



IBM Web services Executive Seminar

# Enterprise-Ready Web Services

## Intrinsic Support Spanning IBM's Software Portfolio

Jeff Reser  
Manager, IBM Web Services Technical Marketing

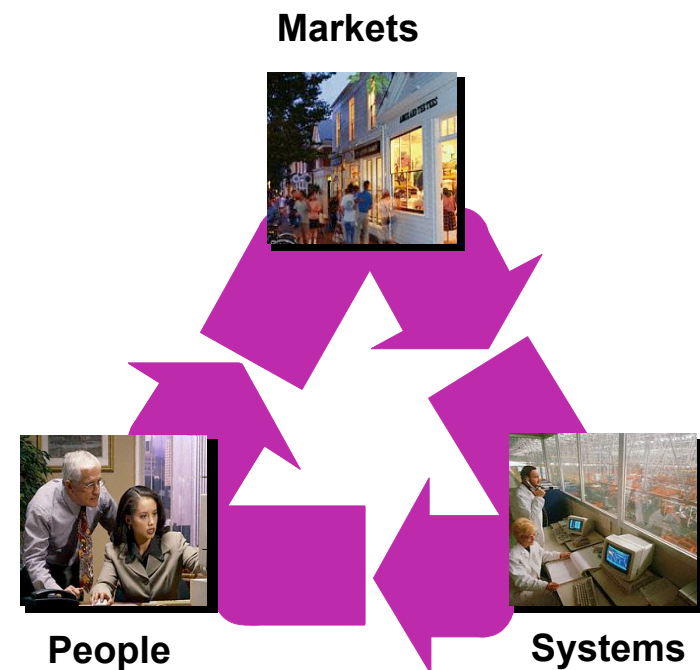


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May, 2003

## Agenda

- **Web Services On Demand**
  - ▶ Web Services Extended Architecture
  - ▶ Web Services Solutions
- **Web Services Support In ...**
  - ▶ WebSphere Foundation and Tools
  - ▶ WebSphere Portals
  - ▶ WebSphere Business Integration
  - ▶ Tivoli
  - ▶ DB2
  - ▶ Lotus
  - ▶ Rational
- **... Using Business Scenarios**
  - ▶ Enterprise Integration (Self-service)
  - ▶ Application Integration (Processes)
  - ▶ Application Integration (Data)
  - ▶ Access Integration (Portals)
  - ▶ Extended Enterprise





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# Web Services On Demand



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## e-business On Demand

Integration

Open  
Standards

... an approachable, adaptive, integrated and reliable  
infrastructure delivering on-demand services for  
on-demand business operations .....

Virtualized

Autonomic

*Open, standards-based Web services technology underlies much of  
how you can build such an environment.*

# IT Infrastructure Pressure Points

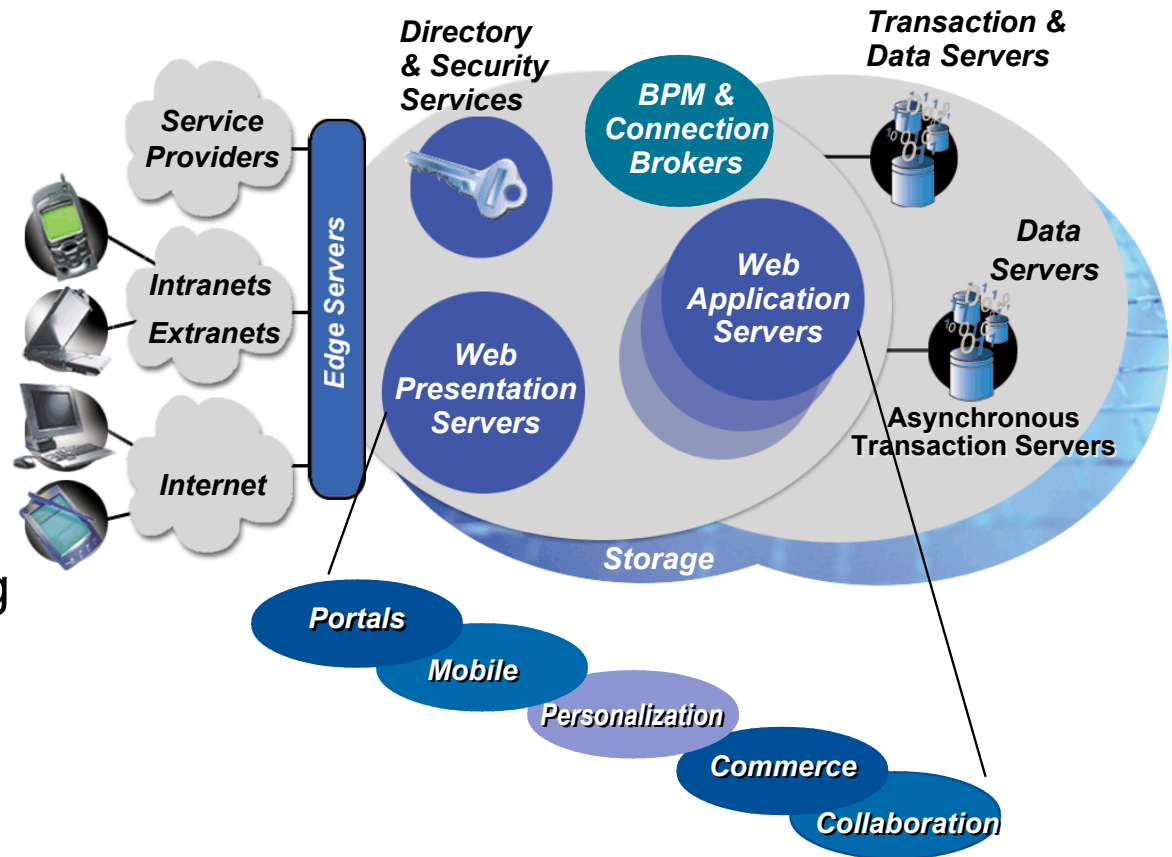


*Leverage existing assets and skills while enabling integration and interoperability*

**Web Services Oriented Architecture**

# Web Services Extended Architecture

- Open business model
  - ▶ J2EE for implementation
  - ▶ Web Services for integration
- Reshaping our offerings into components
- Preserve/leverage existing customer investments, assets, and skills
- Build offerings to support different styles of integration



# Competition in the Web Services Arena

<ul style="list-style-type: none"> <li>▪ Large existing base of DB customers</li> <li>▪ Middleware packaged with Dell and HP servers</li> <li>▪ IBM WebSphere supports Oracle databases and offers superior middleware in a more open environment</li> </ul>	<ul style="list-style-type: none"> <li>▪ Strong SMB competitor; favors client-side Web services requestor environments</li> <li>▪ Closed, Windows-only environment</li> <li>▪ Does better with simple deployments; more complicated and inconsistent in larger enterprise environments</li> <li>▪ IBM WebSphere and Web services solutions provide a more open and flexible server-side service provider solution.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Early market leader with J2EE technology and performance</li> <li>▪ Bundled with HP and Sun</li> <li>▪ IBM WebSphere has captured leadership market share from BEA</li> </ul>
<ul style="list-style-type: none"> <li>▪ Solaris install base with integrated middleware</li> <li>▪ Focused on selling hardware</li> <li>▪ Limited cross-platform support and limited Web services offerings</li> </ul>		<ul style="list-style-type: none"> <li>▪ Middleware closely aligned w/composite applications</li> <li>▪ Limited cross-platform interoperability</li> <li>▪ IBM WebSphere supports SAP adaptable connectivity</li> </ul>

Logos are trademarks of corresponding companies



# Product Support for Web Services

Management

Business Processes

Transactions

Reliability

Security

Discovery

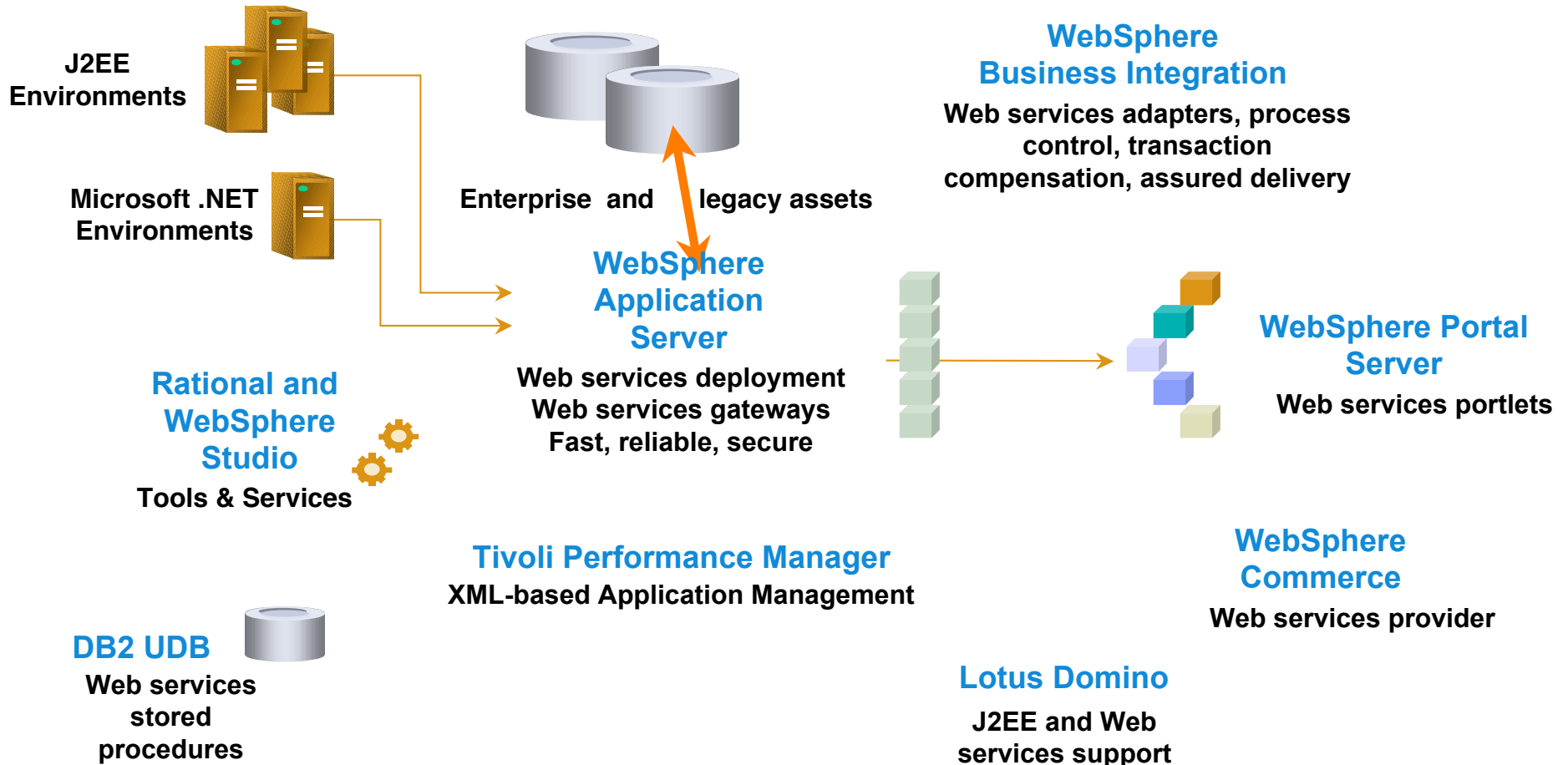
Publication

Description

Messaging



# IBM's Open, Enterprise-ready Web services Platform



# WebSphere Foundation and Tools

**WebSphere®**

## ■ WebSphere Application Server V5

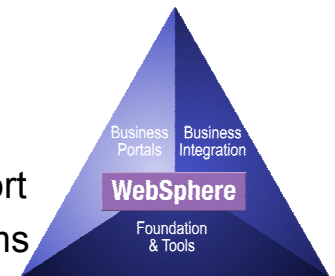
- ▶ Deployment of advanced Web services applications
- ▶ Web Services Invocation Framework
- ▶ Web services caching
- ▶ Public and private registry support
- ▶ Web Services Gateway
- ▶ XML-based Tivoli Performance Viewer (Enterprise version)
- ▶ Integrated Workflow using Web services with Business Rules (Enterprise version)
- ▶ Secure Web services management with Filter programming (Enterprise version)

### WebSphere Application Server V4 & WebSphere Studio V4

- ▶ Generation of Web services from existing Java applications
- ▶ Deployment of simple Web services applications
- ▶ Public registry support only

## ■ WebSphere Studio V5

- ▶ Generation of new Web services and Web services from existing applications
- ▶ Publish services to public and private registries
- ▶ Web Services Inspection Language support
- ▶ Adds the following in Integrated Edition V5:
  - Service Flow Editor for composing a Flow service from one or more other services
  - Integrated workflow for Web services applications with Business Rules support
  - Generation of Web services-based application adapters for Enterprise systems



# WebSphere Business Portals

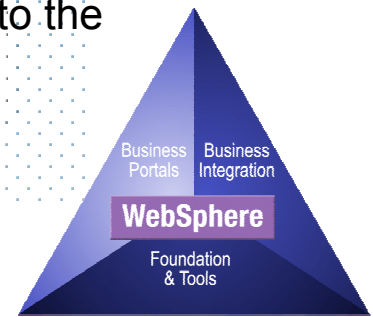
**WebSphere®**

## ■ WebSphere Portals V4

- ▶ Publishing of portlets as Remote Portlet Web Services (RPWS)
- ▶ Integration of RPWS services through a generic portlet proxy
- ▶ Like servlets, portlets can act as clients to any kind of Web service

## ■ WebSphere Commerce V5.4

- ▶ Complete Web services support in the WebSphere Application Server
- ▶ Additional Web services support integrated into WebSphere Commerce for Security, SOAP mapping, and redirecting of requests
- ▶ Handle inbound Web services requests (e.g., external applications can query and update order information)
- ▶ Generate outbound Web services requests (e.g., sending orders to the external application for fulfillment)



# WebSphere Business Integration



- **IBM WebSphere Business Integration 4.2**

- ▶ **IBM WebSphere Business Connection**

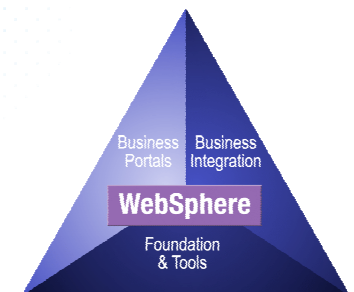
- Web Services Gateway (from WebSphere Application Server)
    - Web Services Invocation Framework (from WebSphere Application Server)
    - Process-based Web services connections (BPEL Import/Export)
    - Message-based Web services connections

- ▶ **IBM WebSphere Business Integration Adapters**

- Web services application adapters

- **IBM WebSphere MQ 5.3**

- ▶ Assured delivery of Web services using the WebSphere MQ reliable transport
  - ▶ Workflow support:
    - Publishes business processes as Web services
    - Consumes Web services as business processes



## Information and Data Integration

The DB2 logo consists of the letters "DB2" in white, bold, sans-serif font, set against a green square background. A registered trademark symbol (®) is located to the right of the "2".

- **IBM DB2 Universal Database V8**
  - ▶ XML-based publishing, consumption, and interchange
  - ▶ Wrap stored procedures as Web services
  - ▶ Easily generate Web services to query and update data using XML Extender
- **IBM DB2 Information Integrator 8.1**
  - ▶ Compose, transform, validate XML documents and data
  - ▶ Access XML, Web, or content sources as well as relational
- **IBM DB2 Information Integrator for Content 8.2**
  - ▶ XML support for portals
  - ▶ Repositioning of IBM Enterprise Information Portal
  - ▶ Adds XML support

## Advanced Collaboration Services



### ■ IBM Lotus Domino 6

*E-mail, calendar and scheduling, security, replication, database services as Domino objects*

- ▶ Subsumes WebSphere Application Server V4 Web services support
- ▶ Includes Web services collaboration, converting Domino beans and applications into Web services
- ▶ API to expose objects as Web services with WSDL

### ■ IBM Lotus Workflow

*Works on top of Domino, providing the ability to develop, manage, and monitor enterprise-scale, human-interactive business processes.*

- ▶ API to add SOAP interfaces and WSDL descriptions to existing and new workflows, allowing external applications to use Domino Workflow-based applications over the Web.

### ■ IBM Lotus Discovery Server

*Knowledge server enabling search and expertise location solutions designed to ensure that all of an organization's relevant and collective experiences are readily available to help individuals and teams solve everyday business problems.*

- ▶ API to add SOAP/WSDL interfaces over the expertise database that the Knowledge Discovery Server builds, enabling that information to be served as a Web service

## Business Impact Management



- **IBM Tivoli Configuration Manager**
  - ▶ Installation, configuration, and network management of Web services infrastructure
- **IBM Tivoli Access Manager**
  - ▶ Centralized policy management including Web services applications
  - ▶ Leveraged for authentication and authorization for centralized policy management of J2EE™ and legacy resources and extended for Web services
  - ▶ Interoperability with IBM WebSphere Application Server, with future plans to embed Tivoli Access Manager within it

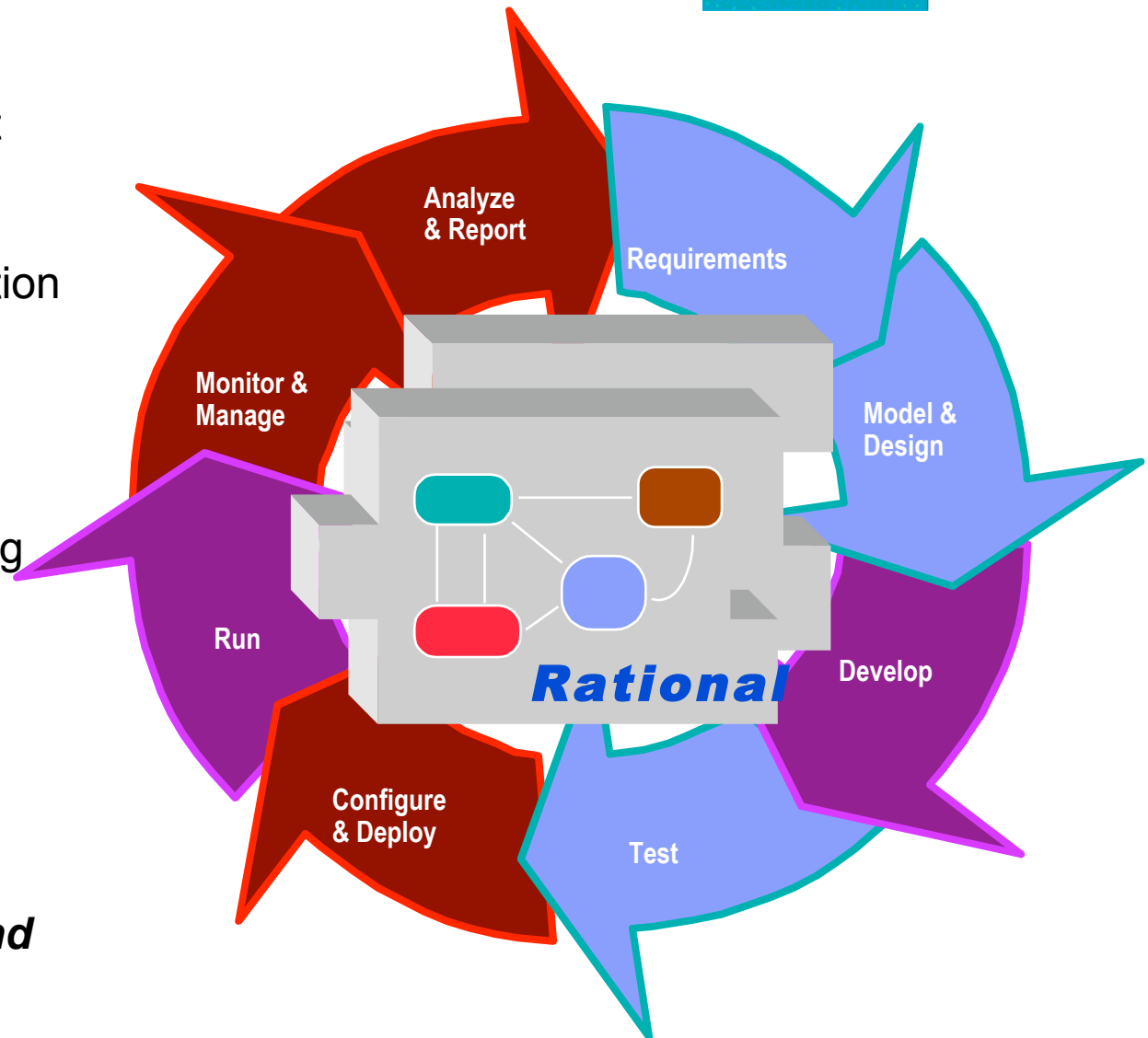
Management of availability, performance and business impact of Web Services infrastructure (IBM WebSphere Application Server, IBM DB2® applications)

## Model-Driven Development

**Rational.** software

- Visualize traces, relationships, and impact across all assets
- Integrate phases and processes of the application life cycles with change management
- Prepare environmental design via model-driven development, establishing network, platform, and system interoperability needs

► ***No direct need to incorporate Web services in design and modeling***







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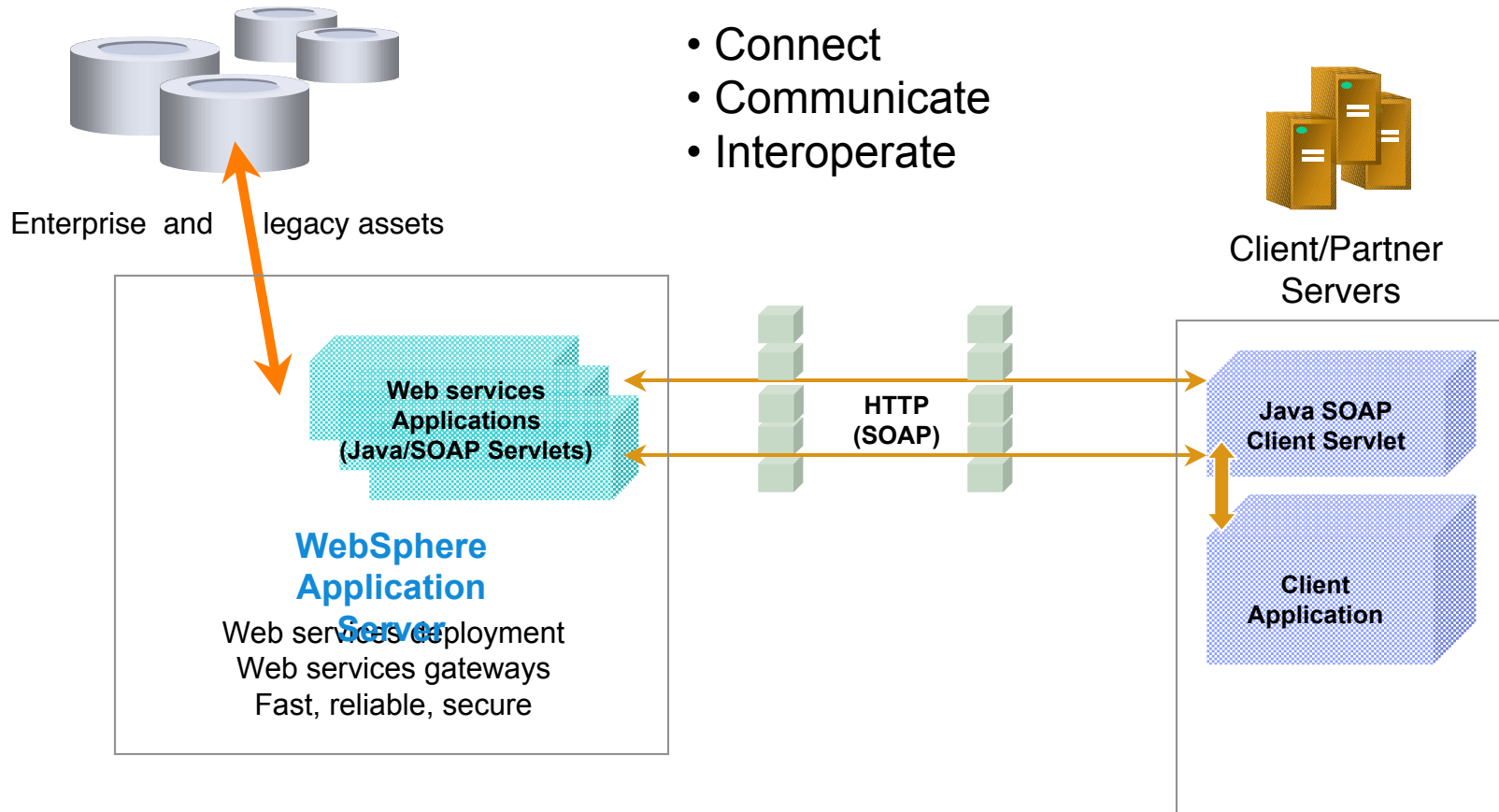
# Business Scenarios Using Web Services



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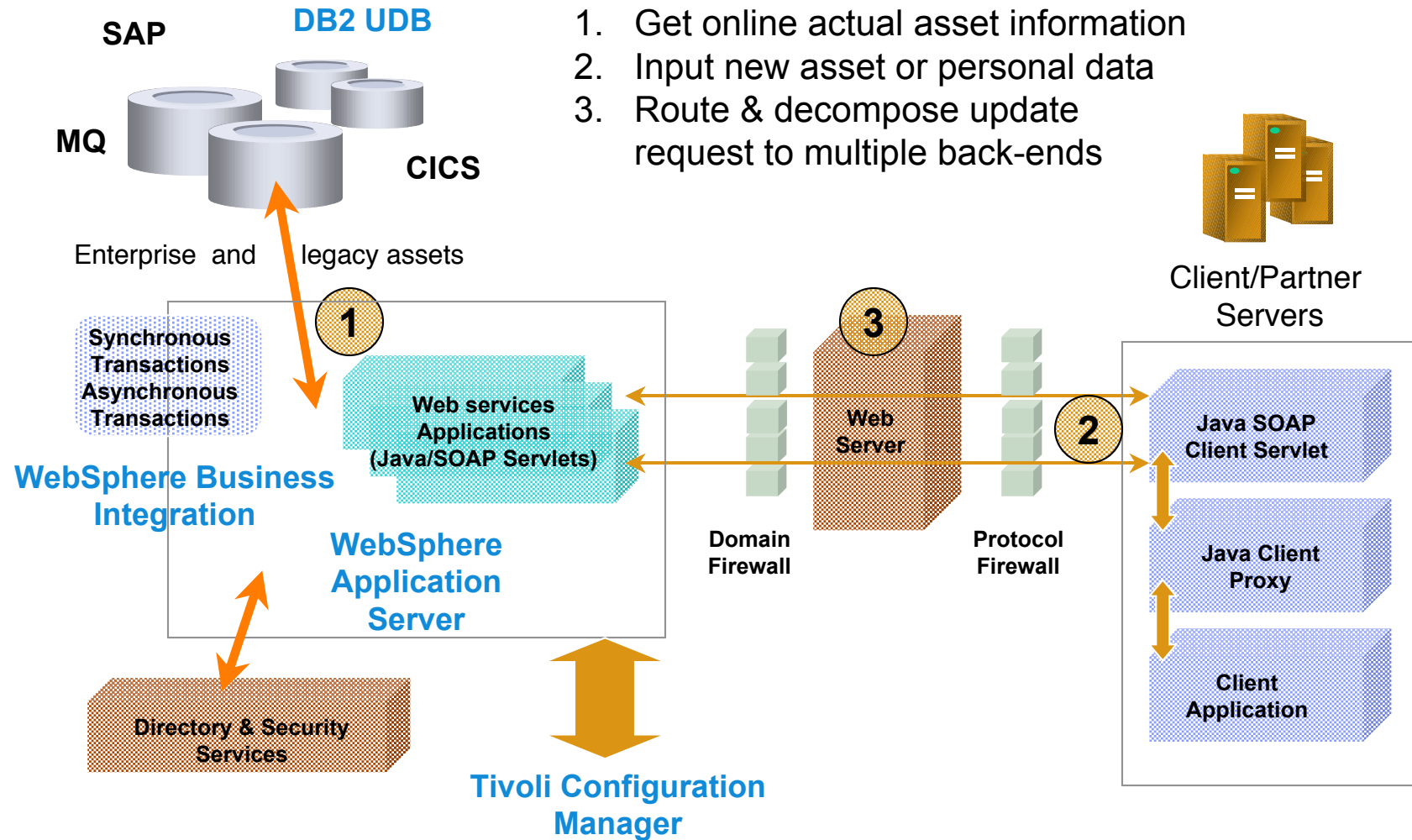
May, 2003

# Connecting To Your Partners – Basic Structure



- Connect
- Communicate
- Interoperate

# Enterprise Integration (Connectivity)



# Training and Consulting International AG

## Challenge

German job training and placement organization dealing with rising service demands needing the ability to work with multiple agencies

## Solution

- Integrated Web services employment solution built on open infrastructure including:
  - IBM WebSphere Application Server
  - IBM DB2 Universal Database
  - IBM @server xSeries
- Open Web services solution includes:
  - SOAP
  - SMTP
  - LDAP
  - XML



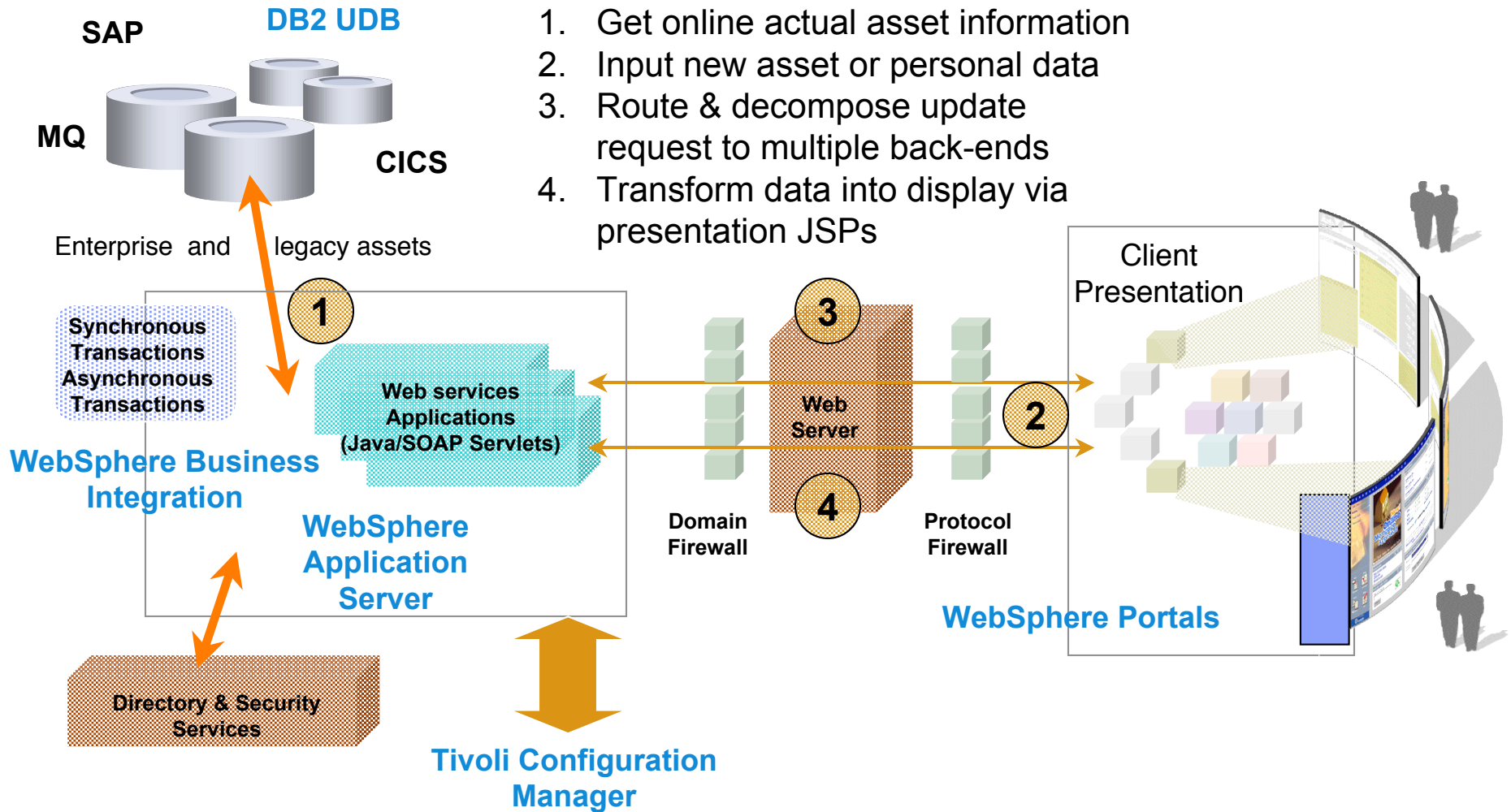
### Technology Benefit:

- Received 40,000 requests per month with good performance
- Created a stable environment based on four 2-way Intel-based clusters
- Significantly lower effort for partner integration

### on demand Business Benefits:

- 50% reduction in production time
- Redeployed employees to more strategic tasks
- Increased functionality and flexibility for competitive advantage
- More responsive to customer and business partner needs

# Enterprise Integration (Presentation)



## Mid-Comp International – Odyssey Suite

*“Odyssey utilizes the flexibility and versatility of Web services powered by IBM proven infrastructure to provide a genuine thin-client, pure Java product that is completely platform independent.”*

Steve Bridges

Managing Director, Mid-Comp International

### Challenge

- What is the value of building an ERP system that promotes the 'Wherever you are' philosophy but doesn't allow printing?

### Solution

- New 5Star product is a centralized server application running on IBM's WebSphere Application Server that delivers printable documents over the Internet via Web services.

**On demand business benefit**  
Mid-Comp was able to produce a far more flexible product that can work with other third party products regardless of the platform.

**Technology benefit**  
Bandwidth and time that can be saved by using Web services together with compression techniques.

## Nintendo Australia

*“Nintendo Australia selected Odyssey because it had been built from the ground up on IBM infrastructure specifically to support an integrated distribution business.”*

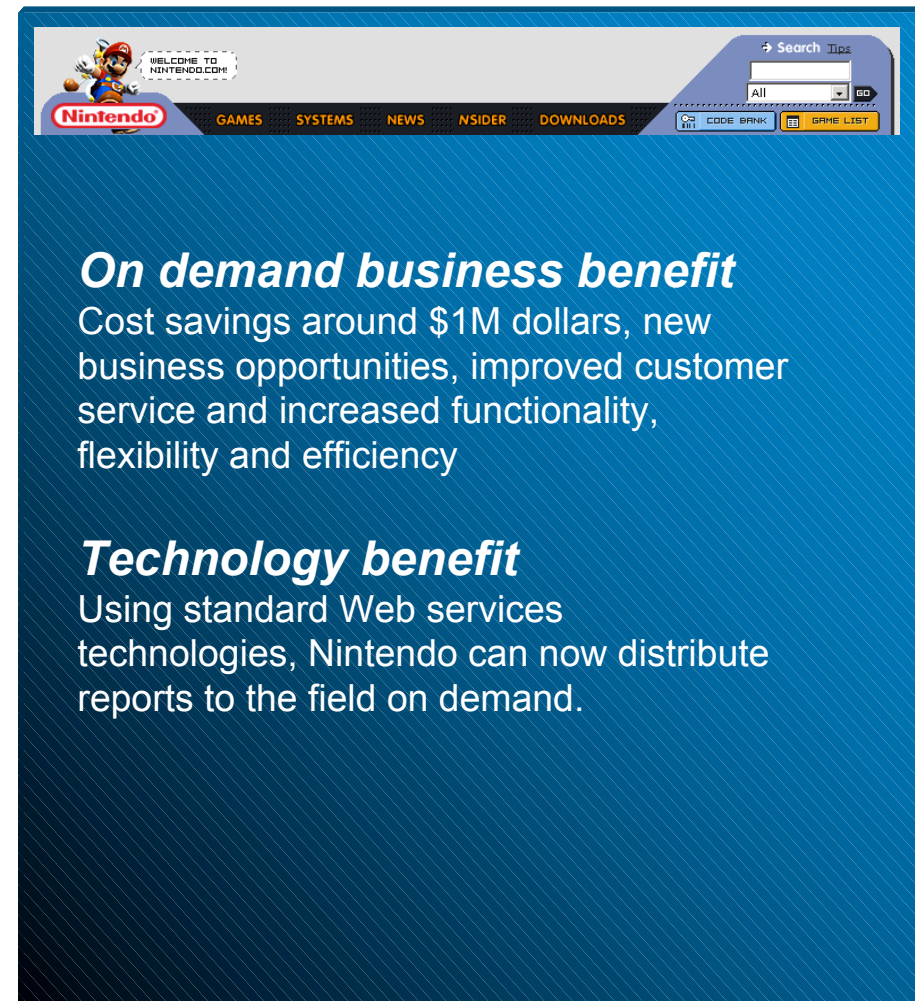
Peter Stroud  
IT Manager, Nintendo Australia

### Challenge

- Phase out proprietary integration technology without losing functionality.

### Solution

- Standards-based enterprise resource planning (ERP) solution designed and deployed using Web services technology powered by IBM WebSphere.



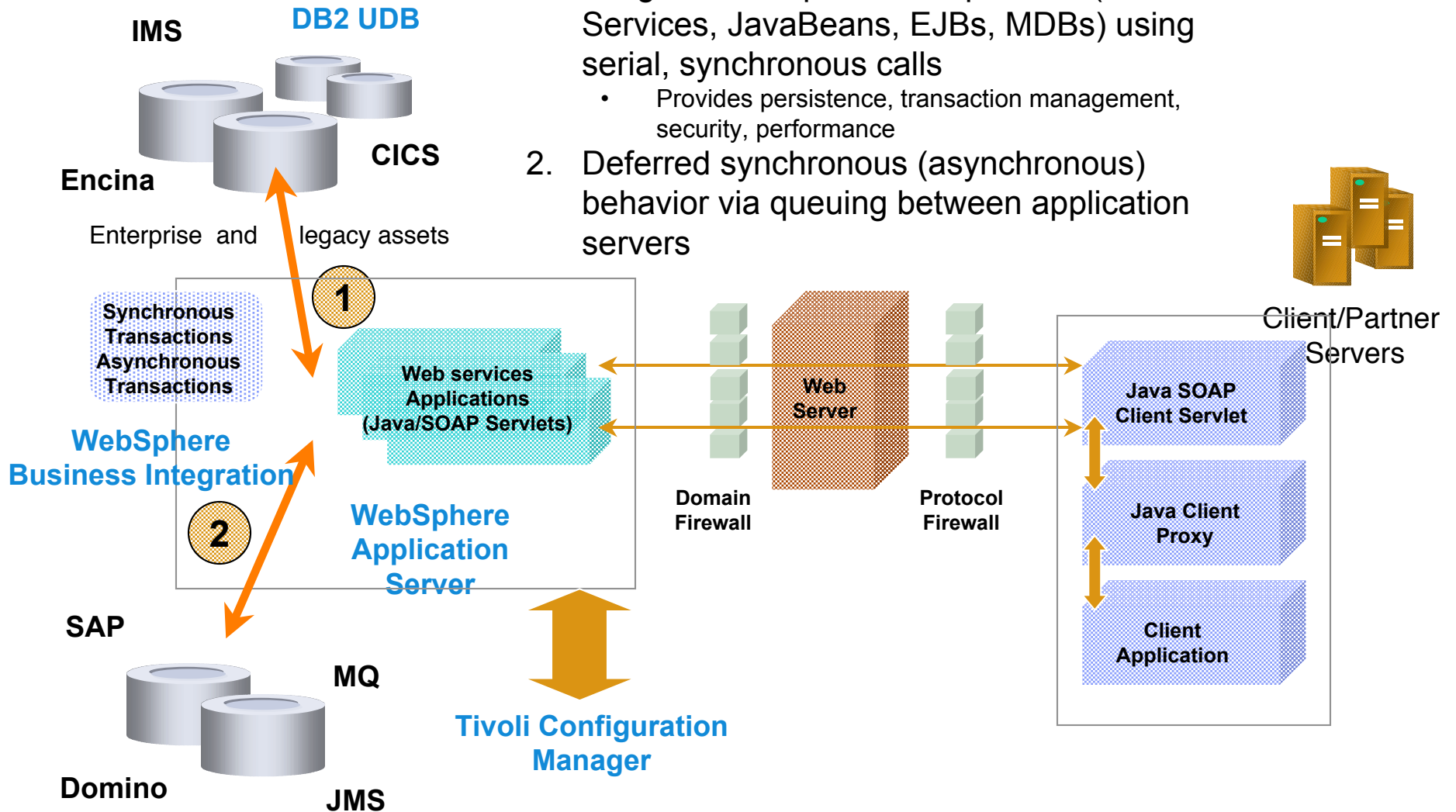
The screenshot shows the top portion of the Nintendo website. It features a navigation bar with the Nintendo logo on the left and menu items: GAMES, SYSTEMS, NEWS, NSIDER, and DOWNLOADS. On the right, there is a search bar with the text 'Search tips' and a dropdown menu set to 'All'. Below the navigation bar, there are buttons for 'CODE BANK' and 'GAME LIST'. The main content area has a blue background with white text.

***On demand business benefit***  
Cost savings around \$1M dollars, new business opportunities, improved customer service and increased functionality, flexibility and efficiency

***Technology benefit***  
Using standard Web services technologies, Nintendo can now distribute reports to the field on demand.

# Application Integration (Processes) - Transactions

1. Integrated composed components (Web Services, JavaBeans, EJBs, MDBs) using serial, synchronous calls
  - Provides persistence, transaction management, security, performance
2. Deferred synchronous (asynchronous) behavior via queuing between application servers





## Streetline Trade Financing

### Challenge

Credit Suisse member needed to provide:

- interactive brokerage charting application without raising fees
- enhanced services, with pay-as-you-go business model, to avoid adding additional server capacity

### Solution

- Web service hosted and metered by IBM using:
  - IBM Web Services Hosting Technology
  - IBM Global Services - e-business Hosting
  - IBM Business Partner Visualize
- Open Web services solution includes:
  - SOAP
  - XML
  - RMI
  - WSDL



**Technology Benefit:**

- 50% reduction in application integration and maintenance time
- Eliminated local setup, dedicated server administration and maintenance (estimated \$3,000 savings in setup costs alone)

**Business Benefits:**

- Variable pricing structure allows pay-as-you-go business model
- Hosting allows company to focus on core competencies

## Photon Research Associates

### Challenge

U.S.-based research company needed to:

- transition a complex scientific application into a highly scalable, open, and cost-efficient e-business solution
- find a more efficient way than the current manual process to distribute photographic images to customers

### Solution

Provide a common distribution platform for photographic images based on open standards infrastructure using:

- IBM WebSphere Application Server
- IBM WebSphere Commerce
- IBM WebSphere Studio
- IBM Advanced Technology Solutions



**Technology Benefits:**

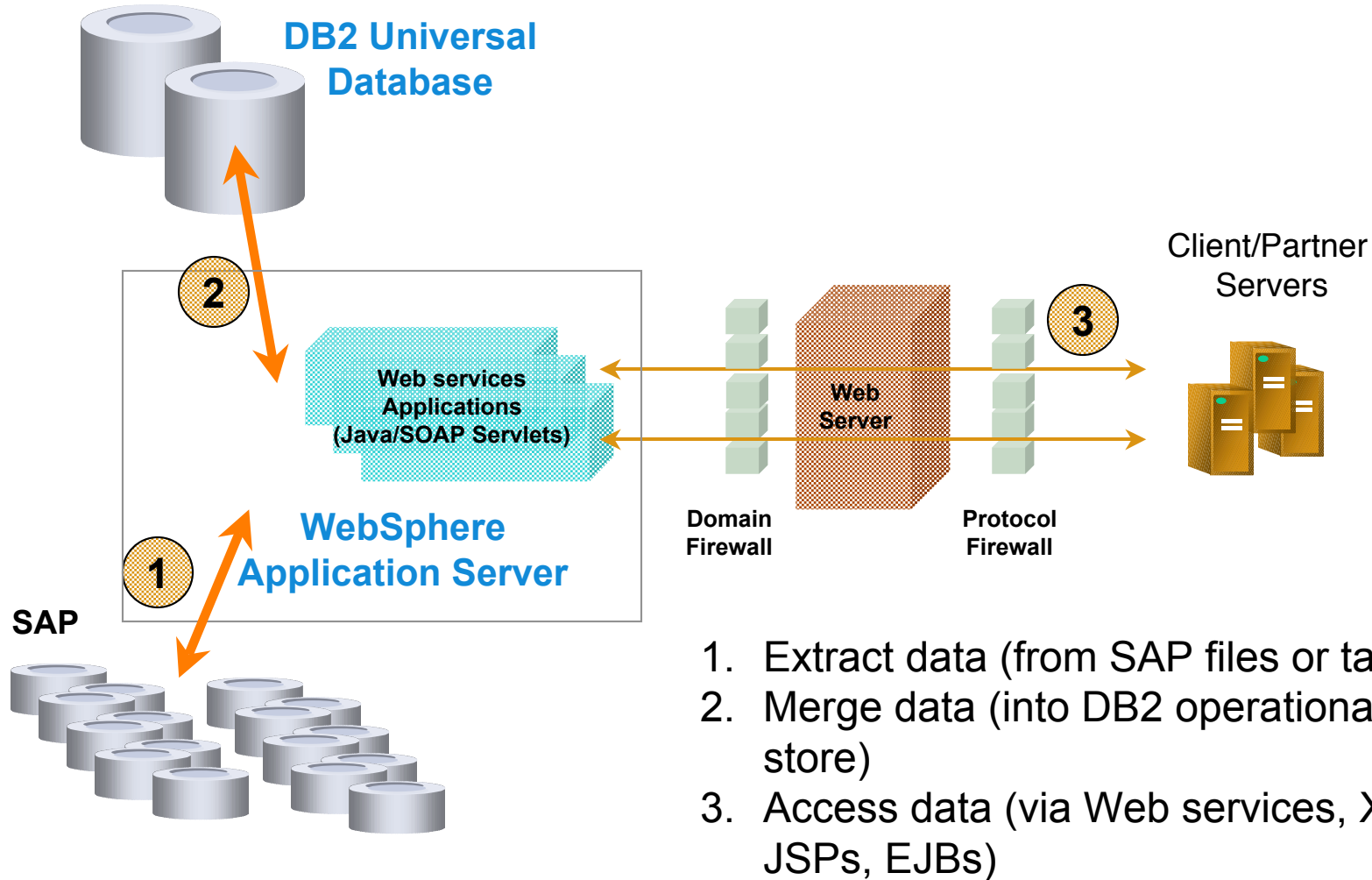
- Development time reduced by more than 50%
- Reduced application costs

**on demand Business Benefits:**

- Increased customer satisfaction
- More efficient business process for acquiring images
- New application positioned company as industry leader



# Application Integration (Data) – Management/Aggregation



# Ricoh Technosystems

## Challenge

Japanese computer services company needed to improve communications, establishing realtime business relationships with educational service companies

## Solution

- Web services based solution that dynamically integrates educational offerings based on:
  - IBM DB2 Universal Database
  - IBM Lotus Domino
- Open Web services solution includes:
  - SOAP
  - XML
  - UDDI

The screenshot shows the Ricoh Technosystems website with a navigation menu on the left and a main content area. The main content area features a 'One-Stop' banner and several news items under 'RIS TOPICS' and '採用情報' (Recruitment Information).

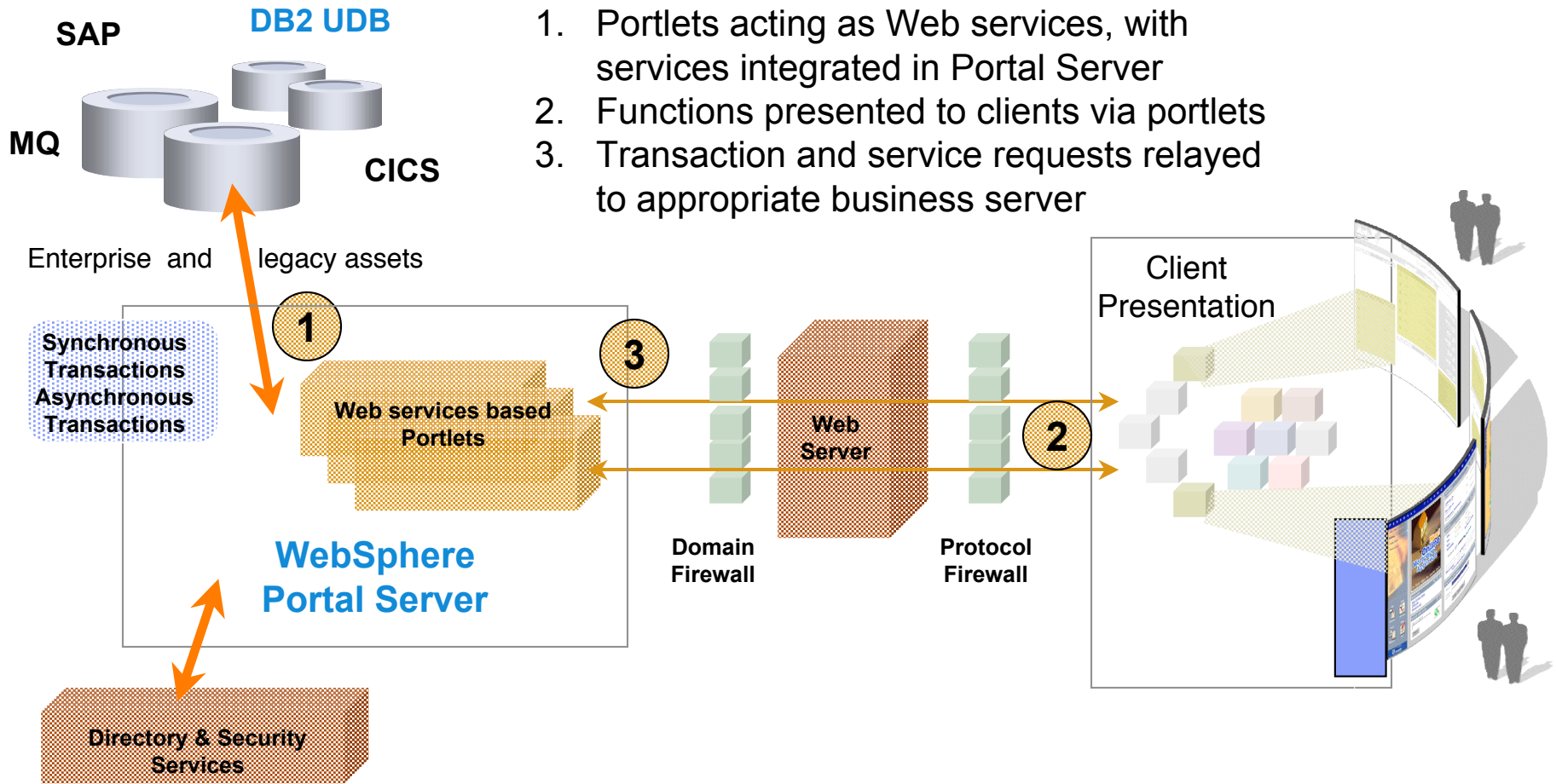
### Technology Benefits:

- Accelerated application development time by 33%
- Increased worker productivity by 400%

### on demand Business Benefits:

- Improved employee and customer satisfaction while increasing revenues and profits
- Improved perception as a technology leader, opening opportunities for new business

# Access Integration - Portals



1. Portlets acting as Web services, with services integrated in Portal Server
2. Functions presented to clients via portlets
3. Transaction and service requests relayed to appropriate business server

# Volkswagen

*"VW not only manufactures the fastest car in the world, but we're also speeding ahead of the competition with Web services running on proven, robust IBM infrastructure."*

Dr. Hans Ottmar Beckmann  
ITC Executive Director, Volkswagen AG

## Challenge

- Enable and enhance Web-based communication between a global automobile conglomerate and its business partners.

## Solution

- Single-sign-on portal solution built on the IBM WebSphere® platform to leverage Web services technologies and standards.

welcome to vw.com  
home of volkswagen of america and volkswagen canada

New Beetle Convertible  
let the outside in

643x318

Jetta Wagon  
We call it 70 cubic feet of anything.

Go places.

- eventvw. The Sundance Film Festival has a special sponsor this year.
- RadioVW. On the road of life, you need a great soundtrack.
- See what we've got up our sleeve for 2003. Check out the new models.

SITE CANADIEN EN FRANÇAIS

Drivers wanted.

## On demand business benefit

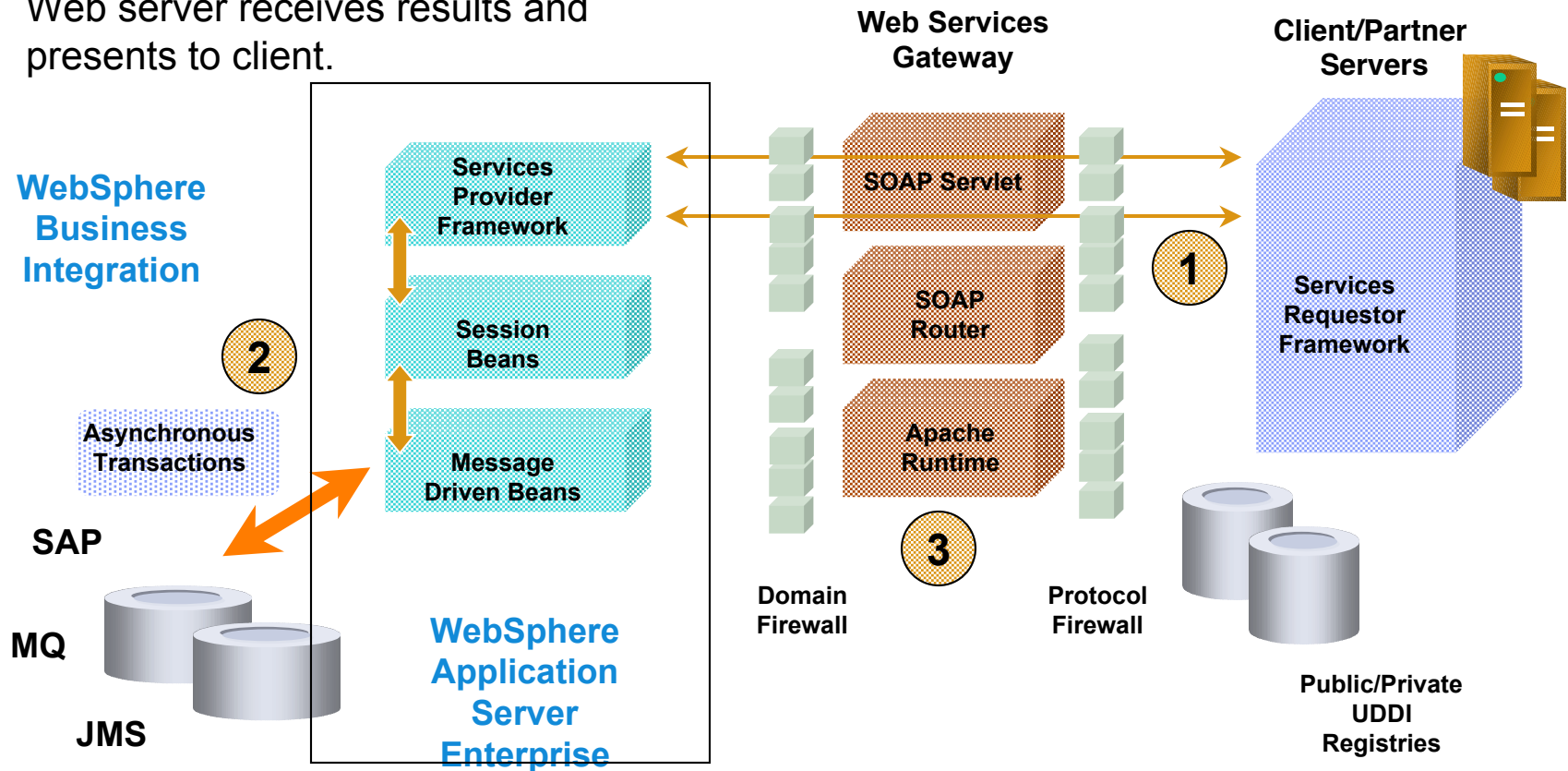
A new way of leveraging economies of scale to simplify business processes. Dynamic market information flows from partners resulting in increased product quality and speed-to-market.

## Technology benefit

Supported cross enterprise authentication within a heterogeneous federation of services and security systems via a customized portal page.

# Extended Enterprise - Business Services

1. Client requests access to and invocation of a service
2. Service provider complies
3. Web server receives results and presents to client.



## Brunswick Boat Group

*“WebSphere Application Server Enterprise and WebSphere Studio Application Developer Integration Edition V5 gives us a way to optimize developer productivity and provide application flexibility. These solutions will make it possible for our organization to use Web services to solve our integration concerns so that we can easily adapt to a world of e-business on demand.”*

Jason Becker

Manager of Client Applications, Brunswick Boat Group

### Challenge

- Gain the ability to manage multiple brands within a dealer extranet while reducing support costs.
- Provide dealers with a solution that would increase customer service and revenues.

### Solution

- A standards-based dealer “Compass” extranet which supports all Brunswick boat brands. This provides complete information, including warranty registration, warranty service claims, and parts order entry.

**Brunswick... a passion for what we do.**

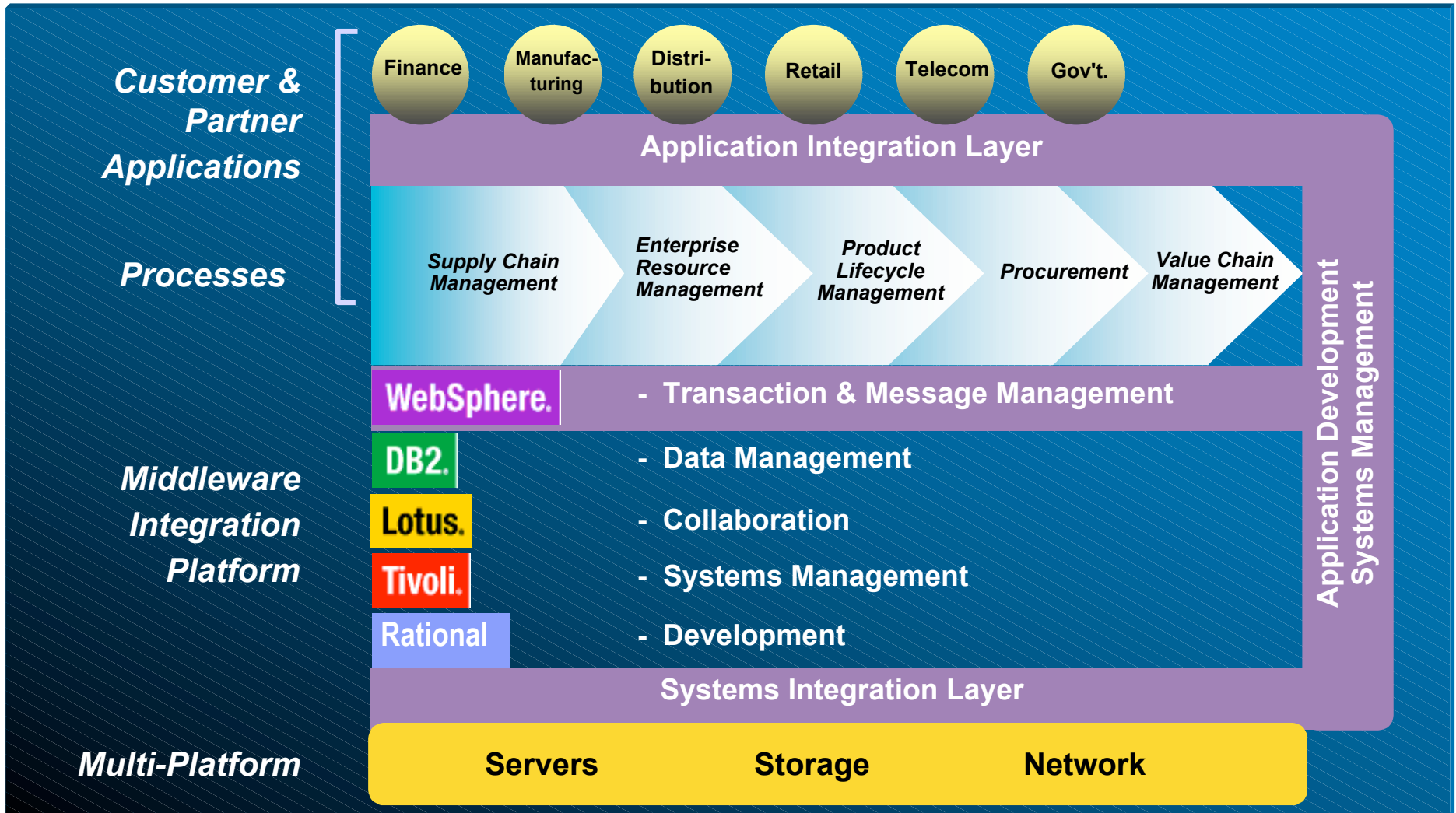
At Brunswick we approach everything we do with an enthusiasm that is evident in the products we make and the services we provide. Our brands and our ability to compete in an ever-evolving marketplace are synonymous with innovation, quality and value. Passion, drive, commitment—call it what you want—it's our promise to deliver the best we can for our shareholders, customers and employees.

**On demand business benefit**  
Improve communications among dealer networks, improve service levels to dealers, increase flexibility, reduce solution support costs.

**Technology benefit**  
Standards-based extranet makes it possible to use Web services to solve integration concerns and optimize productivity.



# IBM Integrated Middleware for e-business On Demand



## Summary

- IBM software uses J2EE implementations throughout the infrastructure and Web services for integration and interoperability across networks
- Web services enable businesses to:
  - ▶ Connect applications to applications in other businesses quickly and easily
  - ▶ Establish interactions with marketplaces more efficiently
  - ▶ Deliver business functions to a broader set of customers and partners
  - ▶ Create new business models by allowing them to organize and partner in new, dynamic ways.
- Your world is likely to become increasingly heterogeneous, not less so, but that doesn't have to be a bad thing because of technologies like Web services.



## Putting It All Together ...

- Peruse customer references and application briefs at <http://ibm.com/webservices/successstories.html>
- Check out the Web services Business Value Information Kit at <http://ibm.com/webservices/businessvalue.jsp>
- Assess your readiness for Web Services with tools available at <http://ibm.com/webservices/ready.jsp>
- ... and much more, all linked to through the main page for IBM Web services at <http://ibm.com/webservices>

