Building a Better Infrastructure With IBM Middleware on IBM Power™ Systems

Introduction

Introducing Service Oriented Finance

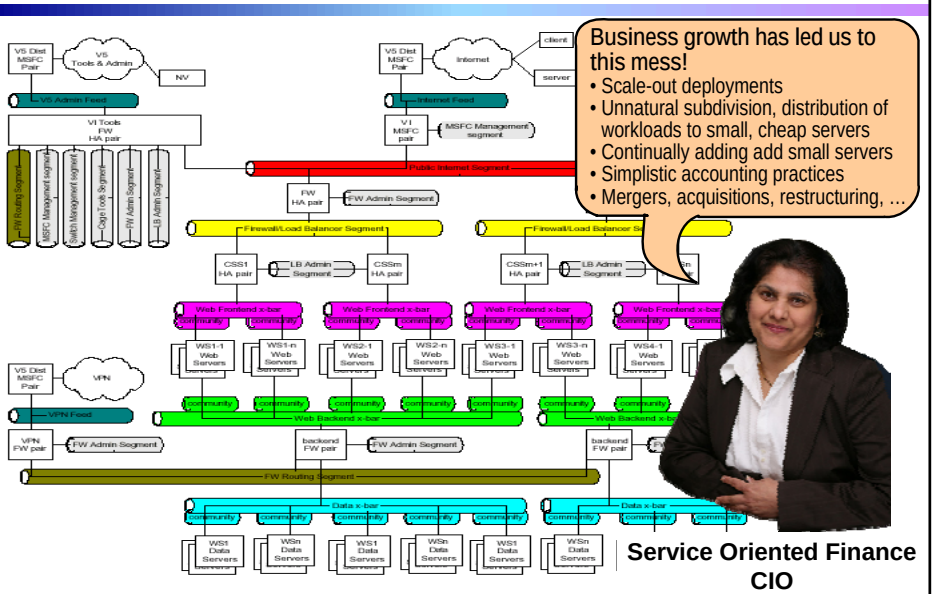
We are a traditional bank with branch offices throughout the country.

Banking competitors are taking away our customers.

My IT department can't produce the new solutions we need fast enough.

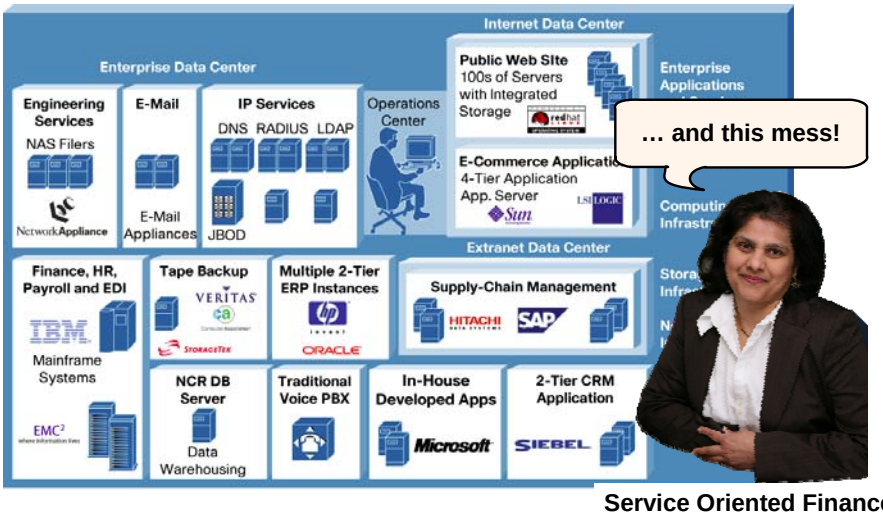
Service Oriented Finance CEO

Data Centers at Service Oriented Finance



Service Oriented Finance CIO

Data Centers at Service Oriented Finance



Service Oriented Finance CIO

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 System Administration	$20,359
Total Annual Costs	$34,447

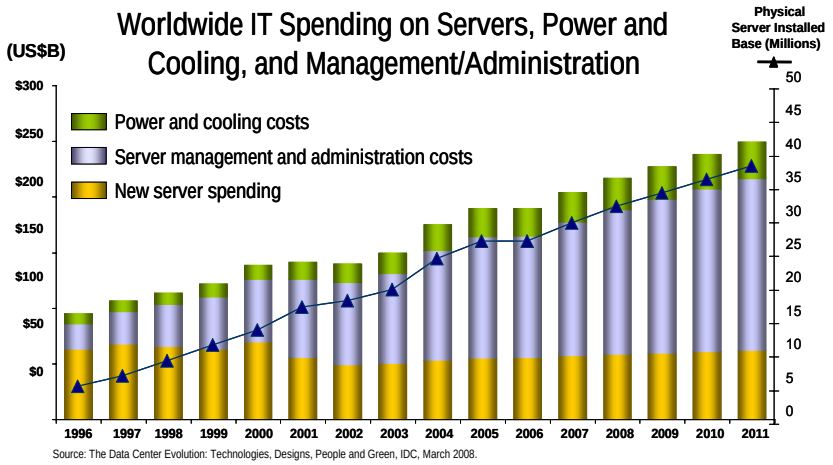
$34,447!

These annual operating costs are consuming my budget.

There is nothing left for new projects!

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

Rising Server Management Costs

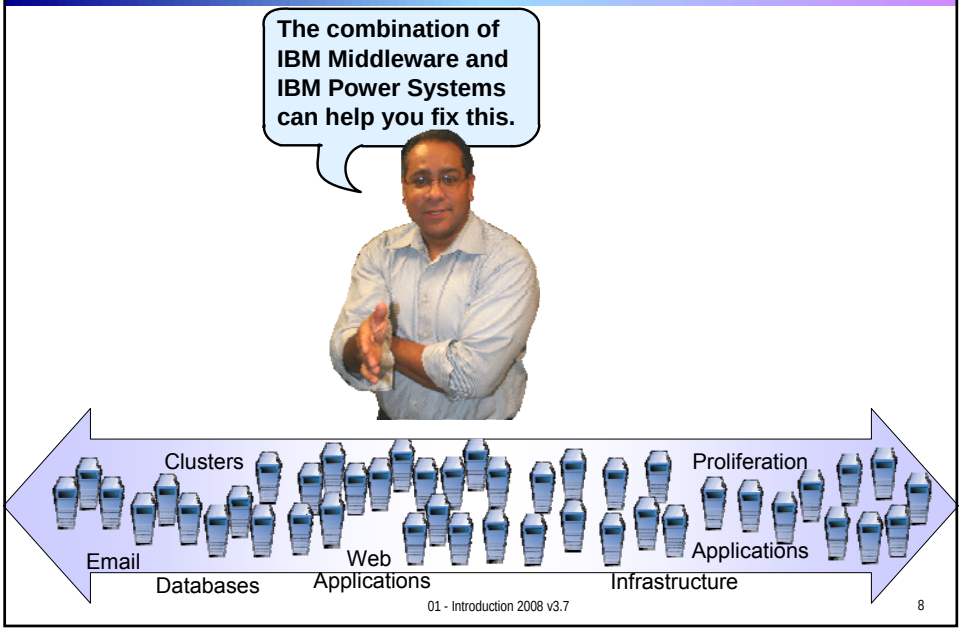


Source: The Data Center Evolution: Technologies, Designs, People and Green, IDC, March 2008.

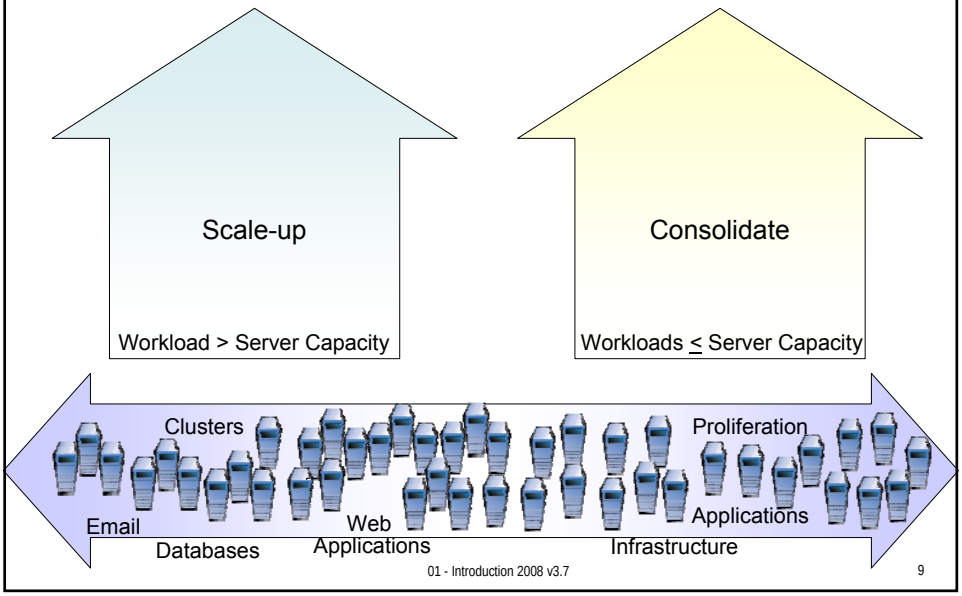
Total cost of ownership (TCO) for servers continues to rise significantly, even as total server spending remains nearly flat - Management costs are the reason, driven by the increasing number of systems

Data Centers at Service Oriented Finance

IBM Software and IBM Power Systems 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

- Replaced seven HP-UX servers with three IBM Power Systems running IBM AIX
- Implemented SAP ERP on IBM DB2

Jebsen & Jessen SEA doubles performance and cuts 20 percent from TCO with DB2 on IBM Power Systems.

"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."

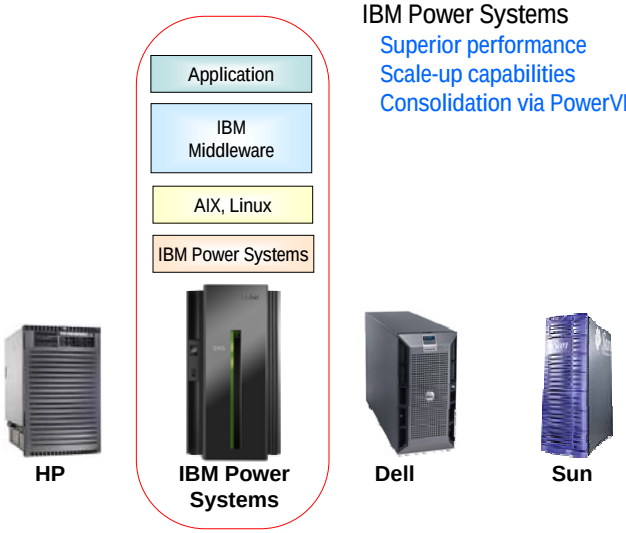
- Gopal Varutharaju, Director – Information Technology Jebsen & Jessen SEA

IBM Middleware Runs on Many Platforms

IBM Software Efficiencies
- Software designed to save the business money
- Superior software performance benchmarks
- Better administrator productivity

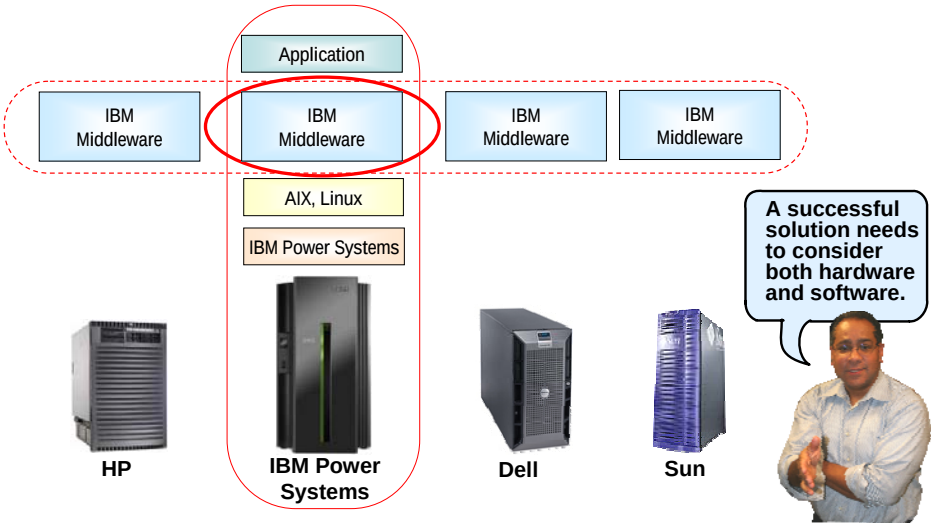
IBM Power Systems Have The Best Hardware Performance

IBM Power Systems
- Superior performance
- Scale-up capabilities
- Consolidation via PowerVM



An Unbeatable Combination for TCO

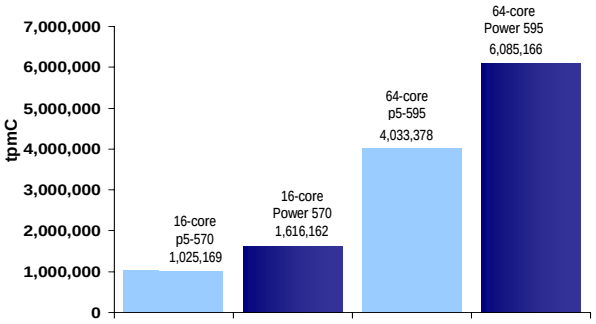
IBM Middleware plus IBM Power Systems – The best combination for optimized IT!



IBM Middleware – Designed to Work Best on IBM Power Systems

- 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 IBM Power Systems server
  - The internal mail system at IBM is deployed with Domino on IBM Power Systems
- WebSphere
  - Takes advantage of IBM Power Systems 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 IBM Power Systems virtualization and partitioning

New POWER6™ Breakthrough Performance!



50 - 60% more throughput than POWER5+™

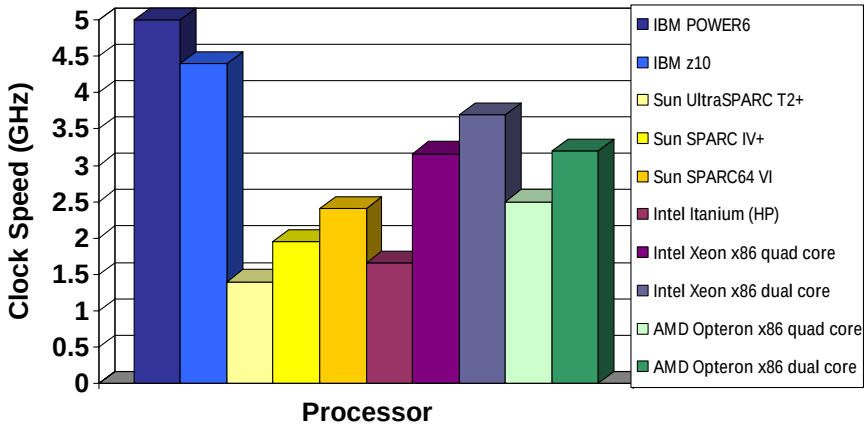
System	IBM p5-570 POWER5+	IBM Power 570 POWER6	IBM p5-595 POWER5+	IBM Power 595 POWER6
Processor	POWER5+	POWER6	POWER5+	POWER6
Chips	8	8	32	32
Cores	16 @ 2.2GHz	16 @ 4.7GHz	64 @ 2.3GHz	64 @ 5.0GHz
Threads	32	32	128	128
tpmC	1,025,169	1,616,162	4,033,378	6,085,166
$/tpmC	$4.43	$3.54	$2.97	$2.81
Availability Date	5/31/06	5/21/2007	12/20/06	12/10/2008

While reducing cost!

Source: www.tpc.org, June 2008

IBM POWER6 and z10 Lead the Competition

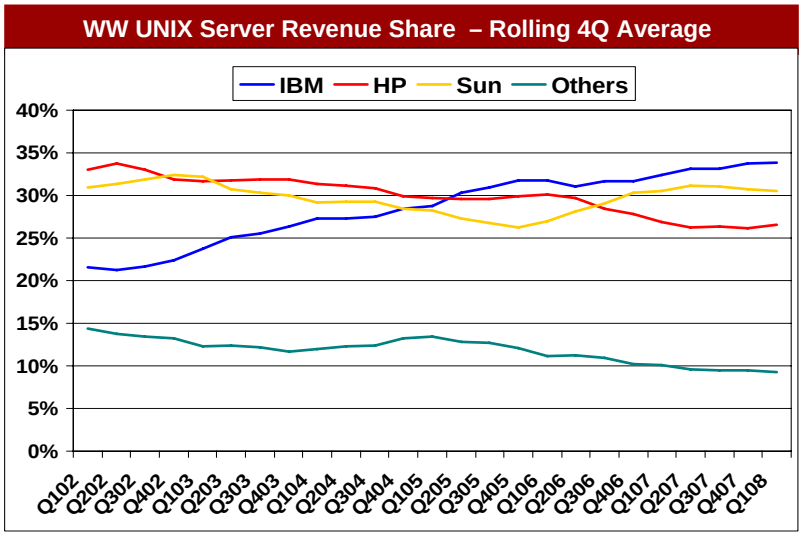
Fastest Available Processor Technology



IBM Power Systems Are Designed to Easily Scale-Up or to Consolidate

- **Scale-up Features**
  - Up to a 64-core SMP server
  - Simultaneous Multi-threading
  - Large page sizes
  - Large memory configurations
  - Integrated disk and external storage
  - 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
  - Workload Partitions
  - Live Application Mobility

Unix Server Rolling Four Quarter Average Revenue Share



Source: Worldwide Quarterly Server Tracker, IDC, May 2008.

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

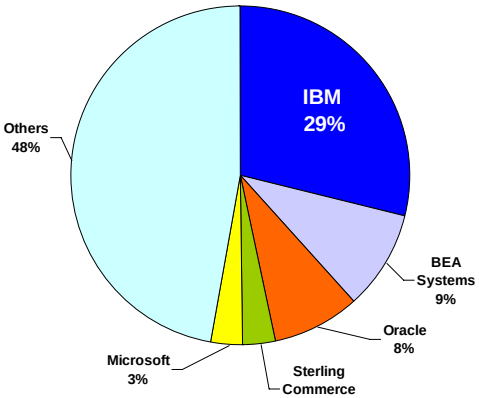
IBM is the #1 Software AIM Leader

Source: Gartner - June 2008

- IBM is the leader by far - $3.55 Billion USD
- IBM had 15.1% growth from 2006 to 2007
- The market saw the biggest growth in ESB and Business Process Suites (BPM)

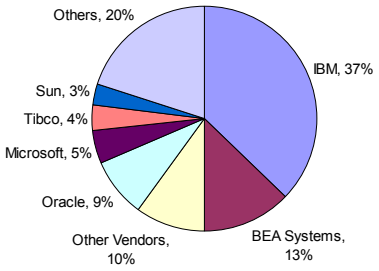
AIM = Application, Infrastructure and Middleware

2007 Worldwide Vendor Revenue Estimates for Total AIM Software (Millions of U.S. Dollars)



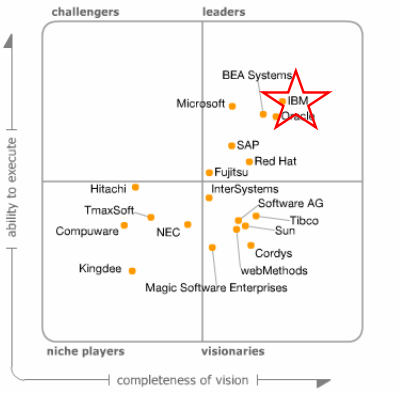
2007 Total AIM Revenue: $14,162.5

IBM Middleware Leads in Key Indicators



Highest Application Integration Middleware Market Share

Source: Worldwide AIM and Portal Software, Gartner, 2005.



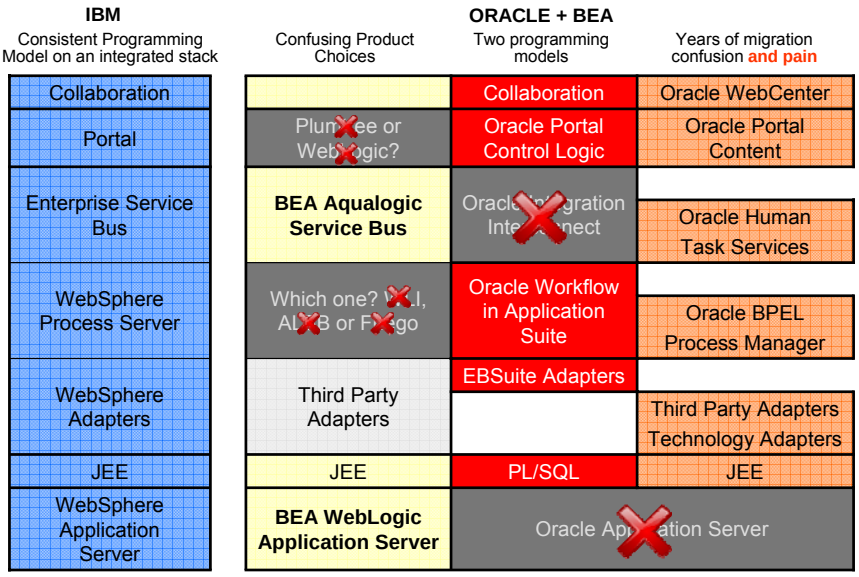
Best Middleware Vendor

Source: Gartner Magic Quadrant on Application Infrastructure, Gartner, May 2007.

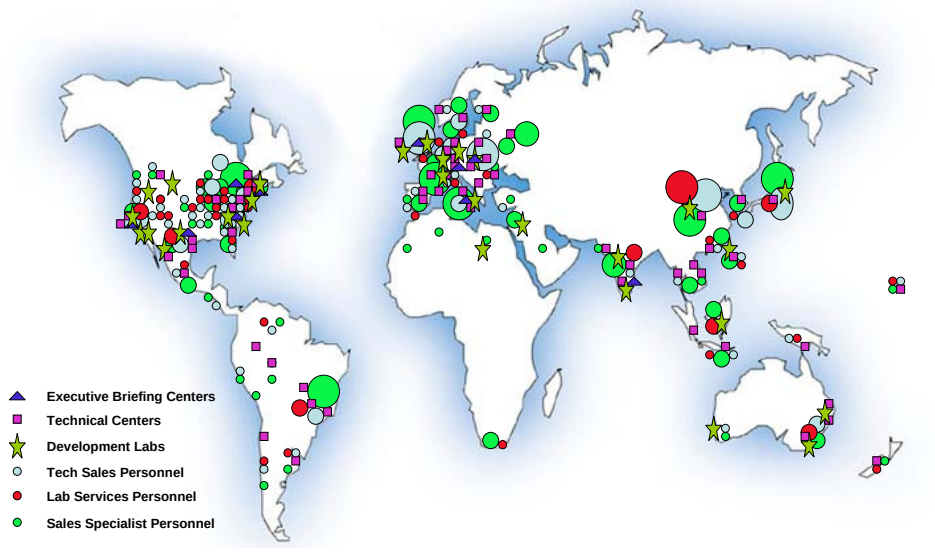
IBM Provides a Simplified, Integrated and Open Middleware Stack

IBM Consistent Programming Model on an integrated stack	Confusing Product Choices	**ORACLE + BEA** 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
JEE	JEE	PL/SQL	JEE
WebSphere Application Server	WebLogic Application Server	Oracle Application Server	

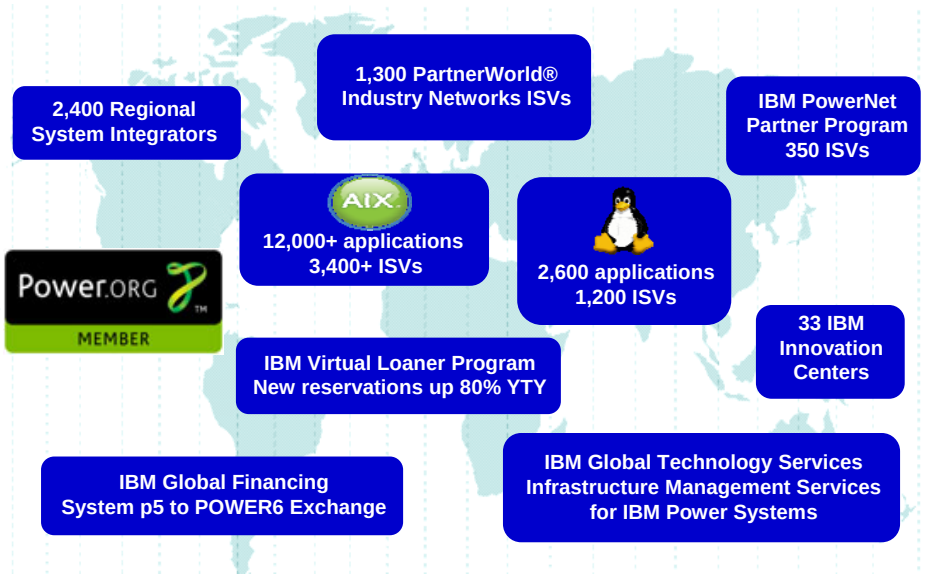
IBM Provides a Simplified, Integrated and Open Middleware Stack



IBM Has Skilled People Near You



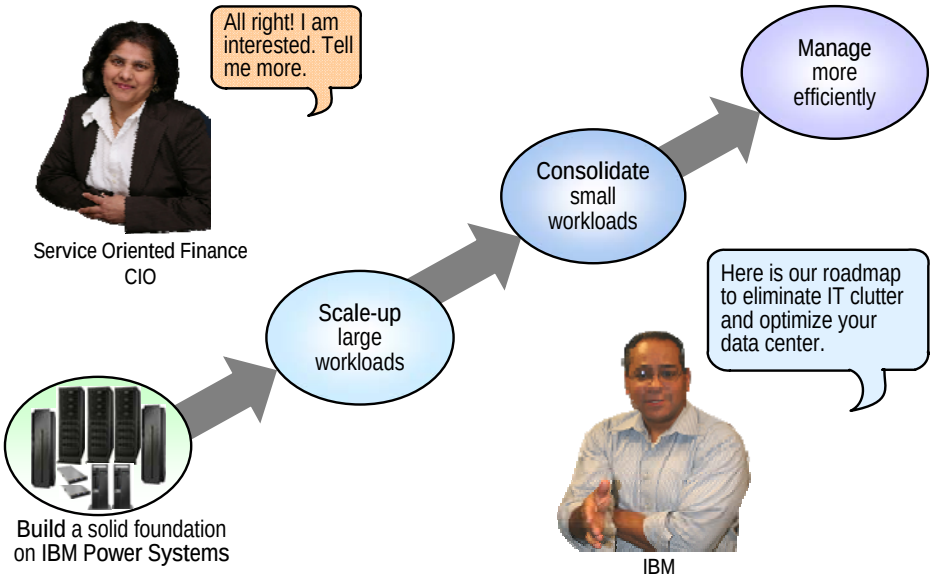
IBM Power Systems Worldwide Ecosystem



Why is IBM Middleware + IBM Power Systems the Best Solution to Simplify Your IT Environment?

- Fast and powerful IBM Power Systems servers 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

Steps to Optimizing IT with IBM Middleware on Power Systems



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 Power Systems - An Unbeatable Combination for TCO