Why *i*? It's simple.

Kurt Rump
IBM Executive Briefing Center
Rochester, MN
ker@us.ibm.com

ON **DEMAND BUSINESS**™

iSeries Value Proposition

The world's most complete and secure integrated system designed to run thousands of business applications and simplify your IT environment so that you can save money and reinvest in growing your business.

ON DEMAND BUSINESS™

Why *i*?

- **Thousands of business solutions**

- **i5/OS – integration yields simplification and lower costs**

- **iSeries architecture – easy to secure and responsive to change**

- **Versatility**

ON DEMAND BUSINESS™

The IBM Charter for iSeries Innovation
Investing in the future of iSeries Clients, ISVs & Business Partners

- **Innovation**
  - Build on recent investments in iSeries ($1B in 2003/2004)
  - Secure leadership as the most complete solution for simplifying IT
  - Enhance the value of clients' and partners' existing investments

- **Solutions**
  - Broaden and enhance the portfolio of industry-specific solutions
  - Support a broad range of applications and tools
 - Promote and jointly market innovative iSeries solutions

- **Partnership**
  - Provide skills and expertise to facilitate on demand solutions
  - Stimulate partner teaming that encourages investment in skills
  - Encourage investment, offer rewards commensurate with value

ibm.com/iseries/charter

ON DEMAND BUSINESS™

i5/OS – Integrated and Optimized for Business

- **DB2 Universal Database for iSeries**
- **Multiple file systems – database and non-database (stream) files**
- **e-business and network infrastructure**
  - WebSphere Application Server – Express
  - Web server (powered by Apache) and related Internet protocols
  - Broad range of communications protocols and security methods
- **Security administration & enforcement**
- **Systems management**
  - Work management
  - Performance tools
  - Clustering
- **Online transaction processing**
- **File and print sharing for Windows clients**
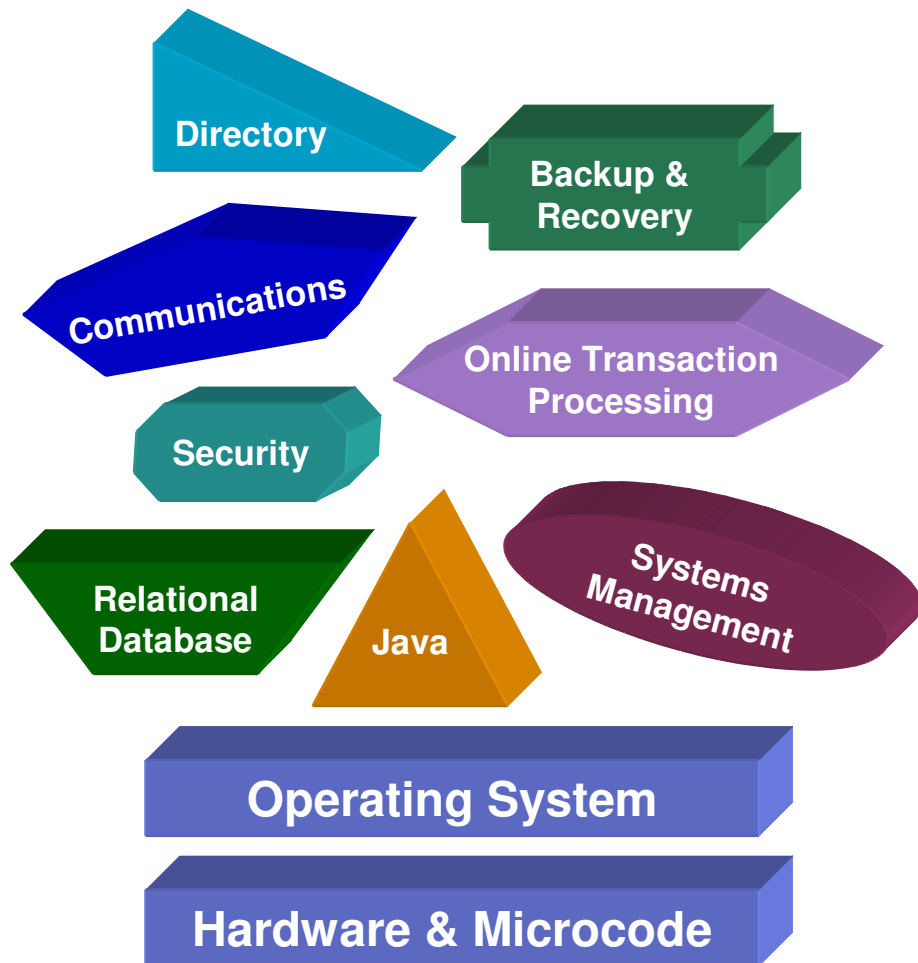- **Printing functions and services**

Integrated, Tested, Supported
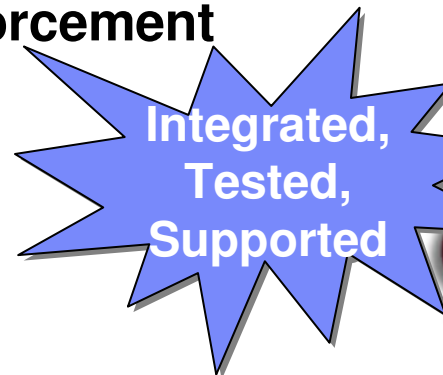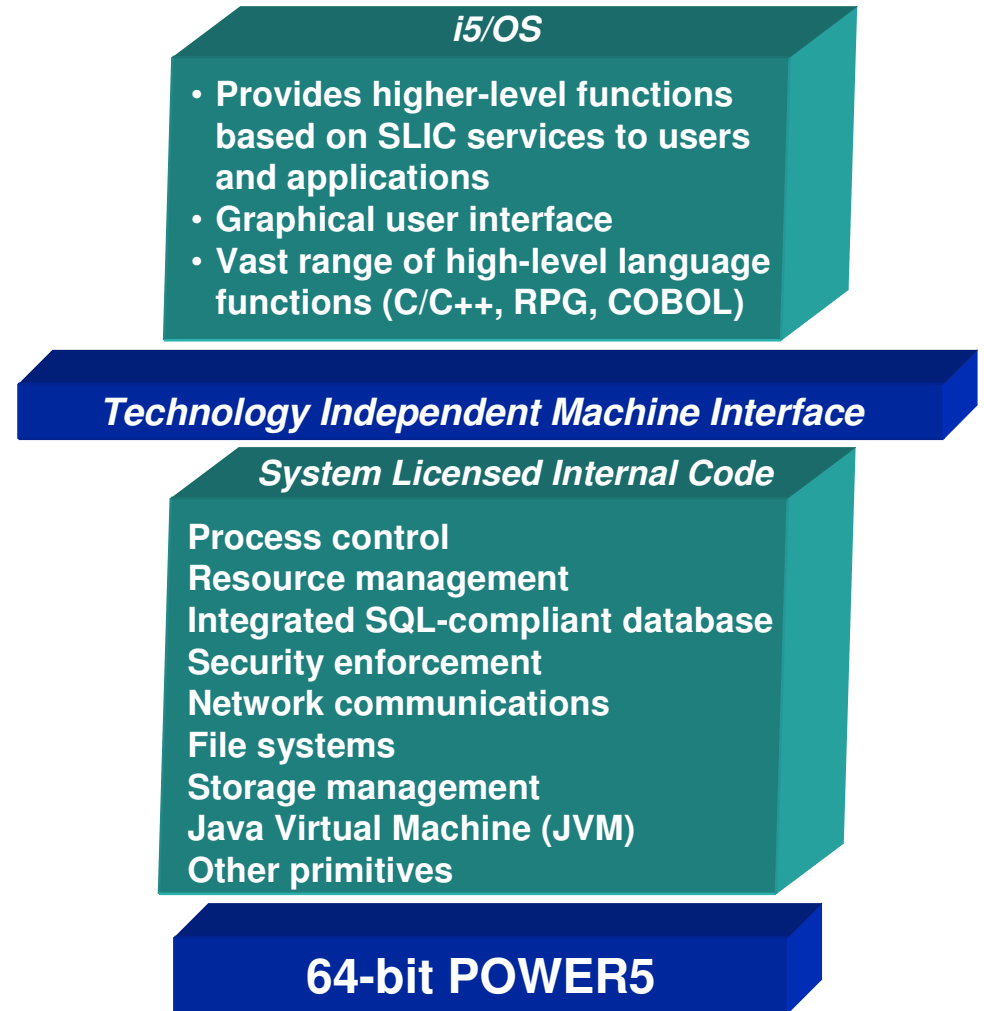
i5OS

WebSphere. software

DB2. Information Management Software

iSeries & i5/OS – Integrated by Design

Traditional Systems

Directory

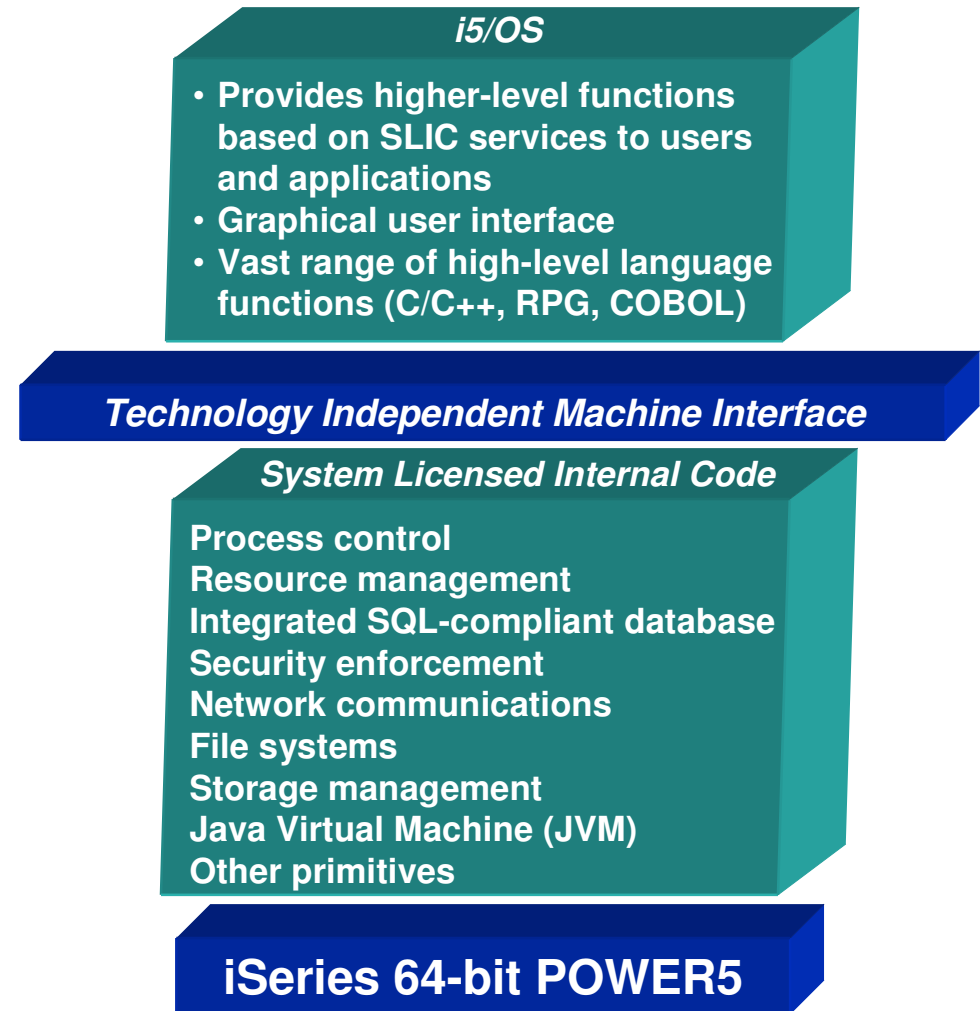Backup & Recovery

Communications

Online Transaction Processing

Security

Relational Database

Java

Systems Management

Operating System

Hardware & Microcode

iSeries

i5/OS

- Provides higher-level functions based on SLIC services to users and applications
- Graphical user interface
- Vast range of high-level language functions (C/C++, RPG, COBOL)

Technology Independent Machine Interface

System Licensed Internal Code

Process control
Resource management
Integrated SQL-compliant database
Security enforcement
Network communications
File systems
Storage management
Java Virtual Machine (JVM)
Other primitives

64-bit POWER5

ON DEMAND BUSINESS™

There's Real Value in Integration

- **Higher reliability**

- **Simplicity**

- **Optimization**

- **Automation**

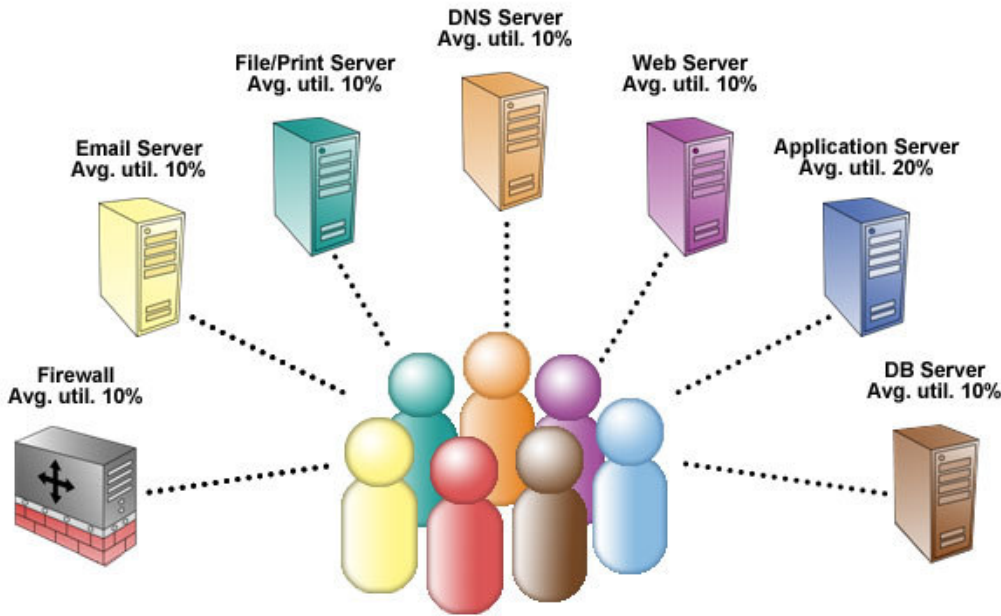- **Security - less effort, less cost**

- **Ease of operations**

- **Lower overall TCO**

iSeries

i5/OS
- **Provides higher-level functions based on SLIC services to users and applications**
- **Graphical user interface**
- **Vast range of high-level language functions (C/C++, RPG, COBOL)**

Technology Independent Machine Interface

System Licensed Internal Code

Process control
Resource management
Integrated SQL-compliant database
Security enforcement
Network communications
File systems
Storage management
Java Virtual Machine (JVM)
Other primitives

iSeries 64-bit POWER5

Integration yields simplicity

PC Servers:
Multiple workloads, multiple servers

iSeries:
Multiple workloads, <u>one</u> server

DNS Server
Avg. util. 10%

File/Print Server
Avg. util. 10%

Web Server
Avg. util. 10%

Email Server
Avg. util. 10%

Application Server
Avg. util. 20%

Firewall
Avg. util. 10%

DB Server
Avg. util. 10%

Database

Application

Web

i5OS

DNS

File/Print

Email

Firewall

Linux

More…
- Licenses
- Complexity
- Staff
- Money

Less…
- Manageable
- Efficient
- Flexible
- ROI
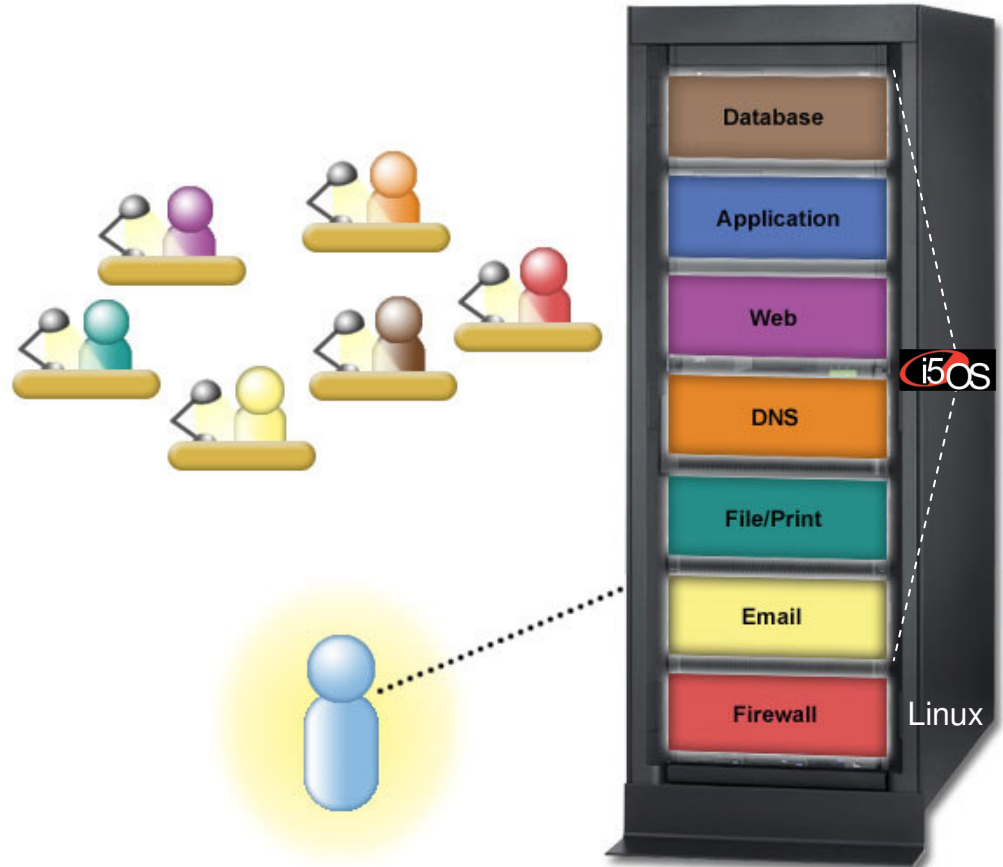
- Reduce costs by increasing asset utilization
- Redeploy talent to manage your business, not your infrastructure
- Simplify operations and improve ROI

Integration yields ease of operations

iSeries Navigator

- Manage multiple iSeries systems

- Monitor performance, jobs, messages, B2B activity, files and more

- Collect & display hardware/software inventories

- Manage software fixes

- Perform basic operations

- Extensive work management and scheduling

- Configuration & resource management

- Database administration

- User administration, security & auditing

- Network configuration & management

ON DEMAND BUSINESS™

Integration yields lower total cost of ownership
As researched and reported by independent consultants

META Group: Impact of OS/Platform Selection on the Cost of ERP Implementation, Use and Management

IDC: Reversing the Trend of Rising IT Costs

IDC: TCO for Distributed Server Environments

IDC: TCO for Lotus Domino Servers

IDC: Server Cost of Ownership in ERM Customer Sites

2005

2004

IDC: TCO for Distributed Server Environments

2003

2002

ITG: Cost/ Benefit Cases for IBM eServer i5 Servers: PeopleSoft EnterpriseOne and World Solutions

2001

IDC: The ROI of Windows and Linux Server Consolidation on iSeries

2000

1999

1998

1993

- Different times
- Different workloads
- Same conclusion: ***OS/400* = lowest TCO**

*OS/400 was renamed to i5/OS with the announcement of V5R3

TCO = Total Cost of Ownership

Why *i*? It's simple.

ON DEMAND BUSINESS™

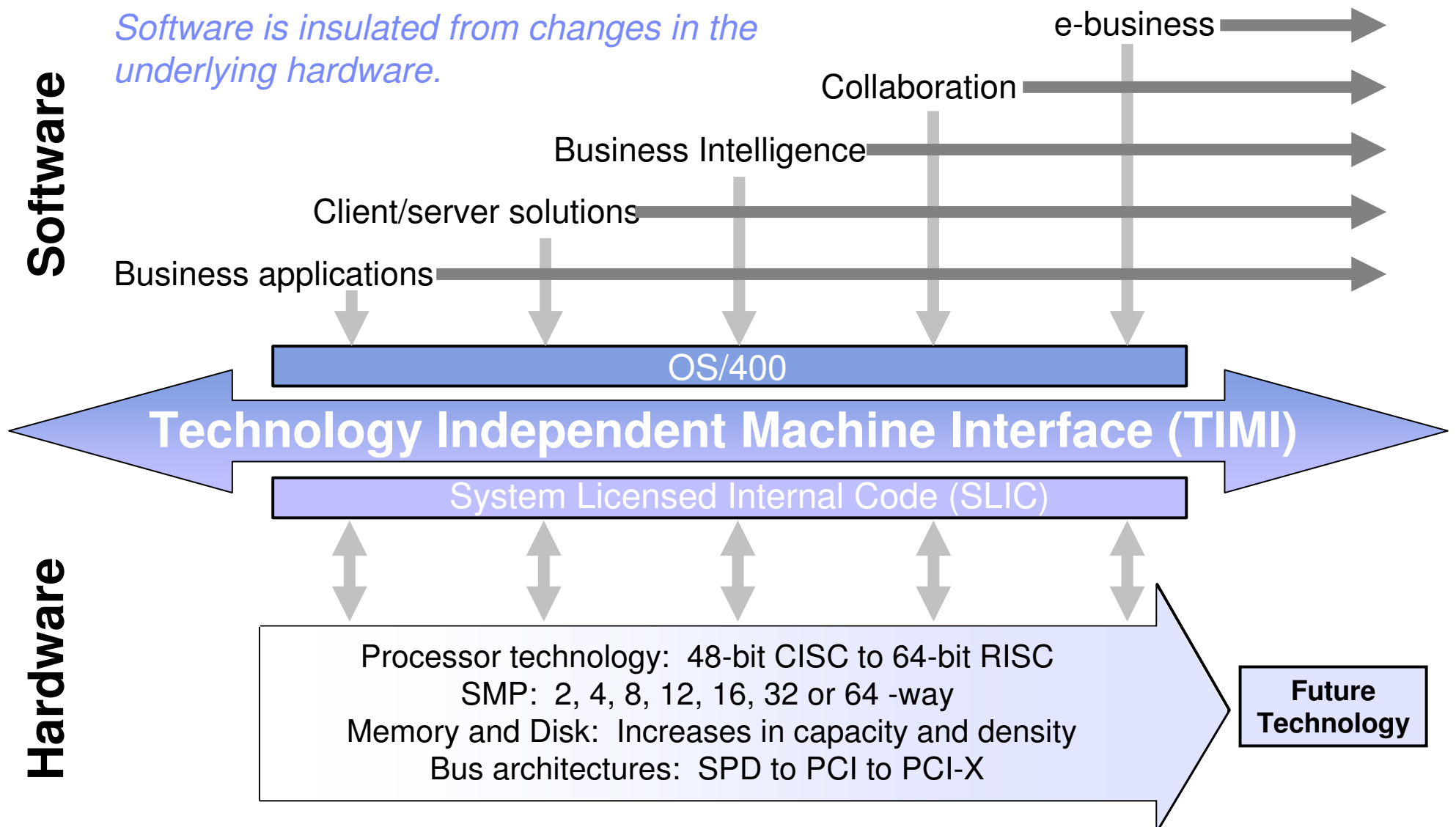# iSeries is Object-based and Easy to Secure

- **i5/OS keeps all information as objects**

- **The object type determines how the object contents can be used**
  - Hundreds of object types
  - Provides integrity, reliability and authorization constraints
  - Powerful, yet manageable

- **Offers advantages compared to the simple byte-string, file-based manipulation used in most systems**
  - iSeries program objects are, by design, highly virus-resistant
  - It is easier and less costly to implement, enforce and audit a security policy which calls for access control and data integrity

ON **DEMAND BUSINESS**™
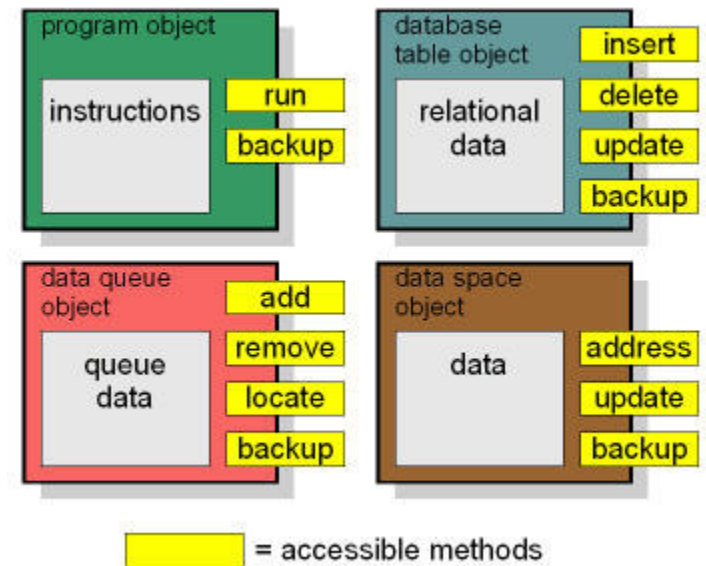
Other Environments are Technology Dependent

Software

e-business

Collaboration

Business Intelligence

Client/server solutions

Business applications

Hardware

Applications and Operating Systems are typically "hardware aware". Consequently, changes in the underlying hardware usually impact the software, requiring modifications or rewrites.

ON DEMAND BUSINESS™
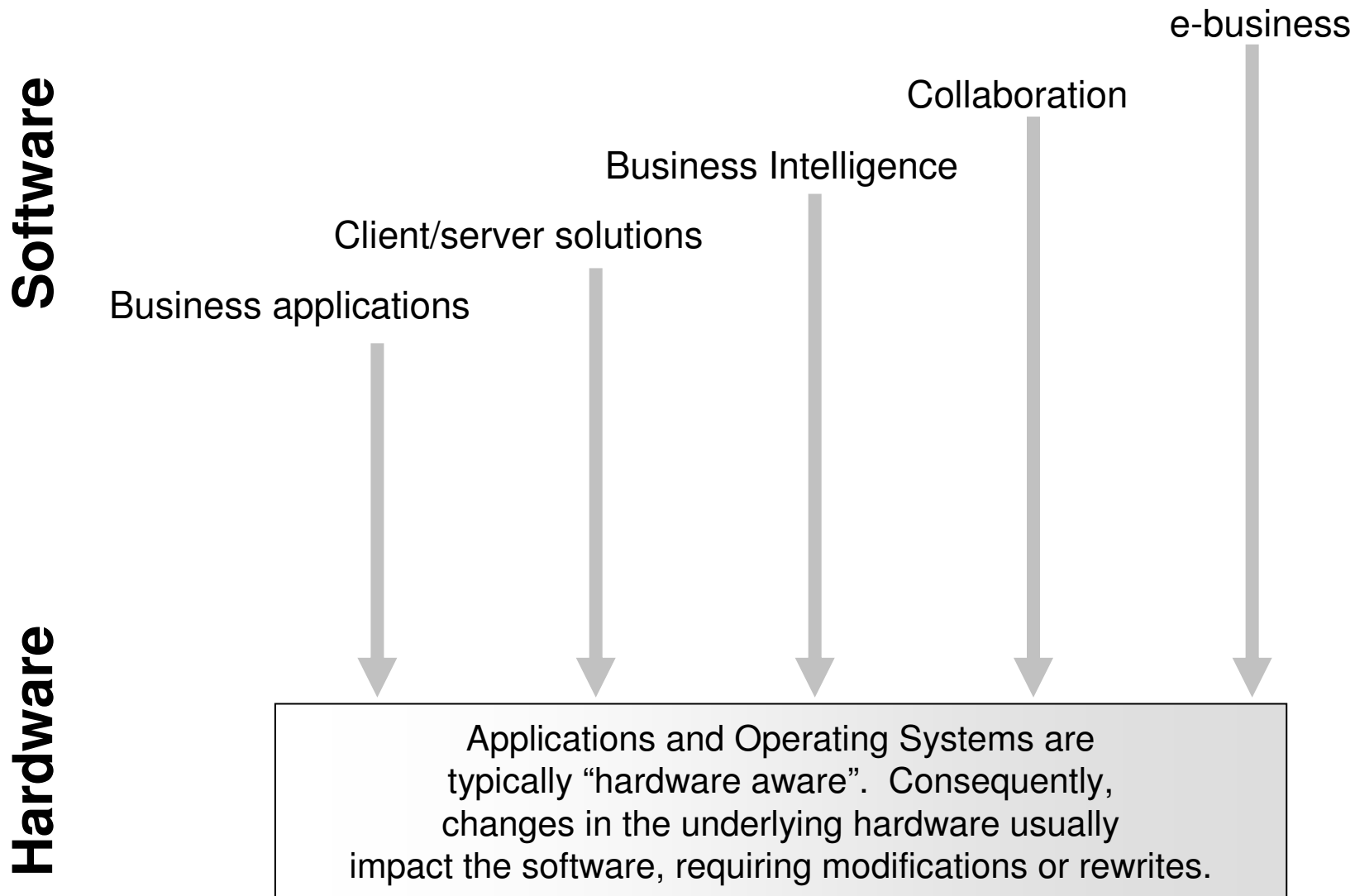
iSeries Architecture – Responsive to Change

Software

Software is insulated from changes in the underlying hardware.

e-business

Collaboration

Business Intelligence

Client/server solutions

Business applications

OS/400

Technology Independent Machine Interface (TIMI)

System Licensed Internal Code (SLIC)

Hardware

Processor technology: 48-bit CISC to 64-bit RISC
SMP: 2, 4, 8, 12, 16, 32 or 64 -way
Memory and Disk: Increases in capacity and density
Bus architectures: SPD to PCI to PCI-X

Future Technology

Those who truly understand this don't want anything else.

ON DEMAND BUSINESS™

A Product of Continuous Innovation

AS/400 and iSeries Model Life

Model	Type
Bxx	1988–1995 (CISC)
Cxx	1990–1997 (CISC)
Dxx	1991–1997 (CISC)
Exx	1992–1998 (CISC)
Fxx	1993–1999 (CISC)
2xx/3xx	1995–1999 (CISC)
4xx/5xx	1996–2000 (RISC)
6xx	1997–2001 (RISC)
7xx	1999–2003 (RISC)
270/820/830/840	2001–2006 (RISC)
800/810/825/870/890	2003–2006 (RISC)
520/550/570/595	2005–2006 (RISC)
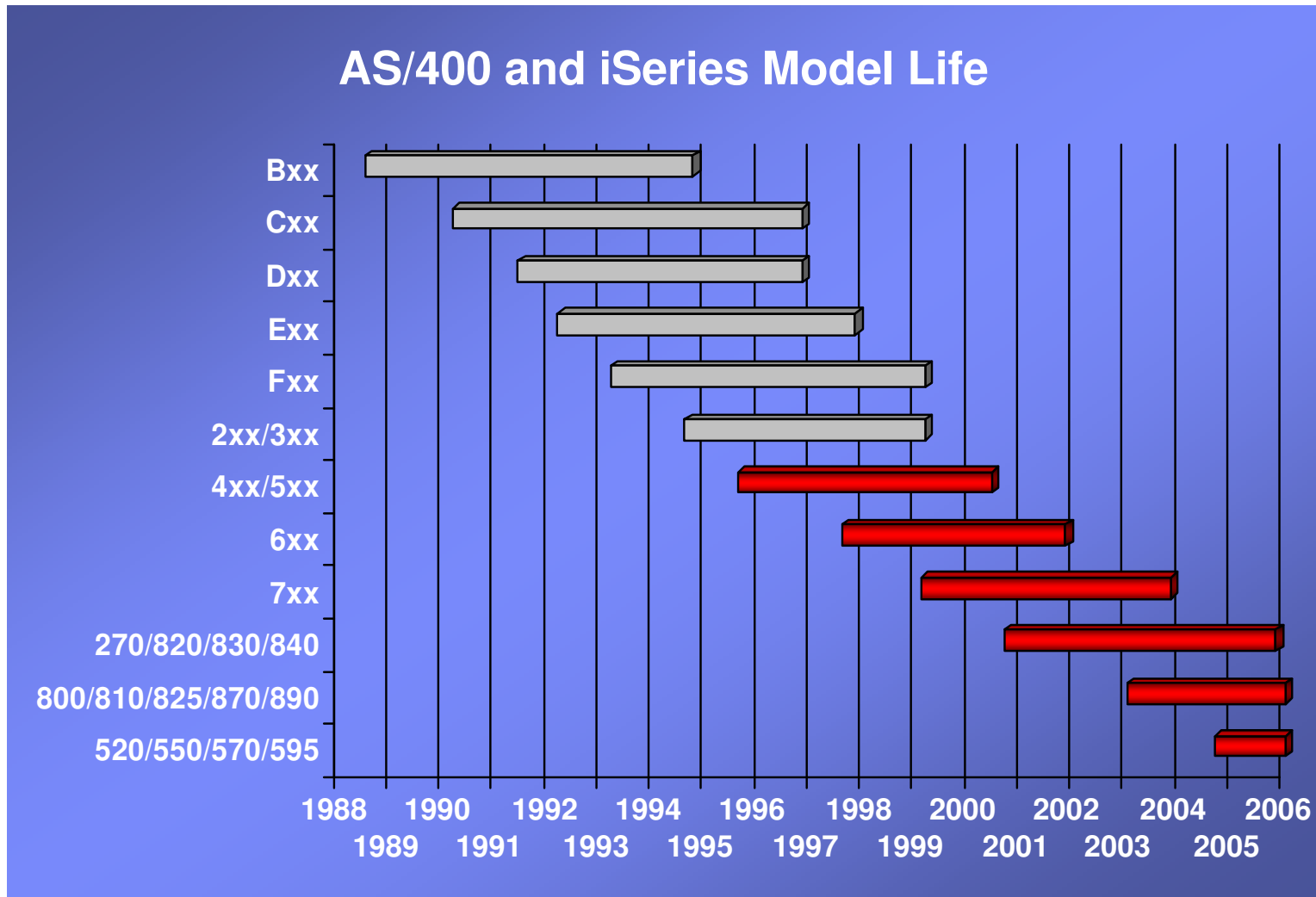
= 48 bit CISC   = 64 bit RISC

ON DEMAND BUSINESS™

iSeries Meets Diverse Requirements

Business Size & Requirements

Large

Mid-size

Small

Requirements:
- **Secure**
- **Easy to operate**
- **High performance**
- **Self-managing**
- **Reliable & available**
- **Capacity for growth**
- **Solutions portfolio**
- **Versatile**

Requirements:
- **Secure**
- **Highly scalable**
- **Strong management tools**
  - ▶ **Multiple systems**
  - ▶ **Storage resources**
  - ▶ **Logical partitions**
  - ▶ **Performance**
- **Interoperability**
- **High utilization**
- **Business continuity**

Simple, few technical skills   **Sophisticated, skilled IT staff**

Technology Infrastructure & Complexity

On Demand Operating Environment

- **Align information technology with business priorities**

- **Enable business flexibility and responsiveness**

- **Reduce cost**

- **Improve asset utilization**

- **Address new business opportunities**

i5/OS   Linux   AIX 5L   Windows   Linux

Virtual I/O

Virtual Ethernet

POWER Hypervisor

@server xSeries

@server i5

Integration / Virtualization / Automation

ON DEMAND BUSINESS™
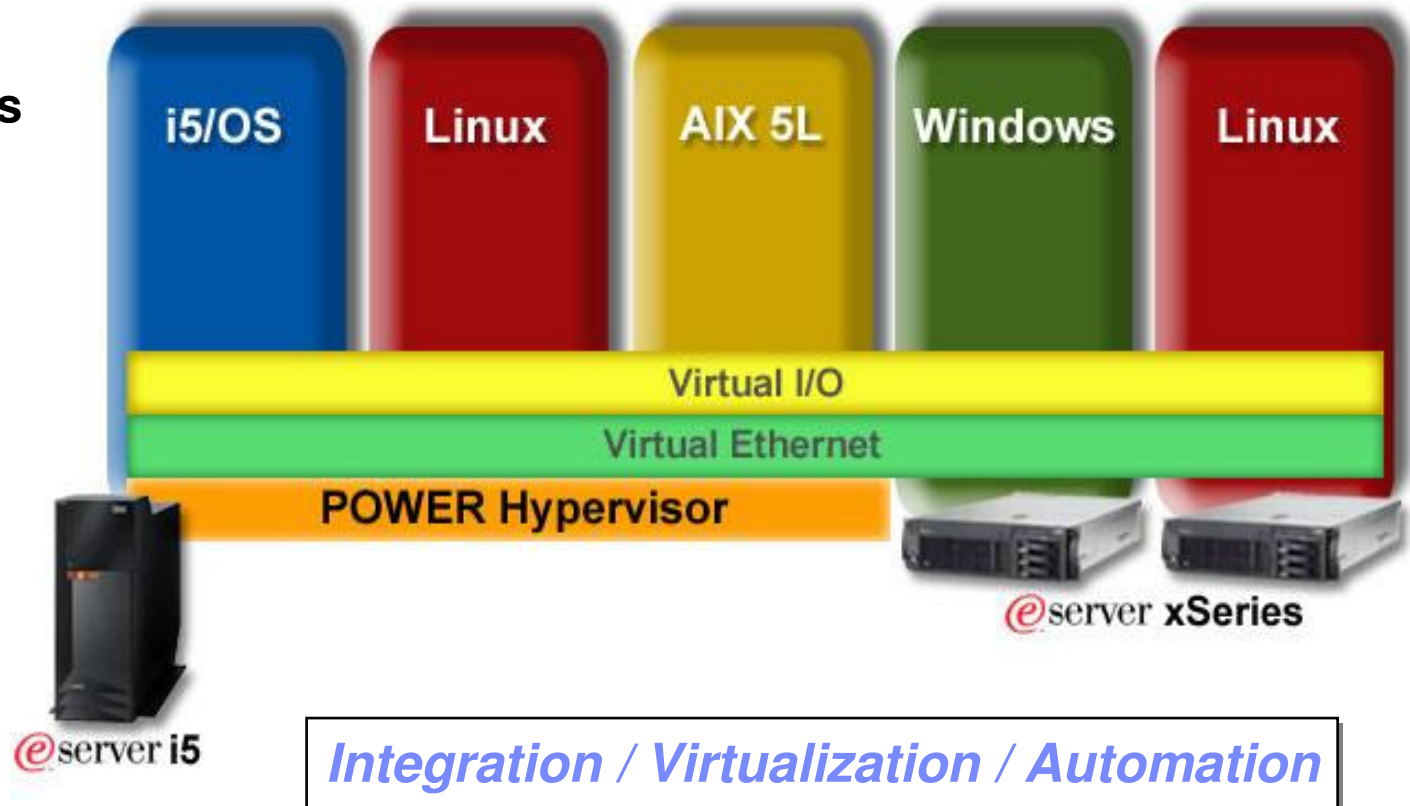
Why *i* now?

- **Extract maximum value from existing hardware investment**

- **Benefit from the economics of Moore's law**

- **Anticipate new workloads, arrest server sprawl**
    - Vertical scalability
    - Flexible resource allocation
    - Some workloads require more processing power

- **POWER5 more versatile for managing partitioned workloads**
    - Eliminates the "base" partition requirement for i5/OS
    - Manage partition resources with policies and automation
    - Only POWER5 hardware supports AIX on iSeries

- **Capacity on Demand**

- **iSeries Editions offer flexibility in function and value**

Infrastructure Consolidation Reduces Costs

"Consolidating our UNIX applications on AIX 5L along with i5/OS, and Domino, in multiple partitions on a single server has delivered IT infrastructure cost savings of 40%. The eServer i5 offers flexibility, performance, and scalability options to match our aggressive business plan for growth. This is the vision that the industry has been looking for!"

Ken Andre
CIO Greif

GREIF

Greif is a world leader in industrial packaging products and services. With over 175 operating locations in more than 40 countries, Greif is positioned to serve local, national or multinational customers where they do business.

ON DEMAND BUSINESS™

On Demand Business...

Grows faster

- *Genuine Parts Distributor* nearly tripled sales via internet to $5.2 million per month
- *REI's* multi channel strategy led to an overall sales increase of 1%, more than $8 million, in the first year

Spends less to run the business

- *Wesco Aircraft* reduced operational costs by 20% while enabling 24x7 availability
- Internal Engine Parts Group achieved a 10% reduction in sales expense

Increases customer satisfaction

- *GHY International* became more responsive to customers and business needs while improving productivity and utilization rates
- *Washington County's* Web portal is more responsive to employees and constituents

ON **DEMAND BUSINESS**™

Why *i*? It's simple.

- **Fostering growth and innovation in solutions**

- **There's real value in integration**
  - Higher reliability
  - Simplicity
  - Optimization
  - Automation
  - Security
  - Ease of operations
  - Lower overall TCO

- **The architecture securely paves the way for technology leadership without disrupting your business**

- **Versatility to respond to opportunities and grow your business**

ibm.com/eserver/iseries

ON DEMAND BUSINESS™

The Financial Implications of an iSeries Solution

June, 2005

Joel Knudson (jnknuds@us.ibm.com)
Americas iSeries Sales Executive, Enterprise Sales

ON DEMAND BUSINESS™

Worldwide IT Spending is <u>NOT</u> Growing
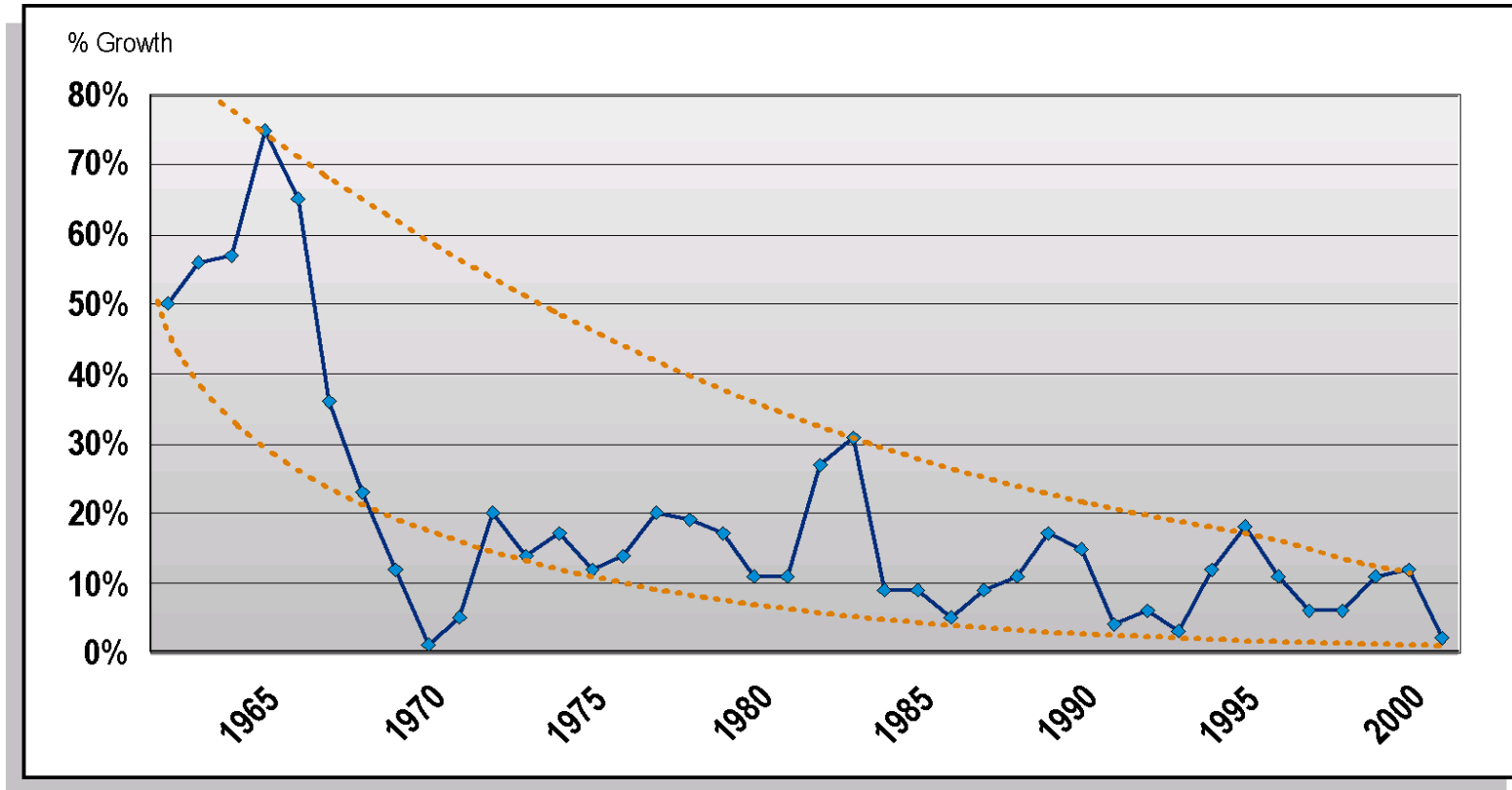
Source: IDC

38% of IT Customers Expect 2005 IT Budgets To Remain The Same or Less as 2004

ON DEMAND BUSINESS™

And Customers Must Solve The 2005 Cost^3 Equation

1. Cost of Acquisition ... Current Budget Limitations

• Upfront server, operating system and middleware price

  ▶ Solution Packaging, Lease Offerings, Deferral, Hidden Replace Costs

2. Cost of Ongoing Operations ... Rising Costs of IT Management

• Ongoing cost of skills to deploy and manage solutions

  ▶ Support Functions Account for More Than 80% of IT Costs

3. Cost of Technology Transition ... Change WILL happen!

• Long term application & platform investment costs

  ▶ New Technologies Often Equal Conversion Projects

In multiple studies conducted by various analysts at different points in time, measuring a variety of enterprise workloads and topologies, iSeries (and AS/400) consistently demonstrated a **lower total cost of ownership** when compared to UNIX- and Intel-based alternatives

ON DEMAND BUSINESS™

Enterprise Customer Feedback to IBM:

- *Top challenges heard from CIOs & senior IT executives today are:*

Client Needs and Pressures

- **IT Budget Pressure**

- **Reduce complexity & cost**

- **Improve Service Levels**
  - ✓ Resource Utilization
  - ✓ Reliability & Availability

- **Business On Line**

Action

- **Server Consolidation & Utilization**
  - ✓ Minimize HW & SW Maintenance Costs

- **Elimination of Planned Downtime**
  - ✓ Quicker ROI, Better Asset Utilization

- **Address unplanned outages**
  - ✓ Business Continuity

- **Disaster Recovery**
  - ✓ Business Requirement!

- **On Demand & Utility Computing**

ON DEMAND BUSINESS™

While Technology Change is Still Accelerating

High-End Growth

Cost/Performance

70% CGR

High End

Low End

00 01 02 03 04

Hardware
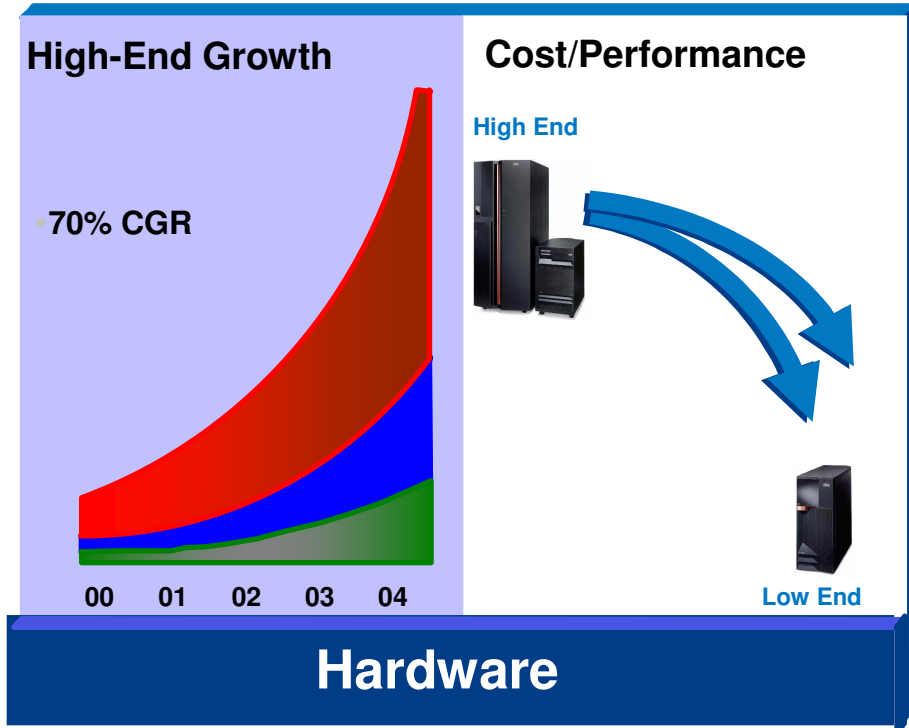
Processor:
August 1997 - 9406-620/#2182
(CPW 464) = $480,000
May 2004 - 9406-520 #0900
(CPW 500/512MB Mem/70GB) = $11,354

Disk Storage:
April 1988 = $28.70/MB
May 2004 = $.05/MB...or less

Main Storage:
April 1991 = $1,125/MB
May 2004 = $1.30/MB

Relative Power
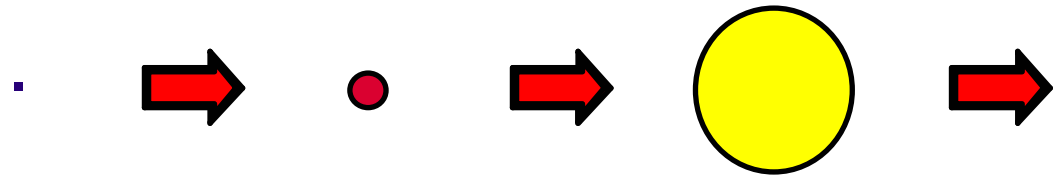
Date

Rating

June, 1988	June, 1995	September, 1998	January, 2003
CPW 14	CPW 299	CPW 4550	CPW 37400

* CPW ~ rPerf ~ MIPs

ON DEMAND BUSINESS™

And iSeries Carries IBM Customers Forward...

- Never a Technology-Induced Conversion

Expanding Roles

Management

Scalability

Enterprise Edition SW

ebusiness on Demand

Linux

Capacity on Demand

PASE AIX V5R3

Silicon On Isulate (SOI)

Hot-Pluggable PCI / HSL

Graphical DB Mgmt (35.16GB 15K UltraRd)

Websphere Commerce Suite

Logical Partitioning LPAR

Continuous Operations Clustering

DB2/400 Encoded Vector Indexes Parallelism

TCPIP Improved Again

Full RISC Exploitation

8-Way 12-way SMP

Firmly Coupled Parallel DB

High Speed Wide Area Network

Integrated PC Server Firewall NT

Multiple OS Env-ironments DOMINO

RISC

Massively Parallel

New Client/Server Tools

32 Loosely Coupled Processors

Networking Enhance.

Multimedia Image Technology

RISC

Object-Oriented Enhance.

New System Architecture 64-bit RISC

OS/400 Enhancements SLIC

Database Parallellism

SMP

Advanced

System Clustering

Opticonnect

Case & OO Tools

Relational DB+

PC Connect+

Multimedia File Server

POSIX

Advanced Series

Client/ Server

32MG RISC Chip

Server Models

1st To Ship RAID-5

Datamation Product of the Year

Open Systems Standards

1st to Use 16MB Memory Chips

200,000 Shipped in 4 Years

E Models

PC and Host Connectivity

New Sys Architecture Bipolar

N-Way Processor

TCP/IP Ethernet

D Models

20,000 Business Solutions

1st to Ship 3.5 inch HDA's

C Models

Integrated Operating System

New System Architecture CMOS Relational Database

B Models

F Models

CPW	14	57	97	177	299	350	510	650	2340	4550	16500	20200	37400
	1988		1991	1992	1993		1995		1997	1999	2000	2001	2003	2004

APPLICATION AND INVESTMENT PROTECTION

MAINTAIN SAME SERIAL NUMBER

INTEGRATED OPERATING SYSTEM TO MAXIMIZE SKILLS AND REDUCE STAFFING

32/48 TO 64 BIT ADDRESSING ARCHITECTURE (and beyond) -- TECHNOLOGY INDEPENDENT / NO CONVERSION

The Value of Technology Upgrades (1997)

Customer "A" -

B60 (CPW 5.2) =	$229,500
less 1997 Residual Value	$ 100
SUBTOTAL	$229,400
+ New 9406-500/#2141 (26.9)	$ 38,000
	=======
TOTAL EXPENSE	**$267,400**

Customer "B" -

B30 to D35 to E35 to F35 to #2041 to #2141 =	$108,000
	=======
SAVINGS DELTA	**$159,400**

** Prices include base processor expense only. Tiered software pricing and HW maintenance should also be factored in.

The Value of Technology Upgrades (2001)

Customer "A" -

Used 620 (CPW 464.3) =	$ 75,000
(Acquired in 1999 - 15% of new price)	
+ Upgrade to 9406-820 #2396 / #1542 =	$257,000
(CPW 950/560)	
TOTAL EXPENSE	**$332,000**

Customer "B" -

New 9406-720 #2062/ #1502 =	$127,000
+ Upgrade to 9406-820 #2396 / #1541 =	$142,400
TOTAL EXPENSE	$269,400
SAVINGS DELTA	**$ 62,600**

** These prices include base processor expense only. Tiered software pricing should also be factored in.
The used 620 would incur maintenance while a new 720 would have a full year of warranty.

ON DEMAND BUSINESS™

And Continuous Availability is More Easily Justified

Questions	
Company Annual Revenue	$350M
Company Annual Profit	$14M
Planned Annual Downtime	32 hrs
Prior Year Unplanned Downtime	76 hrs
Average concurrent users supported?	100
Average User Annual Compensation ($25/hr)	$50,000
Estimated employee DT productivity (%)?	50%
Calculated profit loss during DT (per hour)	$1600
Hours of Operation per day?	24
Days of Operation per year?	365
Hours of work per employee per week?	40
Weeks of work per employee per year?	50
Prior Year UPDT Additional Costs	$50,000

- Overtime ($3.75K/hr) , Penalties, External Support, Emergency Plan Activation

Downtime (DT) Factors & Costs

Annual Revenue Per Hour	$40K
Annual Profit Per Hour	$1,600
Planned Downtime Cost (Profit)	$51,200
Prior Year Unplanned Downtime Cost (Profit)	$121,600
Outage Costs Based On Revenue	$3.04M
Unplanned DT Salary Costs (100 x $12.5 x 76)	$95,000
Agreed Upon HA Costs	$317,800

- Unplanned ($50K + $51.2K + $121.6K + $95K)

Additional Justification (Business Initiatives)	$225,000

- Business Intelligence Project ($150K)
- Developer Server Partition ($75K)

TOTAL JUSTIFICATION: $543K

cut $ spend
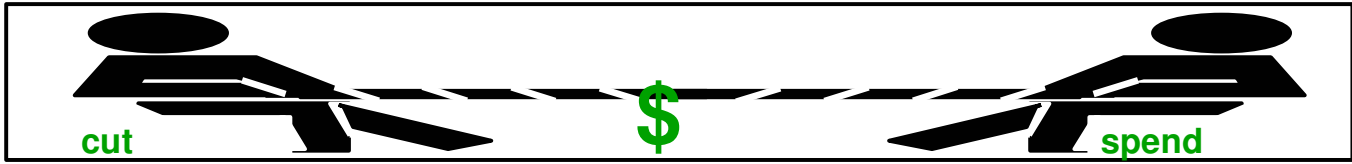
How Far Can You Stretch Your Service Levels Without Planned Availability!

Point of View Paper – Landing Page
http://www-1.ibm.com/servers/eserver/iseries/pov/

Why *i*? It's simple.

ON DEMAND BUSINESS™

Why *i*?

- **Thousands of business solutions**

- **i5/OS – integration yields simplification and lower costs**

- **iSeries architecture – easy to secure and responsive to change**

- **Versatility**

ON DEMAND BUSINESS™

Trademarks and Disclaimers

ON DEMAND BUSINESS™