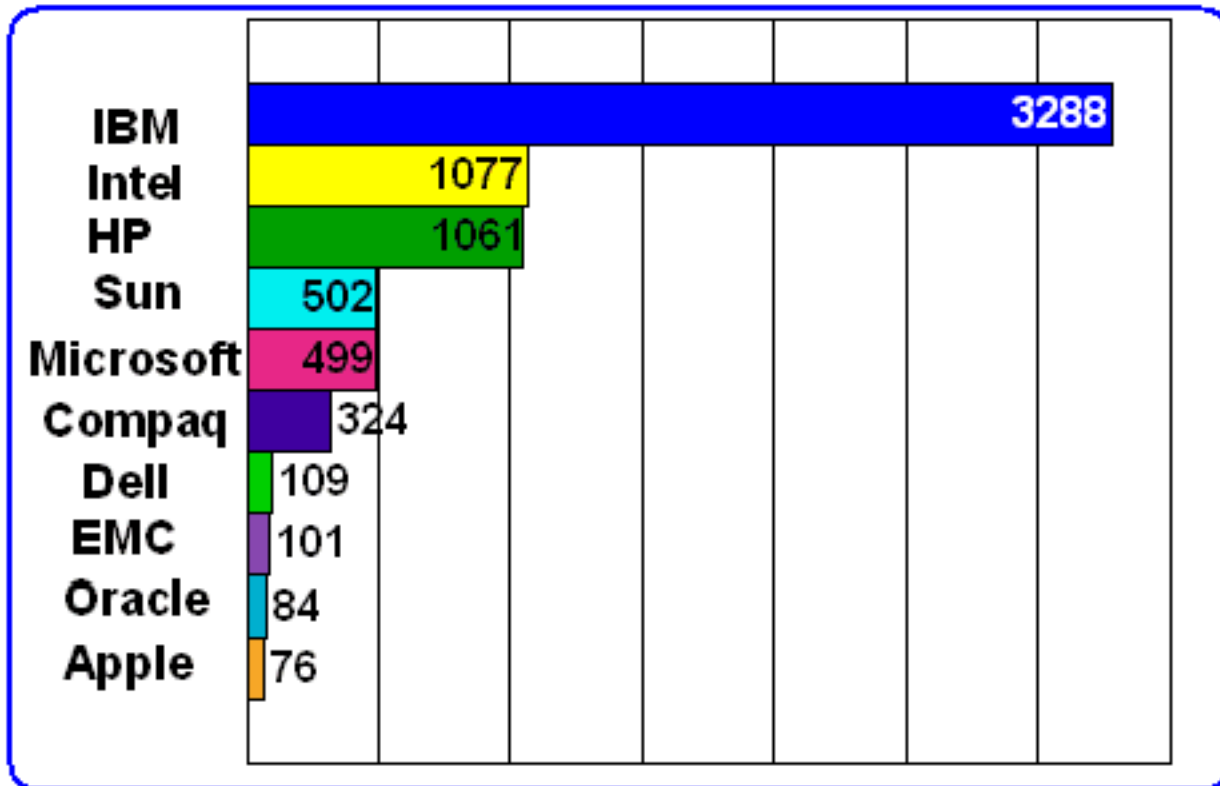
2003 Benchmark Performance

e-biz	TPC-W 10K	IBM	Dell	Dell
e-biz	SPECweb99	IBM	HP	IBM
e-biz	Notes Bench R5	IBM	IBM	IBM
OLTP	TPC-C V5 Single system	Fujistu	NEC	IBM
ERP	SAP SD 3 Tier R/3	IBM	IBM	Unisys
ERP	PeopleSoft GL L	IBM	IBM	Sun
ERP	Oracle Apps Std. 11i	IBM	IBM	IBM
ERP	Baan 2 Tier (DB & App)	IBM	IBM	IBM
ERP	JD Edwards HTML	Sun	IBM	IBM
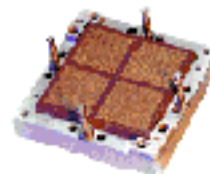
p690 multichip module

Enterprise X-Architecture™

All results are as of 04/01/2003 from www.ideasinternational.com , www.spec.org or www.tpc.org
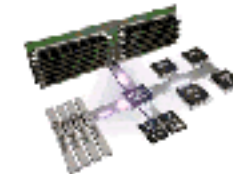
Shared technology equals customer value

zSeries™

pSeries™

iSeries™

xSeries™

Enterprise Storage Server™

What this means to customers

Autonomic Computing

WorkLoad Mgr, Virtualization, Partitioning, Security, Systems Mgmt

- IBM's best technology
- Shared innovation
- Faster servers
- Improved availability
- Faster to market
- Leverage your investment

Series Unique Technologies

z/OS, AIX 5L™, OS/400, Windows Operating System, FICON Express

Shared Components

Linux, Processors, I/O Power, Hardware Console, Adapters, Switches, Power/Mechanical frames

IBM^ family

zSeries
- ➡ Legendary quality of service, security and scalability
- ➡ Industry leading virtual partitioning for z/OS and Linux

BladeCenterTM
- ➡ Highly manageable, modular infrastructure
- ➡ Shared resources for business continuity
- ➡ Performance density

xSeries
- ➡ End-to-end portfolio on Intel processors
- ➡ Revolutionary Enterprise X-Architecture technology for Intel

iSeries
- ➡ Robust application integration and integrated operating system
- ➡ High levels of security

pSeries
- ➡ Outstanding performance and reliability
- ➡ Uncompromising UNIX and Linux enablement

Clusters
- ➡ Price and performance leadership in both UNIX and Linux environments

Flexible server growth

Scale UP

Scale Up / Consolidated Platforms

i890/p690/z900

- Logical Partitioning
- Virtual Servers
- Server Consolidation

Enterprise SMP

Clusters

- Linux
- HPC
- AIX 5L

Parallel Sysplex®

x440

- Scalable Nodes
- Partitionable
- Modular growth

High-Density Rack-Optimized

BladeCenter

- Rapid Deployment
- Flexible Architectures
- Switch Integration

Scale OUT

Scale Out / Distributed Platforms

IBM TotalStorage: Complementing IBM^

- Complete portfolio
- Open standards
- Integrated and tested components
- One coherent service and support structure
- IBM Business Partners and alliances for complete solutions

Systems Management

Servers

Servers

Storage Networking

gateways

SAN

NAS

DISK

Tape
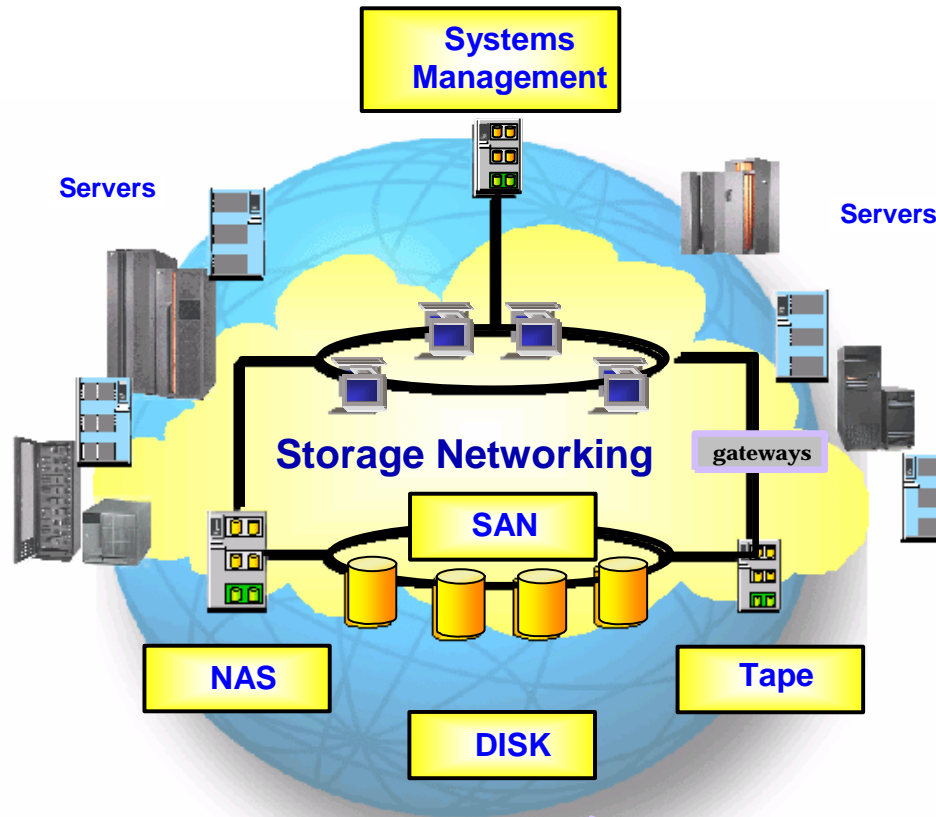
- Data sharing and access
- IT consolidation
- Disaster tolerance
- Business process integration
- Leverage information
- Manage growth
- Contain costs

| Direct Attached Storage | Storage Networking | Autonomic Storage | Virtual Storage | e-business on-demand |

Technology Direction

A closer look at On Demand building block examples

**For IBM ^
customers who are
investing in ...**

xSeries	pSeries	zSeries	iSeries	Storage

**IBM is
delivering...**

systems management via IBM Director pay as you grow architecture	advanced virtualization technologies dynamic LPAR AIX workload mgmt.	Intelligent Resource Director - manages resources to business rules Linux virtualization	advanced virtualization technologies simultaneous multi-environment workloads	connect to multiple platforms/open Storage networking LPAR

**plus e-business
on demand will
deliver....**

grid enablement logical partitioning Win/Linux workload mgmt.	grid enablement capacity upgrades flexible pricing	grid enablement utility-like service flexible pricing	grid enablement temporary capacity dynamic storage mgmt.	grid enablement universal storage management virtualization

Risk Mitigation

A trusted partner who has been and will be there for me, even in hard times

Install and integrate systems
Train personnel
Customer Support

Business Attributes

- **Responsive**
- **Variable**
- **Focused**
- **Resilient**

Infrastructure Needs

- **Integrated**
- **Open**
- **Virtualized**
- **Autonomic**

Team IBM
Advantage offerings

TEAM IBM

IBM e Business Partner

IBM Global Services

BCS

IBM TotalStorage™
Connected. Protected. Complete.
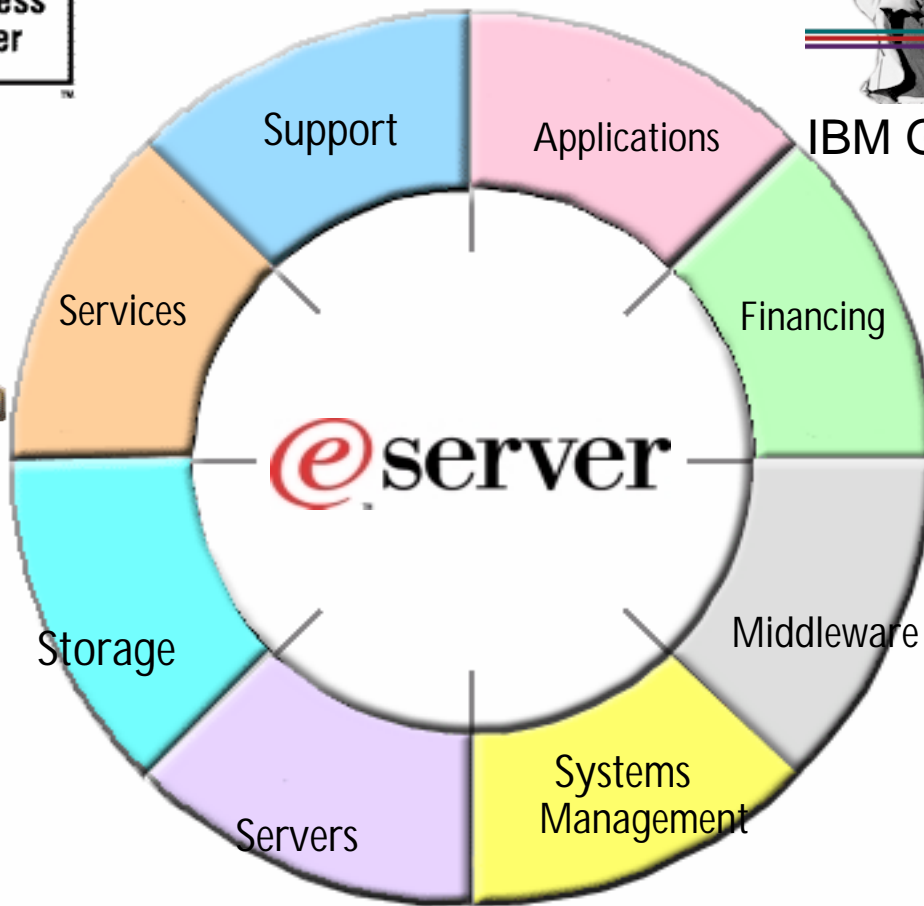
IBM Global Financing

Win Win Win
Win with Financing!

DB2. Data Management Software
Tivoli. software
Lotus. software
WebSphere. software

think research
YOUR WINDOW ON IBM INNOVATION

eserver

- Support
- Applications
- Financing
- Middleware
- Systems Management
- Servers
- Storage
- Services
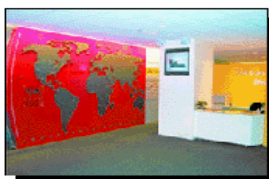
^
**Executive
Briefing Centers**

**IBM Design Centers for e-
business
on demand**

^
**Performance
Benchmark Centers**

^
Services Centers

IBM ^ advantages - a trusted partner

- *Solution Assurance Advantage:*

  Provides Web access to a wealth
  of solutions and services for cost-effective,
  rapid, low-risk solution selection
  and implementation.

- **Offerings include:**

  - **IBM ^ Solution Connection**
  - **ServerProven™ & TotalStorage Proven programs**
  - **IBM ^ Tools Network**
  - **Assessment Services**
  - **Solution Assurance Reviews**
  - **Certified IBM Business Partners**

- *Technical Support Advantage:*

  **Provides a robust portfolio of industry-leading
  services to help you learn about, choose,
  implement and use the right IT solution based
  on your business requirements**

- **Offerings Include:**

  - **Worldwide Centers for Executive Briefings, Benchmarking and Services**
  - **Design Centers for e-business on demand**
  - **Learning Services & IBM ^ Campus**
  - **IBM Redbooks documentation**
  - **Support around the clock, around the world**

IBM ^ advantages - a trusted partner

■ *Capacity Advantage*

Availability Advantage

Financing Advantage

Helps you manage unpredictable growth with pre-installed processing power, flexible storage offerings and On Demand capacity programs

Helps you create a resilient IT infrastructure where downtime is simply unacceptable

Take the pain out of acquisition by optimizing the use of limited IT funds

■ *Offerings include:*

- − Server and Storage Capacity Upgrades on Demand
- ➤ Capacity Standby
- ➤ IBM Infrastructure on Demand
- ➤ On/Off Capacity Upgrades

■ *Offerings include:*

- ➤ High availability assessments
- ➤ Business continuity and risk management
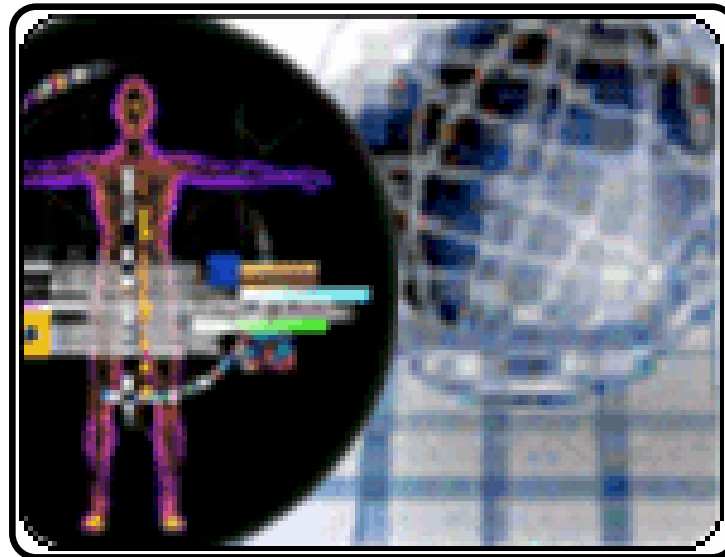- ➤ End-to-end availability services

■ Offerings Include:

- ➤ TOTAL Solution Financing
- ➤ Multi-vendor contracts
- ➤ Highly competitive rates with single invoice
- ➤ Upgrade and exchange offerings
- ➤ Asset Disposition and Disposal Services
- ➤ Open Infrastructure Offerings

Infrastructure Efficiency

An industry leader defining the future

Become more efficient over time
- availability
- skills
- systems mgmt

Business Attributes
- Responsive
- Variable
- Focused
- Resilient

Infrastructure Needs
- Integrated
- Open
- Virtualized
- Autonomic

Self-managing systems
Autonomic computing
Grid computing

Autonomic computing -
Self-managing systems that deliver.......

**Increased
Responsiveness**
Adapt to dynamically
changing environments

**Business
Resiliency**
Discover, diagnose, and
act to prevent
disruptions

Self-Configuring
Self-Healing
Self-Optimizing
Self-Protecting

Operational Efficiency
Tune resources and
balance workloads to
maximize use of IT
resources

Secure Information and
Resources
Anticipate, detect, identify,
and protect against
attacks

Delivering autonomic capabilities today with IBM^

- **Wireless System Configuration - SNAP**
- **Auto discovery and update of firmware**
- **Fibre Channel Login**
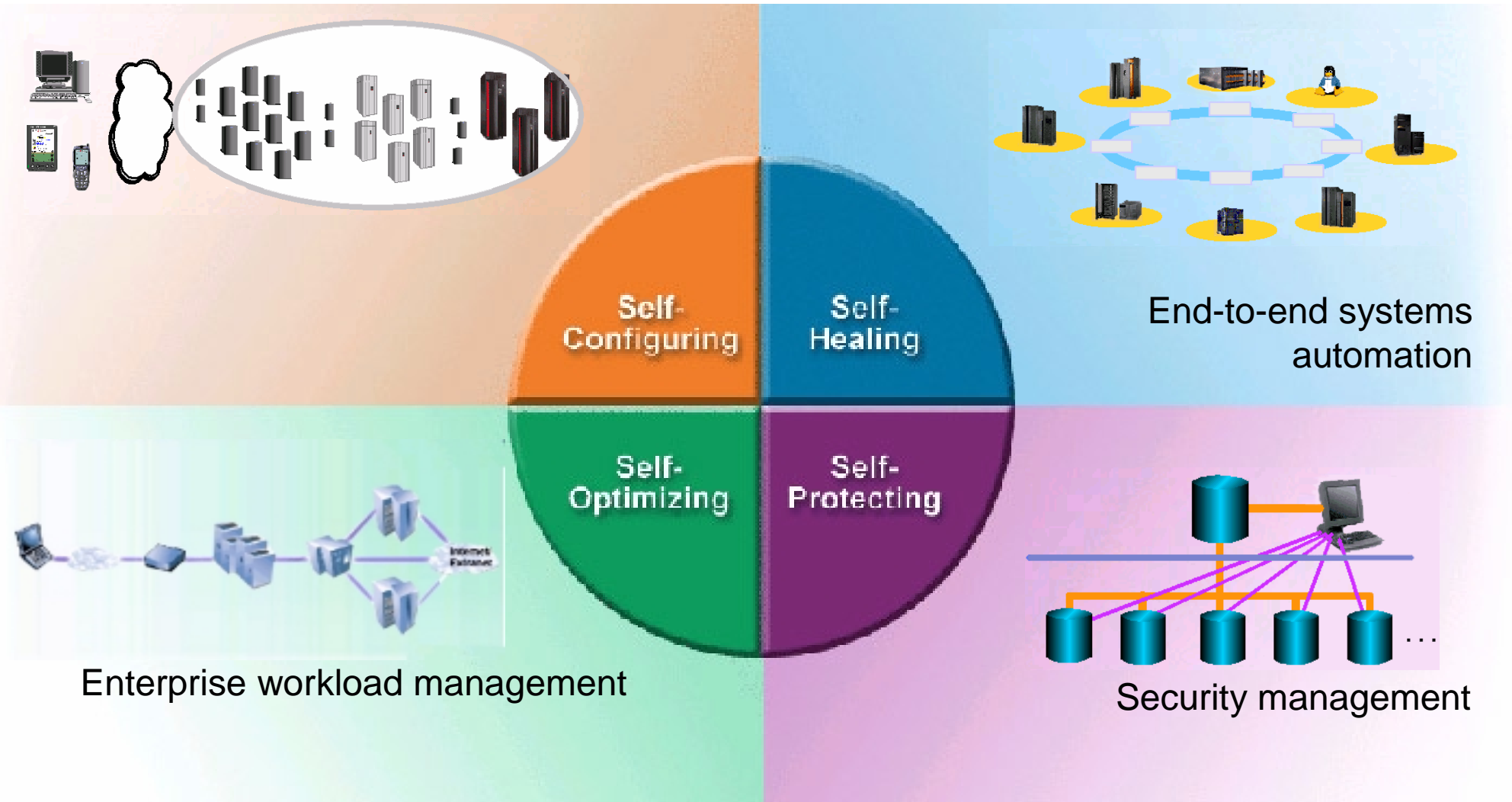- **DB2® Configuration Advisor**
- **IBM Director**

- **LightPath Diagnostics™**
- **Chipkill™ ECC Memory**
- **Dynamic bit- steering**
- **Automatic CPU Deallocation**
- **IBM Electronic Service Agent**
- **Virtual Help Desk**

Self-Configuring
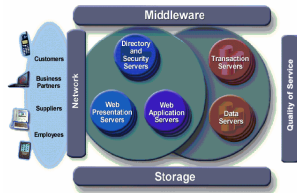
Self-Healing

Self-Optimizing

Self-Protecting

- **Dynamic LPAR**
- **Workload Management**
- **WebSphere Edge Server**
- **e-business Management Services**

- **Self-protecting kernel**
- **IBM Tivoli Identity Manager**
- **Enterprise Identity Mapping**
- **Digital signatures & intrusion detection**

And moving toward an e-business on demand infrastructure

Self-Configuring

Self-Healing

Self-Optimizing

Self-Protecting

End-to-end systems automation

Enterprise workload management

Security management

…

Grid Computing - The next step in utilizing networks

Resource Sharing

"The Grid"

- ➤ Distributed computing over a network, using open standards to enable heterogeneous operations
- ➤ Increased server utilization, collaboration and access to data

Information Sharing

The World Wide Web
- ➤ HTML page format, HTTP protocol, and Mosaic browser for document exchange
- ➤ Initially in universities; worldwide adoption

Network Sharing

Inter-networking and the Internet
- ➤ Inter-networking of regional networks with TCP/IP
- ➤ Began to replace regional alternatives
- ➤ Worldwide adoption

Networking

Networks
- ➤ Multiple regional networks linking computers
- ➤ Initially at universities and national labs

Integrate across the enterprise

JOHN DEERE

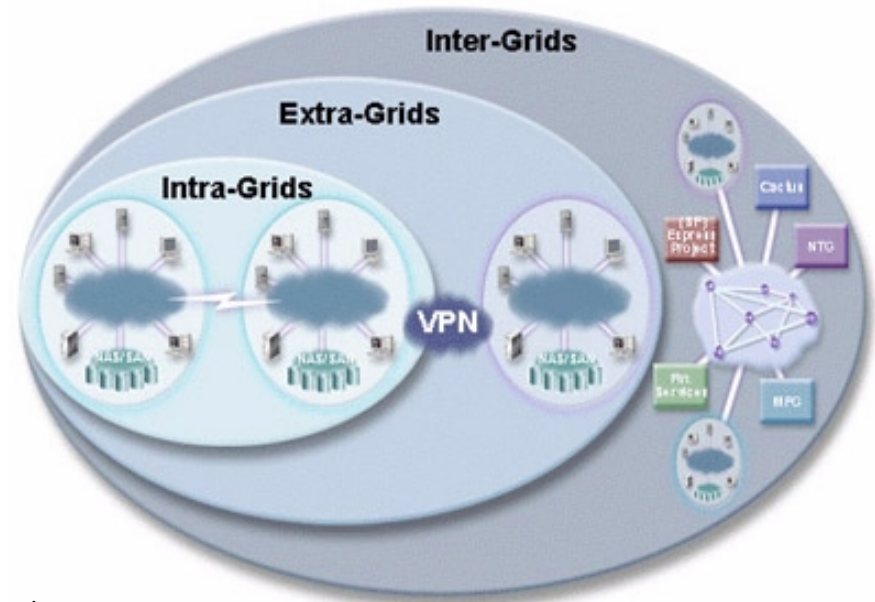National Digital
Mammography Archive

The TeraGrid

e-Diamond

IBM Grids
Server Design
Microprocessor Design
Benchmarking/Testing

Indiana
Virtual Machine

Aventis

- **All IBM ^ platforms provide a path for Grid-enablement**
  - OGSA standards packaged with all platforms
  - Automonic computing attributes enhance manageability of Grids
  - Leveraging WebSphere cross-platform capabilities
  - Linux available across all platforms

TCO Reduction

Someone to help me reduce total cost of ownership for IT

Manage overall project costs within budget

IBM ^   TCO
Proven savings

Business Attributes

- **Responsive**
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Infrastructure Needs

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IBM ^ helps to reduce total cost of ownership

Application Flexibility

Increased choice
Reduced vendor lock-in
Low integration costs

Technology Leverage

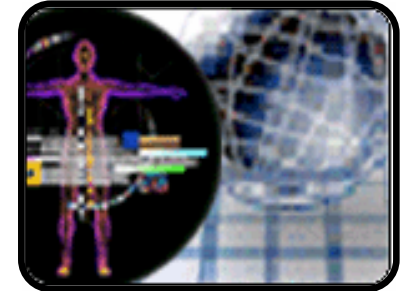Outstanding price/performance
Consolidate workloads
Flexible growth
Upgrade investment protection

Risk Mitigation

Reduced system downtime
Business continuity
Capacity upgrades
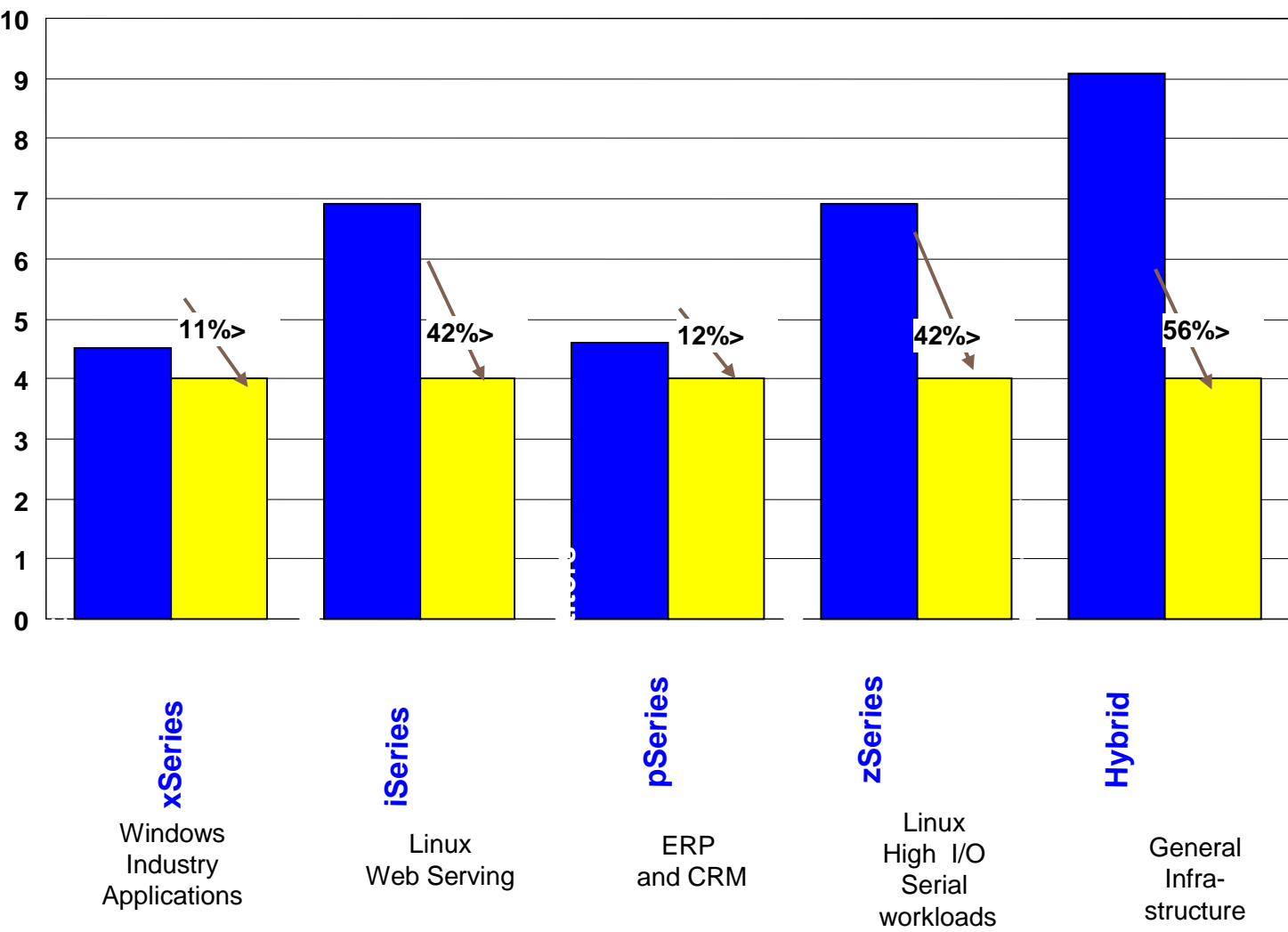Flexible acquisition options

Infrastructure Efficiency

High utilization of IT assets
Low management costs
Effective use of skills

TCO Reduction

IBM ^ solutions can have up to 56% lower overall TCO than competitors.... depending on the solution

An average $5M investment over 3 years on an IBM eServer solution can be anywhere from 11% to 56% lower than the competition.

11%>

42%>

12%>

42%>

56%>

xSeries

Windows
Industry
Applications

iSeries

Linux
Web Serving

pSeries

ERP
and CRM

zSeries

Linux
High I/O
Serial
workloads

Hybrid

General
Infra-
structure

"IBM is the only major vendor to play in all of these server categories," states ITG. "It is also the only vendor to have initiated a strategy for common cross-platform architecture that focuses on infrastructure capabilities."

Source: CIOview Corp 11/2002 and ITG 5/2002

■ Compet i t or

□ I BM ^

A winning choice with IBM^

- IBM gained share from HP - to lead with 30% of server market*
- Gained 2 pts. of share in UNIX*
- Fastest growing vendor in Intel servers, gaining 3 pts share *
- Fastest growing Linux vendor*

- 39% of processing power on TOP500 List of Supercomputers, Nov '02

- For the first time ever a single company, IBM, has taken the top rank for both Intel and UNIX server leadership in the Gartner Group's Magic Quadrant for midrange server vendors.

- "Best server of the year" in the 2002 InfoWorld Readers' Choice Awards

- "Best product" by PC World at the Linux Business Expo in Sydney

- First place overall win in the Midrange Servers category in the VARBusiness 17th Annual - Lifetime Achievement Award

- "Best Buy" by UK SMB magazine

- PC Magazine's 19th Annual Awards-
  - Technical Excellence for Network and Enterprise hardware categories
  - Editors Choice award
  - Technical Excellence in the Systems Software category-AC

- PC Expo Enterprise hardware and overall Best of Show

- Product of the Year from Network Magazine

- "Best hardware" at IDG/LinuxWorld

* IDC 3Q data

Building on infrastructure...

Evaluate applications and solutions	Select hardware platform	Install and integrate systems Train personnel Customer support	Become more efficient over time - availability - skills - systems mgmt	Manage overall project costs within budget

IBM ^ Initiatives

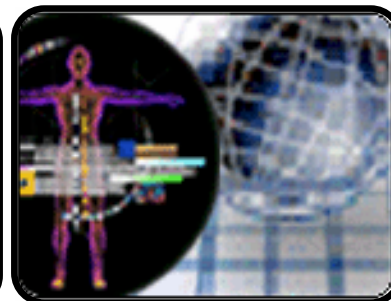| *Application Flexibility*	*Technology Leverage*	*Risk Mitigation*	*Infrastructure Efficiency*	*TCO Reduction*
Open standards	Performance	Team IBM	Self-managing systems	Low total cost

Meeting needs today sets the stage for e-business on demand

Application Flexibility

Technology Leverage

Risk Mitigation

Integrated

Open

Infrastructure Efficiency

Virtualized

Autonomic

TCO Reduction

Responsive

Variable

Focused

Resilient
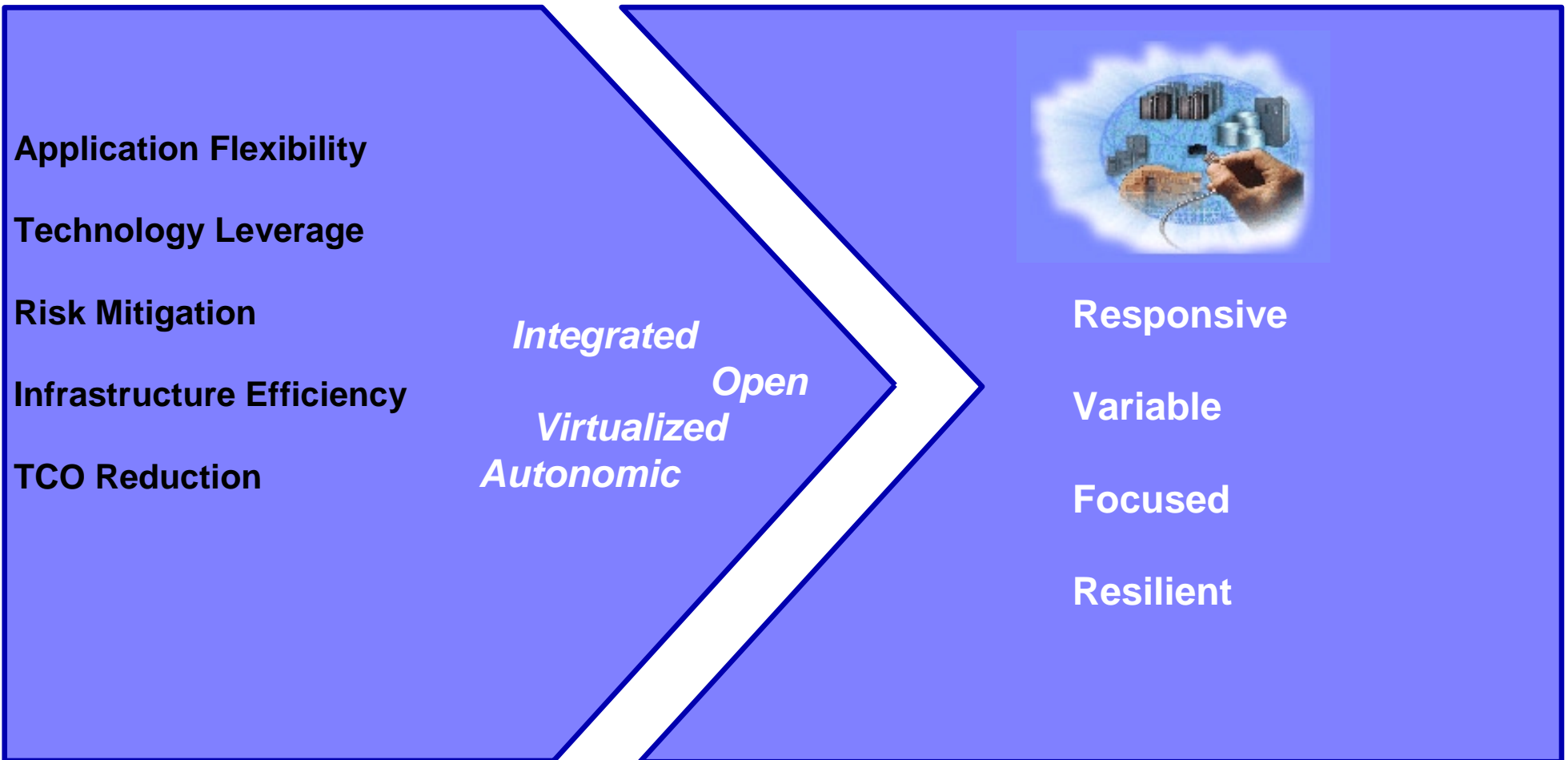
Considerations and next steps
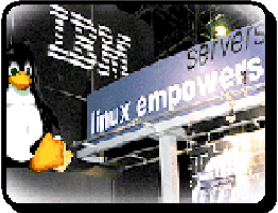
- **Enterprise application assessment**
- **Linux briefing center**
- **Industry standards action plan**

- **IT consolidation Align study**
- **Strategic assessment of blade servers**
- **Enterprise X-Architecture and IBM Director briefing**

- **Migration assessment from IBM**
- **Solution Connection and IBM TotalStorage Web sites**
- **IBM technical support and learning services portals**
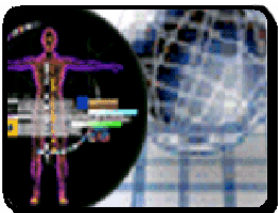
- **Information on eWLM and EIM**
- **OGSA standards for grid computing**
- **"On Demand" Assessment service**
- **IBM Storage Networking Web site**

- **TCONow! Assessment**