Building a Better Infrastructure
With IBM Middleware on System p

Introduction

Introducing Service Oriented Finance

We are a successful business that has grown rapidly.

However, IT is now becoming a roadblock to our growth.

**Service Oriented Finance
CEO**

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Data Centers at Service Oriented Finance

Business Growth has led us to this mess!

Service Oriented Finance CIO

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Data Centers at Service Oriented Finance

… and this mess

Service Oriented Finance CIO

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Internal IBM Consolidation Project – Distributed Cost Per Server

Annual Operations Cost Per Server
(Averaged over 3917 Distributed Servers)

Power	$731
Floor Space	$987
Annual Server Maintenance	$777
Annual connectivity Maintenance	$213
Annual Disk Maintenance	$203
Annual Software support	$10,153
Annual Enterprise Network	$1,024
Annual Sysadmin	$20,359
Total Annual Costs	$34,447

$34,447 !

These annual operating costs are consuming my budget

There's nothing left for new projects

The largest cost component was labor for system administration - 7.8 servers per headcount @ $159,800/yr/headcount

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Data Centers at Service Oriented Finance

Too many servers…
Not enough floor space…
High power consumption..
Overheating…
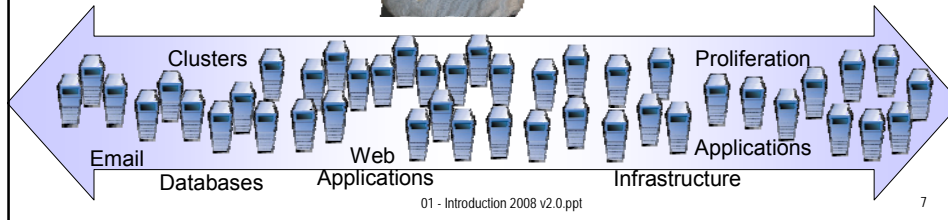Spiraling staff costs…
Late projects…

I need to fix this!

Service Oriented Finance
CIO

IBM Software and System p Can Reduce IT Clutter

Reduce Data Center Complexity by Scaling-up and Consolidating
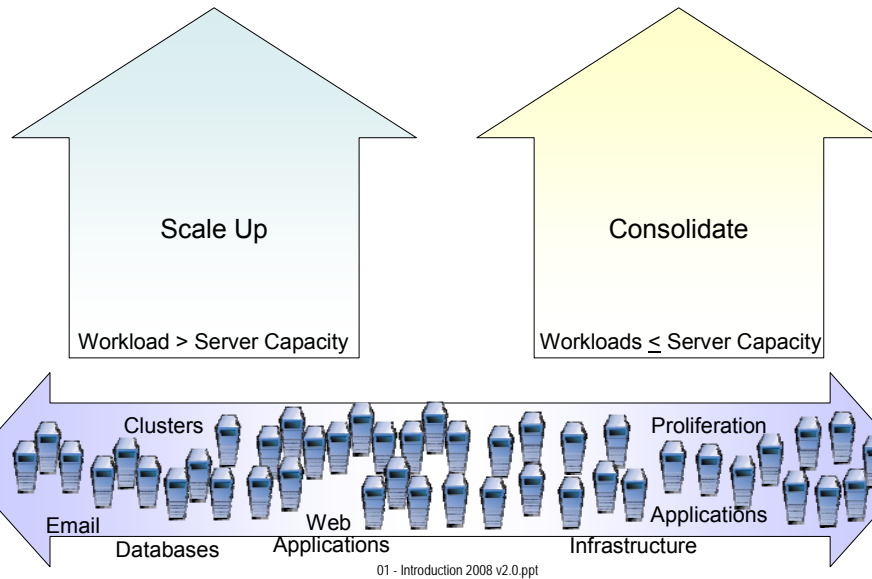
JEBSEN & JESSEN Benefits From Scale-Up and Consolidation

Challenges

- Migrate business critical SAP environment to a new database
- Consolidate physical server infrastructure
- Drive down TCO

Solution

- Replace seven HP-UX servers with three IBM System p servers running IBM AIX
- Implement SAP ERP on IBM DB2

Jebsen & Jessen SEA doubles performance and cuts 20 percent from TCO with DB2 on System p5

"We felt that the IBM hardware was technically superior."

- Roy Lim, Operations Manager – Jebsen & Jessen SEA

"The migration of our SAP ERP environment to IBM DB2 on IBM System p5 servers has delivered improved performance and availability."

- Gopal Varutharaju, Director – Information Technology Jebsen & Jessen SEA

IBM Middleware Runs on Many Platforms

IBM Software Efficiencies

Software designed to save the business money

Superior software performance benchmarks

Better administrator productivity
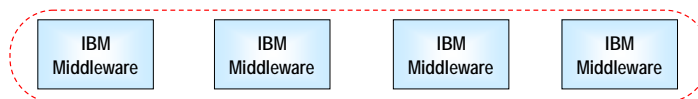
| IBM Middleware | IBM Middleware | IBM Middleware | IBM Middleware |

| HP | System p | Dell | Sun |

System p Has The Best Hardware Performance

Application
IBM Middleware
AIX, Linux
System p

IBM System p
- Superior performance
- Scale Up capabilities
- Consolidation via PowerVM

HP   **System p**   **Dell**   **Sun**
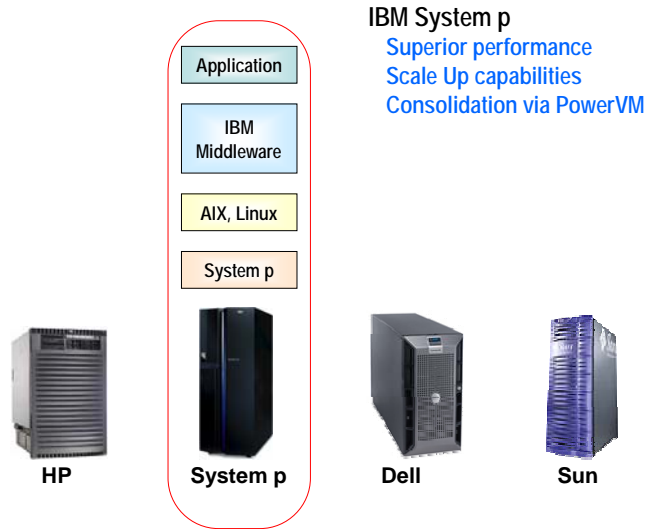
An Unbeatable Combination for TCO

IBM Middleware Plus IBM System p –
The best combination for optimized IT

Application
IBM Middleware
IBM Middleware
IBM Middleware
IBM Middleware

AIX, Linux
System p

A successful solution needs to consider both hardware and software

HP   **System p**   **Dell**   **Sun**
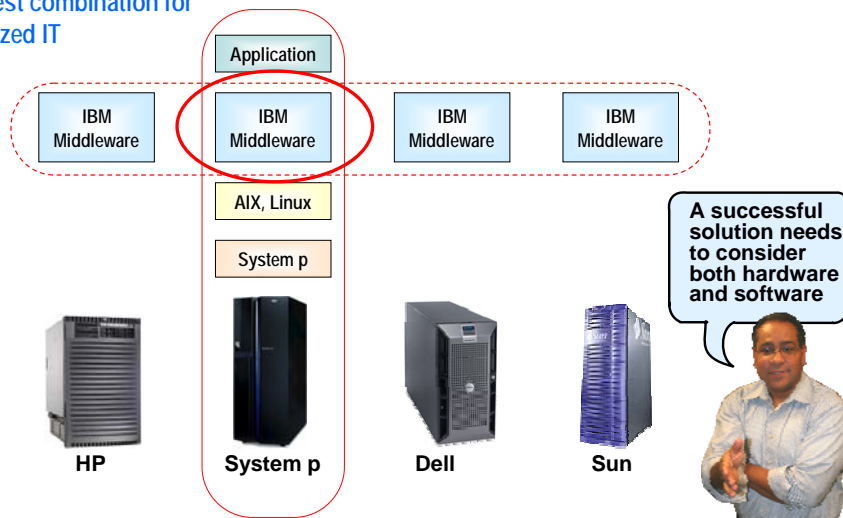
Why is IBM Middleware + System p the Best Solution to Simplify Your IT Environment?

- **Fast powerful System p servers that can handle several workloads**

- **Software designed to lower cost and improve flexibility**
  - ▶ Designed with business costs in mind
  - ▶ Integrated software environment
  - ▶ Software designed to take advantage of a fast server
    - − DB2, Lotus, WebSphere, Tivoli, Rational
  - ▶ Software designed to easily consolidate workloads

- **Software management to simplify and contain labor costs**

- **Net result - great price/performance and reduced complexity**

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New POWER6 Breakthrough Performance!

60% more throughput than POWER5+
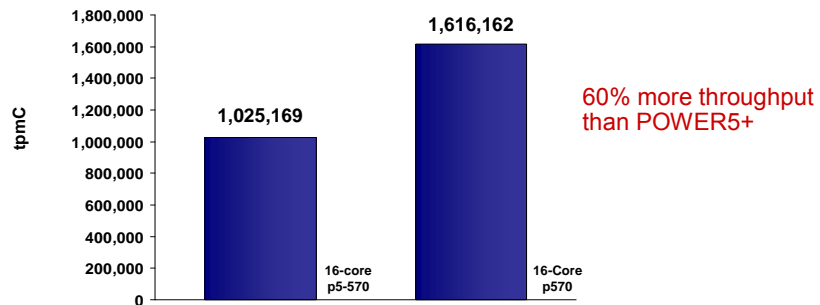
System	IBM p5-570 POWER5+	IBM p570 POWER6	
Processor	POWER5+	POWER6	
Chips	8	8	
Cores	16 @ 2.2GHz	16 @ 4.7GHz	Breaks the 4 GHz milestone
Threads	32	32	
tpmC	1,025,169	1,616,162	
$/tpmC	$4.43	$3.54	20% reduction in cost
Avail. Date	5/31/06	5/21/2007	

Source: www.tpc.org

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System p Designed to Easily Scale-Up or To Consolidate

- **Scale-Up Features**
  - ▶ Up to 64 core SMP server
  - ▶ Simultaneous multi-threading
  - ▶ Larger page sizes
  - ▶ Hardware decimal floating point
  - ▶ Dynamic reconfiguration to deliver capacity on-demand

- **Consolidation Features**
  - ▶ Hardware virtualization with hypervisor support
  - ▶ Dynamic resource allocation
  - ▶ Up to 10 logical partitions per core
  - ▶ Storage protection keys
  - ▶ Virtual I/O
  - ▶ Linux support
  - ▶ PowerVM Lx86
  - ▶ Live partition mobility

IBM Middleware Is Designed to Save the Business Money

WebSphere

Extend the value of applications and business processes with SOA

Build Business Capability Faster

Information Management

Integrate data and enterprise content to leverage information on demand.

Better Business Decisions

Lotus.

Enables businesses to communicate, collaborate and increase productivity

Employees Respond to Business Challenges Effectively

Rational.

Govern software and systems delivery

Development Efficiency and Project Success

Tivoli.

Manage infrastructure, operations and IT processes, to more effectively deliver services aligned to business goals

Continuous Business Operation

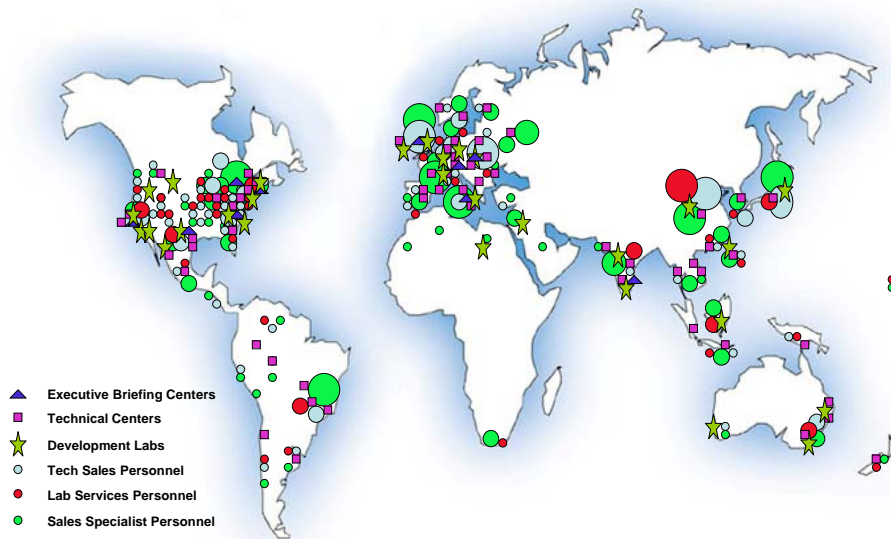## IBM Provides a Simplified, Integrated and Open Middleware Stack

IBM Consistent Programming Model on an integrated stack	ORACLE + BEA		
	Confusing Product Choices	Two programming models	Years of migration confusion
Collaboration		Collaboration	WebCenter
Portal	Plumtree or WebLogic?	Oracle Portal Control Logic	Oracle Portal Content
Enterprise Service Bus	Aqualogic Service Bus	Oracle Integration Interconnect	Human Task Services
WebSphere Process Server	Which one? WLI, ALSB or Fuego	Oracle Workflow in Application Suite	BPEL Process Manager
WebSphere Adapters	Third Party Adapters	EBSuite Adapters	Third Party Adapters Technology Adapters
J2EE	J2EE	PL/SQL	J2EE
WebSphere Application Server	WebLogic Application Server	Oracle Application Server	

IBM Middleware – Designed to Work Best on System p

- **DB2**
  - ▶ Optimizations to exploit large page sizes, decimal floating point, Simultaneous Multi-threading, storage protection keys
  - ▶ Recovery integration, first failure data capture

- **Lotus**
  - ▶ Integrated collaboration environment that can support more than 15,000 users on a single System p server
  - ▶ IBM's internal mail system is deployed with Domino on System p

- **WebSphere**
  - ▶ Takes advantage of System p 64 bit architecture and large memory to provide enhanced performance by caching, just-in-time compilation etc.
  - ▶ WebSphere provides flexible deployment options that can take advantage of System p virtualization and partitioning
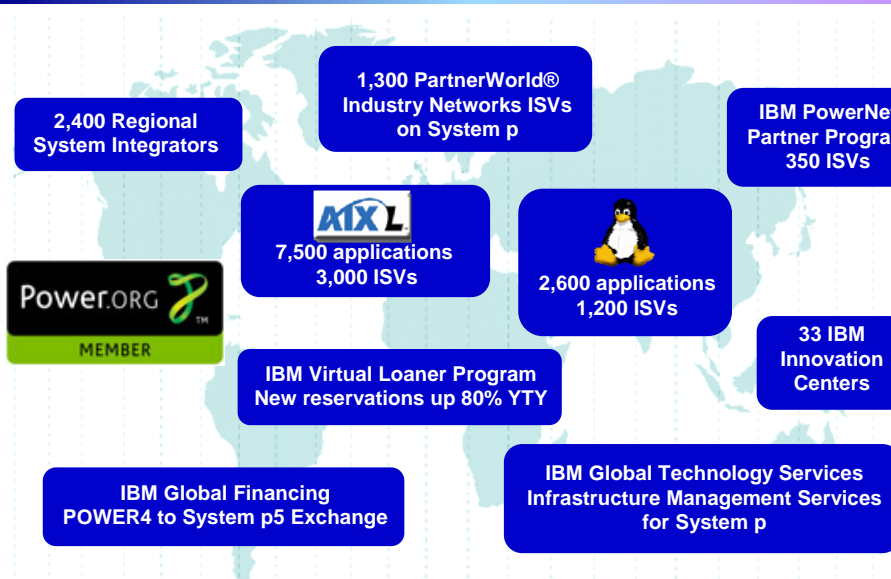
IBM Has Skilled People Near You

- ▲ Executive Briefing Centers
- ■ Technical Centers
- ★ Development Labs
- ○ Tech Sales Personnel
- ● Lab Services Personnel
- ● Sales Specialist Personnel

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System p Worldwide Ecosystem

**1,300 PartnerWorld®
Industry Networks ISVs
on System p**

**2,400 Regional
System Integrators**

**IBM PowerNet
Partner Program
350 ISVs**

**AIX L
7,500 applications
3,000 ISVs**

**2,600 applications
1,200 ISVs**

Power.ORG
MEMBER

**33 IBM
Innovation
Centers**

**IBM Virtual Loaner Program
New reservations up 80% YTY**

**IBM Global Financing
POWER4 to System p5 Exchange**

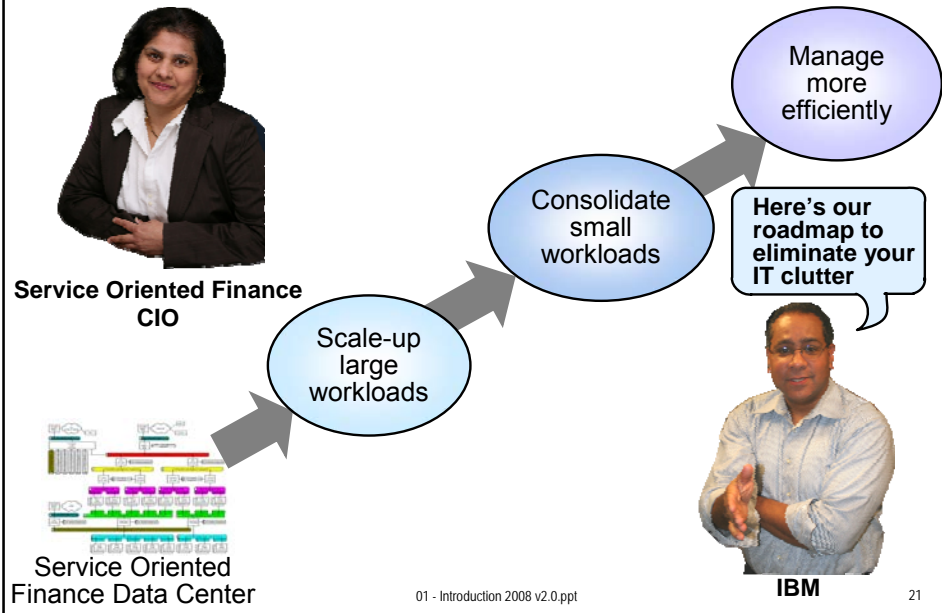**IBM Global Technology Services
Infrastructure Management Services
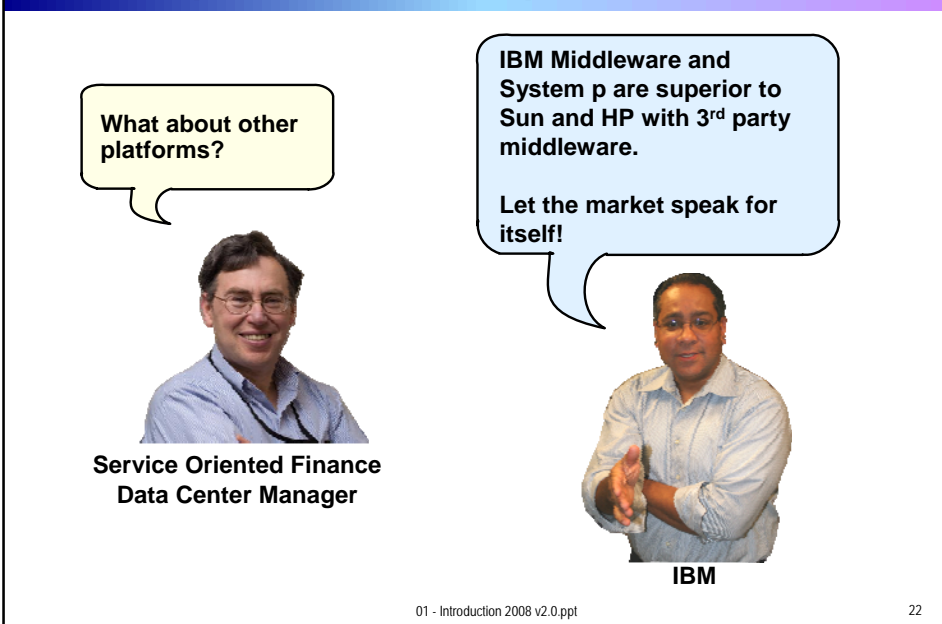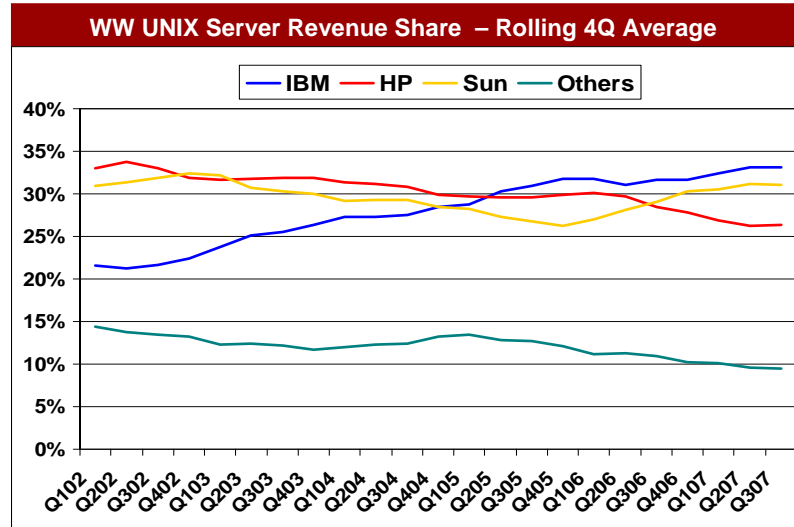for System p**

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Three Steps to Optimizing IT

IBM Outperforms the Competition

Unix Server Rolling Four Quarter Average Revenue Share

WW UNIX Server Revenue Share – Rolling 4Q Average

Legend: IBM — HP — Sun — Others
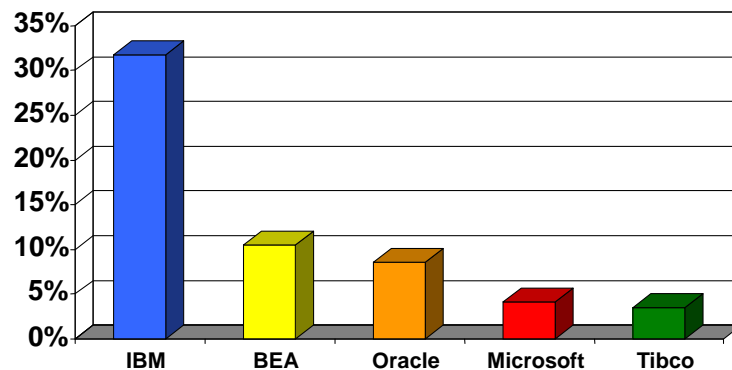
IDC Worldwide Quarterly Server Tracker November 2007

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IBM Is the World's Largest Middleware Vendor

WW Middleware Revenue Market Share

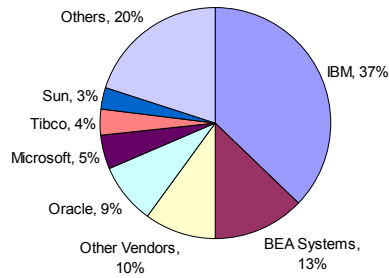Categories: IBM, BEA, Oracle, Microsoft, Tibco

Source: Gartner Group, "Market Share: Portal, Process and Middleware Software, Worldwide, 2004-2006," June 27, 2007

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IBM Middleware Leads in Key Indicators

Others, 20%

Sun, 3%

Tibco, 4%

Microsoft, 5%

Oracle, 9%

Other Vendors, 10%

IBM, 37%

BEA Systems, 13%

challengers — leaders

BEA Systems

Microsoft

IBM
Oracle

SAP

Red Hat

Fujitsu

Hitachi

InterSystems

TmaxSoft

Software AG

Compuware

NEC

Tibco

Sun

Cordys

webMethods

Kingdee

Magic Software Enterprises

niche players — visionaries

ability to execute

completeness of vision

Highest Application Integration Middleware Market Share

Best Middleware Vendor

Source: AIM and Portal Software, Worldwide, 2005, Gartner   Source: Gartner magic quadrant on Application Infrastructure, May 2007

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SHOW ME MORE!

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Agenda

- Introduction
- POWER Hardware Improves Utilization and Reduces Costs
- Break
- Reduce Database Complexity and Improve Performance with DB2
- Simplify Collaboration Services with Lotus Domino
- Lunch
- Consolidation Through Virtualization Saves Space, Energy and Costs
- Simplify Sprawling Web Tiers To Scalable WebSphere Servers
- Break
- Manage Datacenter Services With Best Practices
- IT Accounting in a Virtualized Environment
- IBM Middleware on System p - An Unbeatable Combination for TCO

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