



WebSphere Software

Connectivity for SOA: *The Advantages of an advanced ESB on System Z*

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ON DEMAND BUSINESS™

Agenda

- The Connectivity Entry Point to SOA
- Defining an Advanced ESB
- Why an ESB on Z?
 - High Availability
 - Scalability
 - Security
 - Disaster Recovery
 - Operational Efficiency
 - Reduced Cost of Ownership
- Advanced ESB for Z Powered by IBM

IBM SOA Entry Points

Business Centric entry points

Leverage information for business optimization

- Deliver trusted information real time and in context
- Reduce risk and improve visibility into business operations

Extend the ability to collaborate inside & outside

- Enhancing people to people collaboration
- Support multi-channel delivery

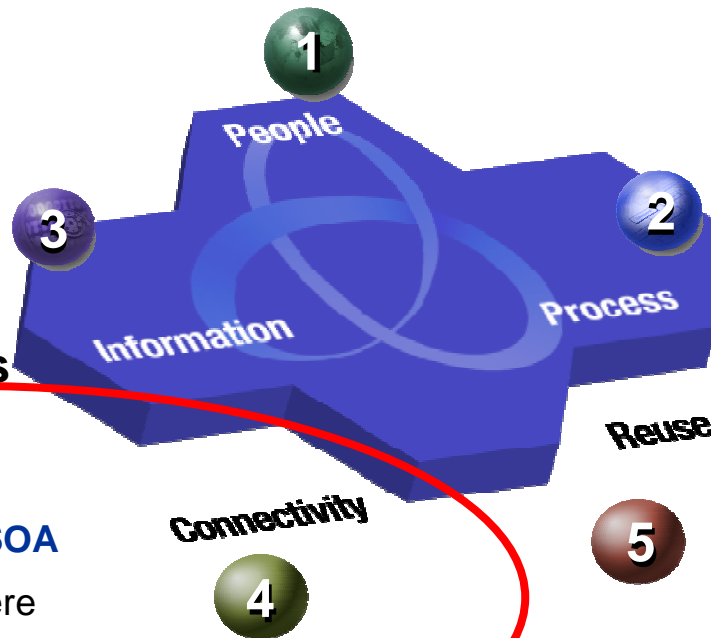
Business model & process innovation

- Seamless coordination between automated and people/information driven business processes
- Increase organizational effectiveness

IT centric entry points

Underlying connectivity to support business-centric SOA

- Connect assets - anywhere anytime with an ESB
- Rapidly adapt to provide flexible, reliable connectivity



Create flexible, service-based business applications

- Get the most from your existing investments
- Tools provide a simpler way to create diverse assets more quickly

Client business objectives

Business Objectives



....introduce and change business solutions....

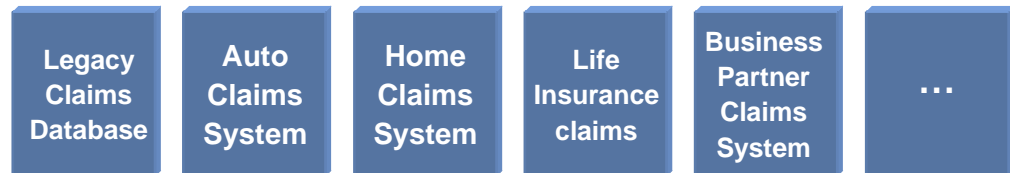
How can I...

....against measured objectives....

....leveraging existing resources and IT systems...

....at a pace and cost which outwits my competition.

Resources and IT Assets
(e.g. for an insurance company)



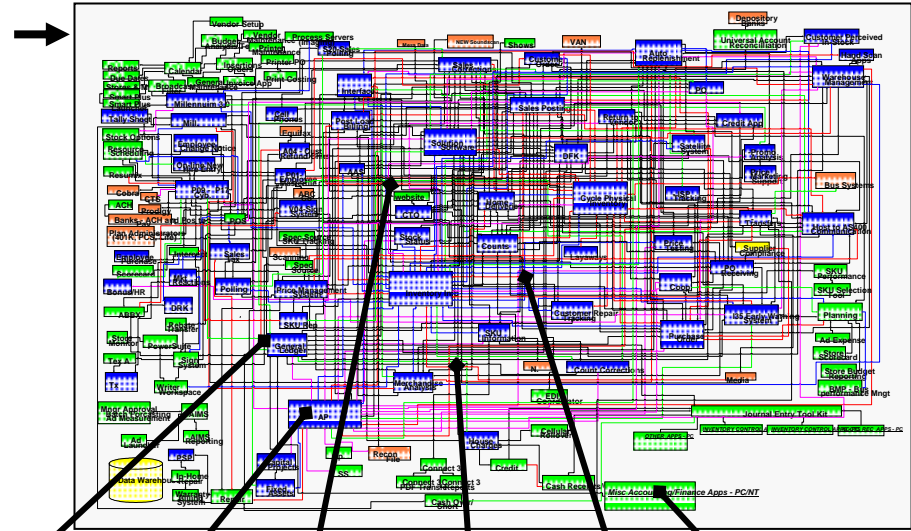
How can our clients overcome the obstacles preventing them from achieving their objectives?

Business Objectives

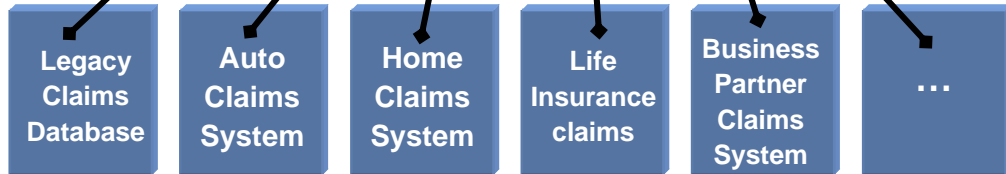


Actual application topology for a company

- **Complex processes & systems**
- **Complex applications & interfaces**
- **Difficult to adapt quickly**
- **Large portion of IT budget spent on maintenance, not on new value add investments**



Resources and IT Assets
(e.g. for an insurance company)



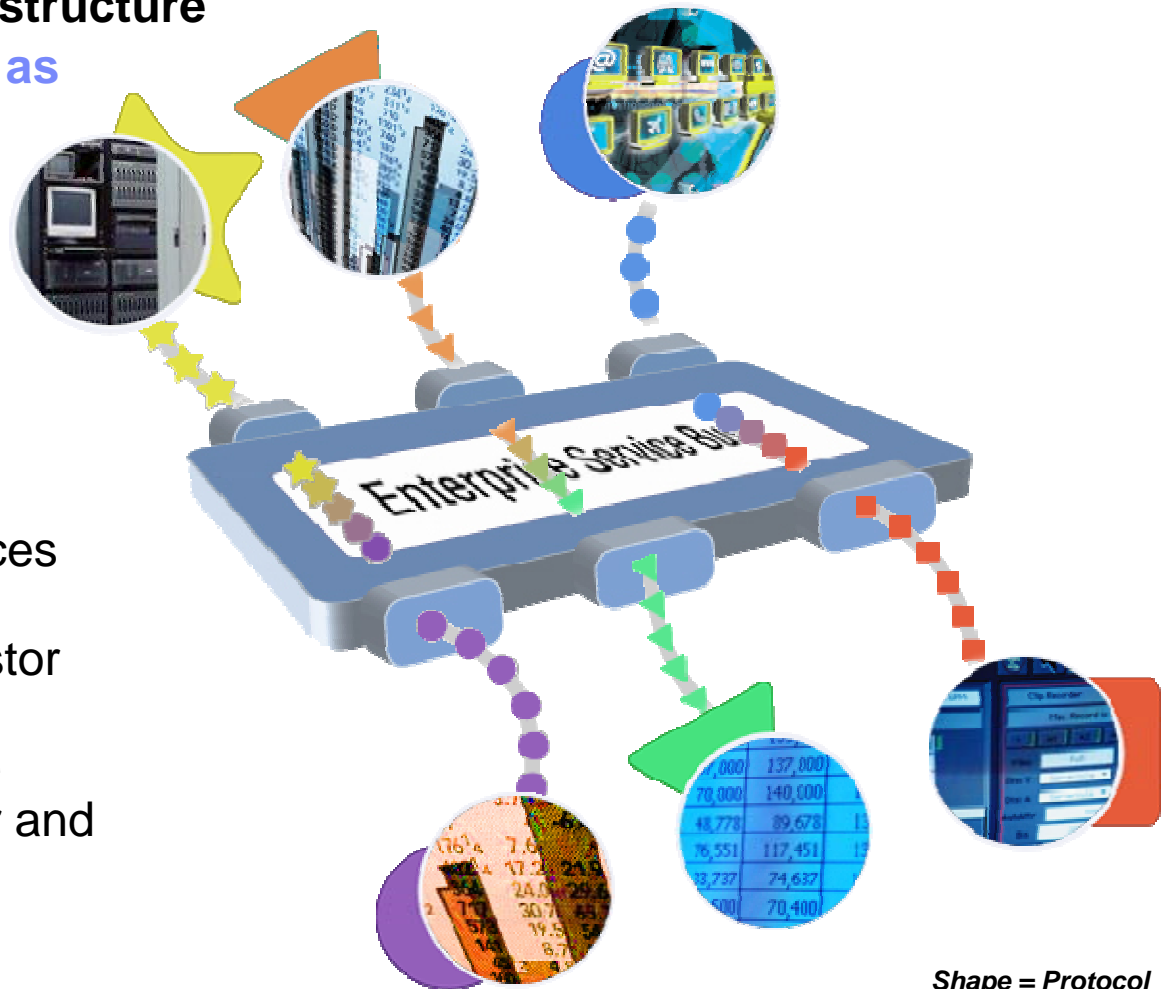
Answer: The Enterprise Service Bus (ESB)

A flexible connectivity infrastructure for integrating applications as services...

.....which reduces the number, size, and complexity of interfaces.

An ESB:

- ▶ **MATCHES & ROUTES** messages between services
- ▶ **CONVERTS** transport protocols between requestor and service
- ▶ **TRANSFORMS** message format between requestor and service
- ▶ **DISTRIBUTES** business events from/to disparate sources

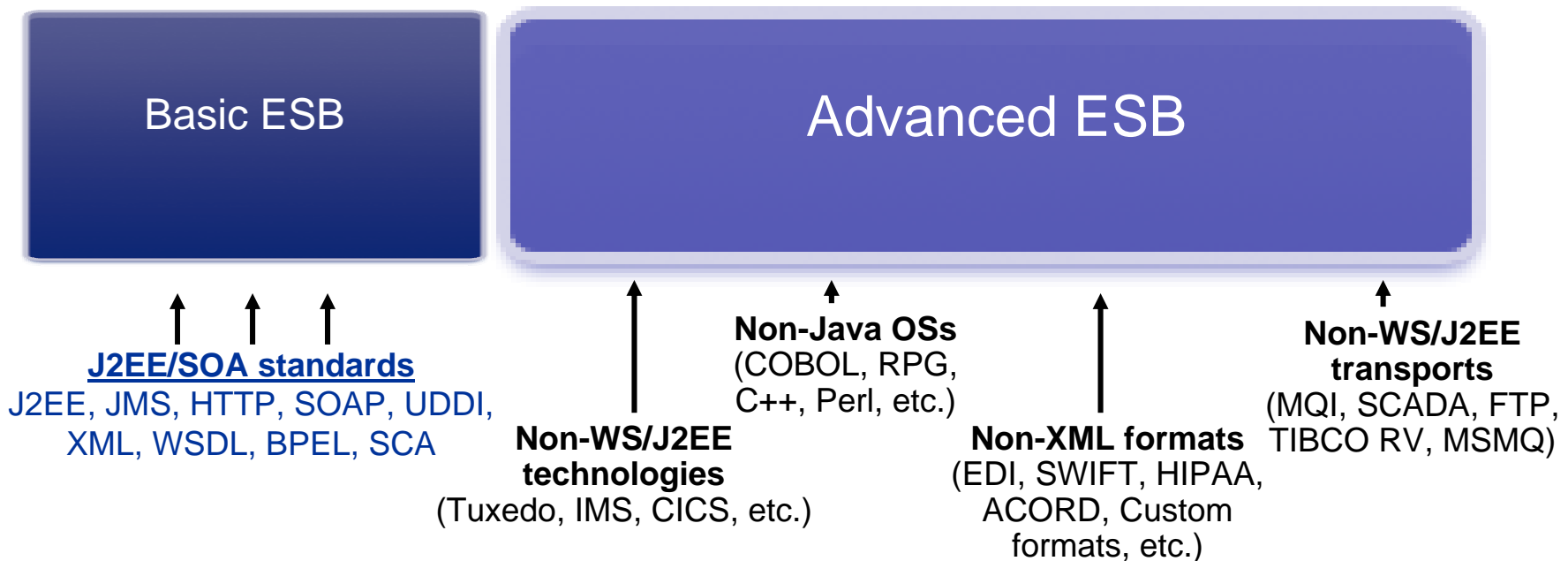


Shape = Protocol
Color = Data type

An Advanced ESB extends the value of SOA to z/OS

An Advanced ESB extends the value of SOA to both standard and non-standard applications

- *Plugs into an SOA platform*
- *Mediates “both” XML and non-XML data formats...*
- *Enables non-SOA applications to behave as services...*
- *Provides exceptionally high-speed data movement and scalability*



The z/OS platform is uniquely capable of ensuring your ESB is highly available

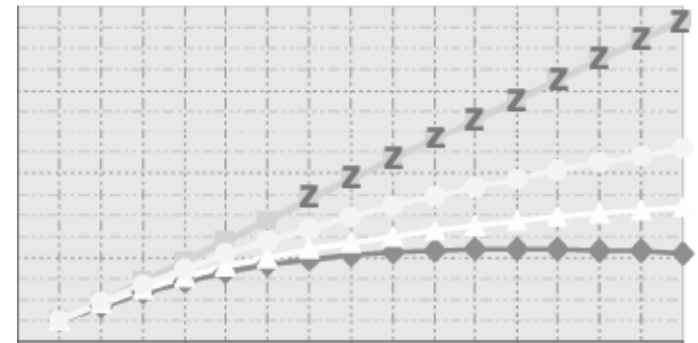
- Redundant dynamically replaced hardware components to protect against component failure
- EAL5 certified logical partitions with full hardware sharing to protect against a system outage
- Multi-system Parallel Sysplex to provide true 24X7 operations
- Concurrent hardware update
- Capacity upgrade on-demand

A large U.S. bank running their ESB on System z has seen 99.987% availability since their initial deployment two years ago.



System Z offers the best scalability of any platform, enabling you to grow your enterprise ESB over time

- System z offers extraordinary linear scalability for mixed workload with a 54-way MP configuration
- Parallel Sysplex for multi system clustering with a single system management perspective
- Dynamic workload balancing across systems and logical partitions
- Efficient support for mixed workloads allows effective resource sharing among applications
- Integrated I/O offload processors

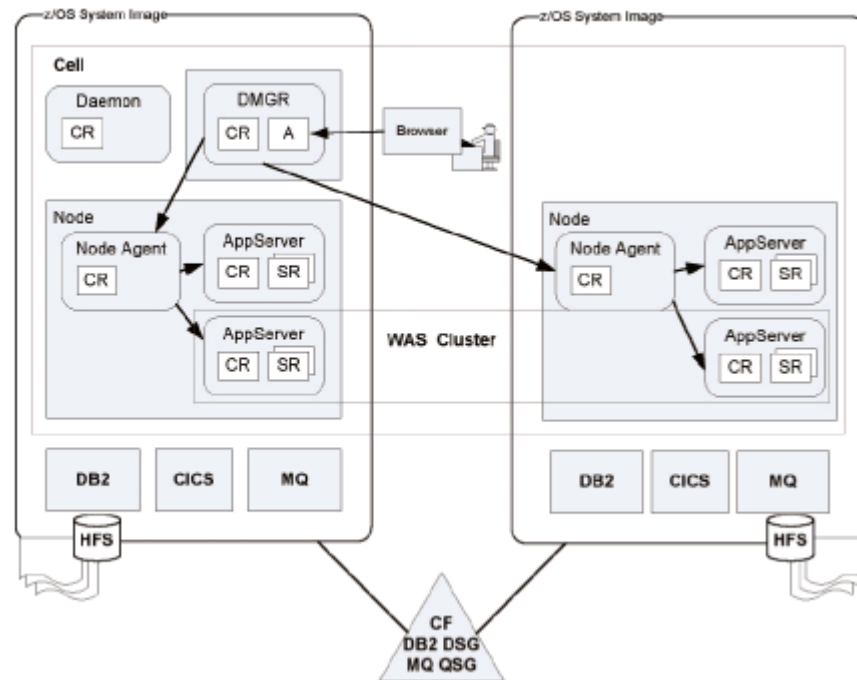


System Z is widely recognized as the most secure computing platform

- Designed from the outset as a secure environment for mission critical business and government transactions
- Industry leading cryptography support
- Integrated security management controlled exclusively by security personnel providing the essential separation of concerns
- Support for Public Key Infrastructure (PKI) certificate management

An ESB on System Z benefits from the best in disaster recovery

- Support for synchronization with a remote System z Parallel Sysplex for dynamic recover of z/OS and Linux workloads
- Capacity backup to support critical consolidated workloads



Co-locating your ESB with partner applications on Z results in significant operational efficiency gains

- Avoids the expense of marshaling, de-marshaling and remote scheduling of work
- Cross-memory interaction eliminates network latency
- Ability to leverage existing tools, procedures and support staff
- Virtualization of ESB instances simplifies management and adds flexibility



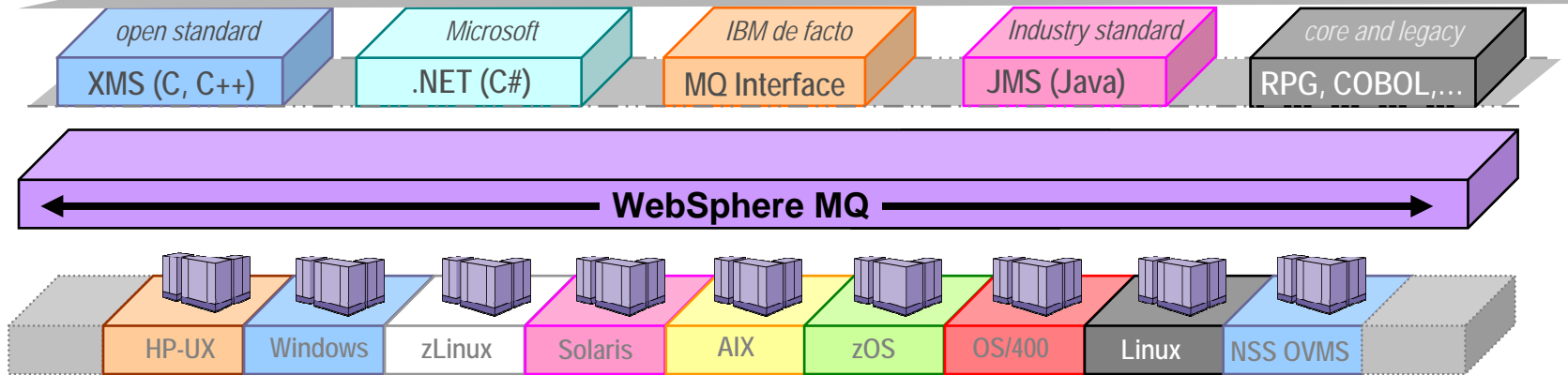
WebSphere MQ facilitates universal connectivity for your Advanced ESB

WebSphere MQ has the broadest support for:

- programming languages
- messaging interfaces
- application environments
- OS platforms

MQ gives you the freedom to:

- Choose the technologies you prefer,
- Leverage the skills you already have to...
- Connect the applications you already have...



40+ platforms, 80+ platform configurations

IBM WebSphere Message Broker V6 Delivers and Advanced ESB

Delivers the right information, at the right time, based on the specific need of each recipient...

Examines content and **routes** it accordingly

Transforms content

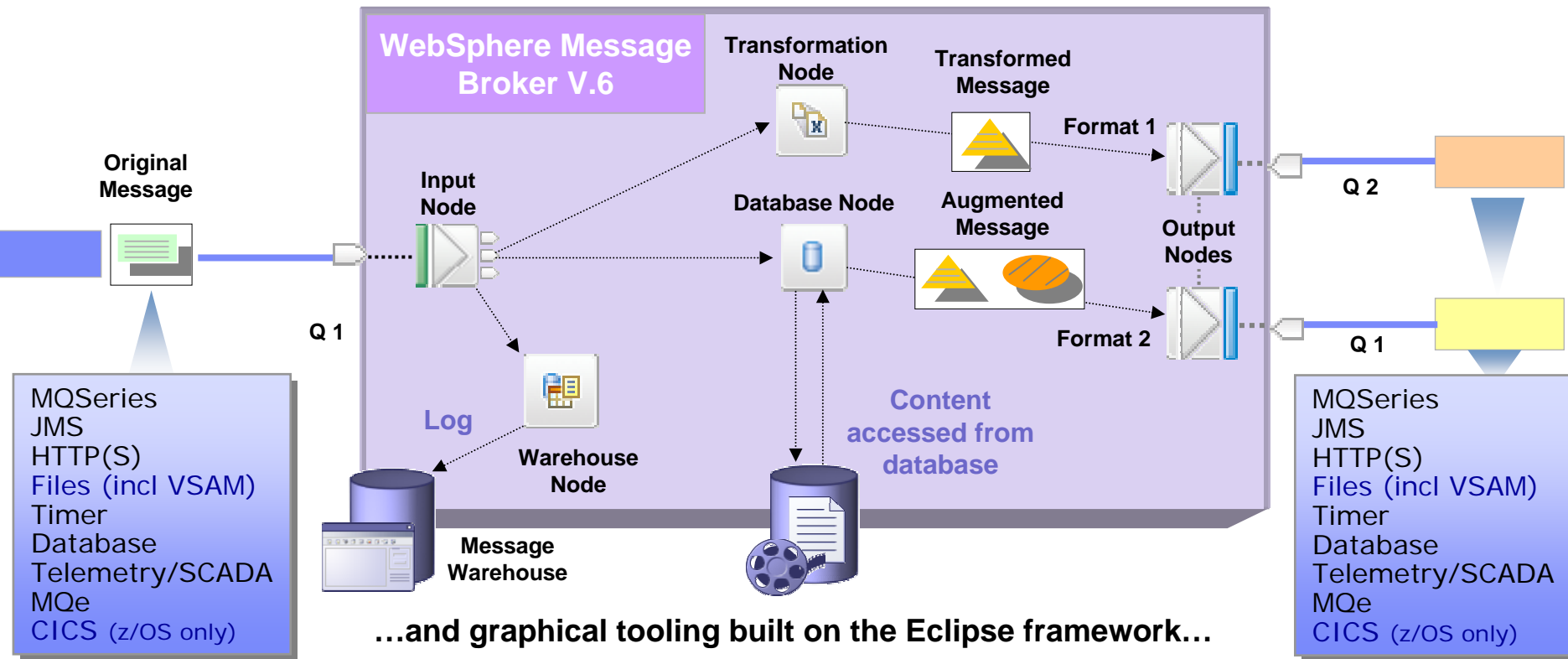
Augments content

Logs content

Matches and **compares** content

Aggregates data from multiple sources

...With end-to-end transactional delivery...



...and graphical tooling built on the Eclipse framework...

Message Broker V6 reduces cost of ownership on z/OS

● zAAP

- Java Compute Node, XSLT, Real-time/Multicast, Configuration Manager exploitation

● New features

- 50% performance improvement over version 5
- Compact parsers for XML to reduce the CPU utilization to read, write and navigate XML documents, reducing storage requirements for these messages by up to 66%
- Unicode database support to efficiently store data from worldwide sources without loss
- Industry based (e.g. SWIFT) and record based (COBOL/C) parsers have seen improvements by up to a factor of four

Message Broker includes powerful z/OS-specific nodes

● VSAM nodes

- Batch Input Processing
- Data Enrichment and Routing from VSAM
- Data Logging to VSAM
- Deletion of VSAM data
- Remove VSAM file records on the basis of message processing

● QSAM nodes

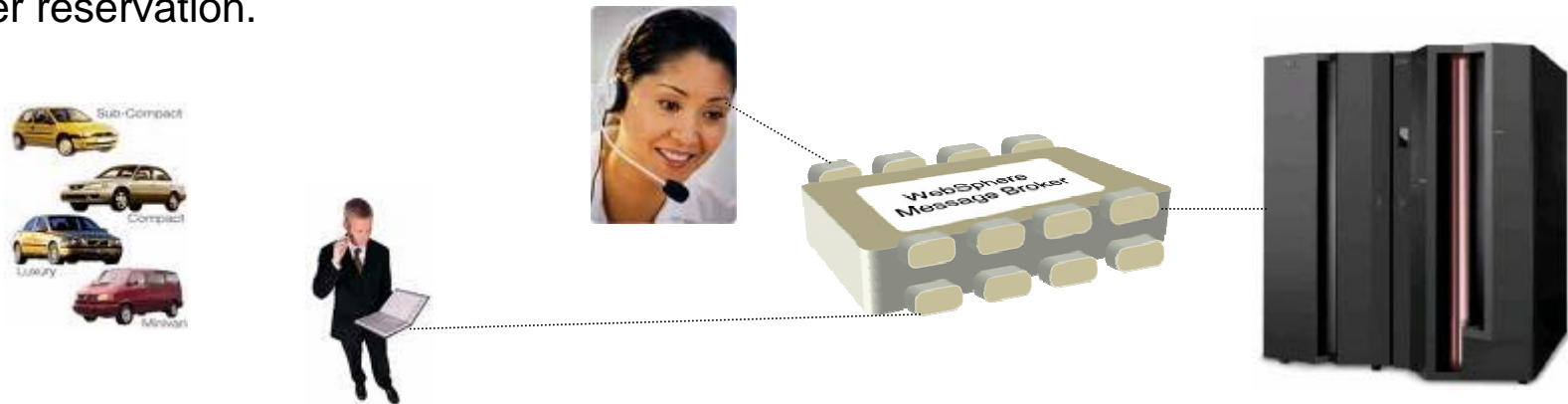
- Similar in concept to VSAM nodes, but sequential file oriented

● CICS

- Fully transactional, high performance EXCI CICS interaction direct from a z/OS message flow

A major international car rental firm modernized their reservation and customer service capabilities with an IBM ESB for Z

- IBM WebSphere Message Broker and WebSphere MQ for z/OS technology enabled the firm to share data between new online applications and their reservation, rental and information management systems
- These solutions help facilitate the movement of information to support publish/subscribe requests, such as enabling a customer to automatically receive an e-mail confirmation of his or her reservation.



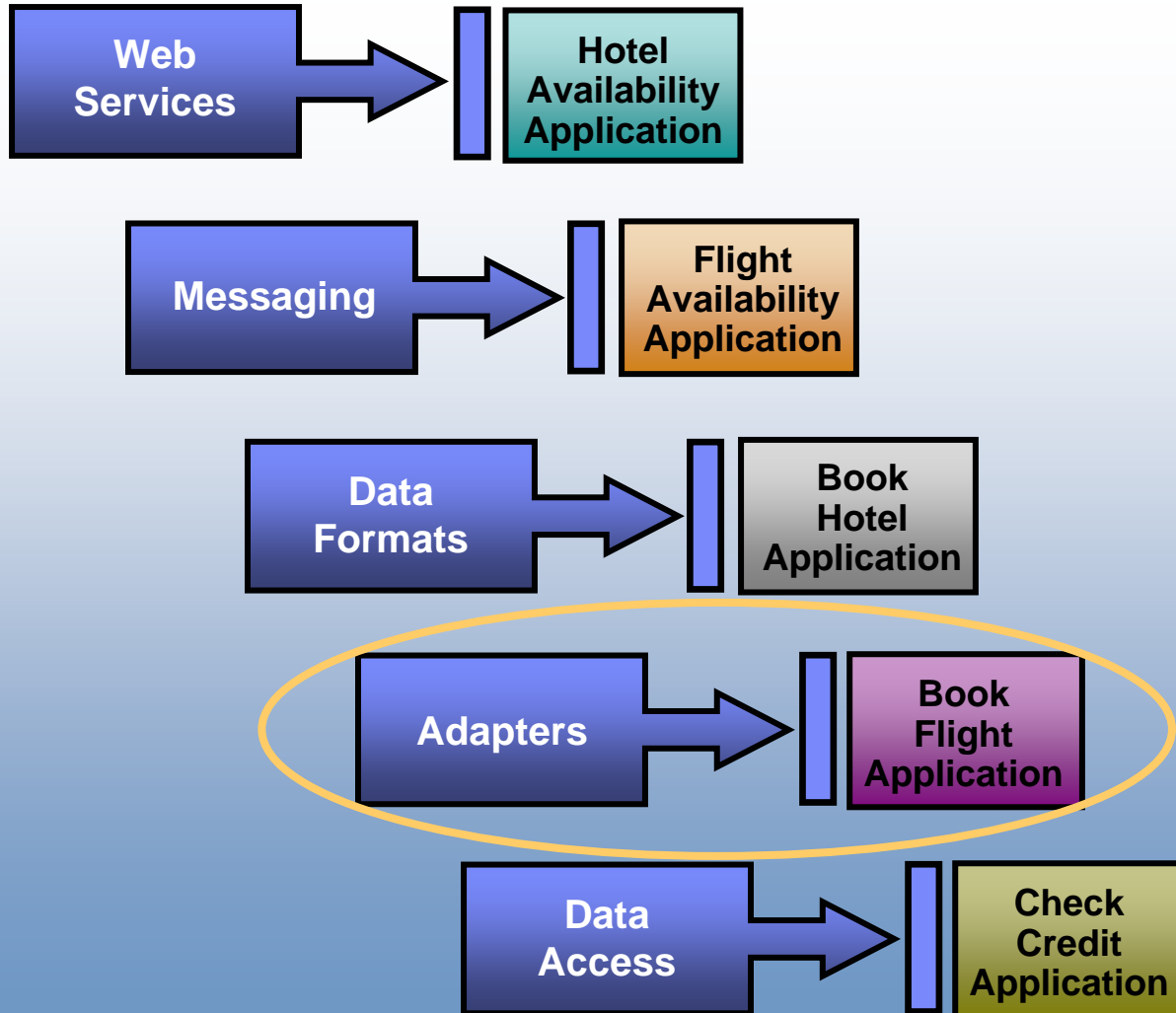
“IBM’s solution provided the scalability, flexibility and openness to support whatever our business units needed to do”

project’s chief technology officer

Extend your advanced ESB to provide true universal transformation with WebSphere Transformation Extender

- Data Enhancement
 - Lookups
 - Data logic and routing
 - Transaction repair
 - Related information and usage rules
- Many-to-Many Transformation
 - Single-transaction conversions and logic
 - Mixed data and source/target types
 - Dependent result sets, nested structure dependencies
- Complex Data Transformation
 - Nested, semi-structured and hierarchical data types
 - Dependent inputs and outputs
 - Binary, packed, EBCDIC, ASCII, mixed character data

There are many ways to link into your SOA and ESB



- **Web Services standards (WS-*)**
- **Messaging clients and bridges (JMS, XMS)**
- **Non-XML data formats (EDI, HL7)**
- **Application APIs and technologies (SAP, CICS)**
- **Data sources (DB2, Oracle)**

IBM provides the broadest reach to 100s of endpoints through our adapters...

● Web Services standards

- WS-*

● Enterprise Applications

- SAP
- Oracle E-Business Suite
- Siebel
- PeopleSoft Enterprise
- JD Edwards OneWorld
- Ariba Buyer
- Lotus Domino
- MS Exchange
- i2

● Messaging / Clients

- JMS
- WebSphere MQ
- XMS
- .NET
- C++
- Java
- MQe
- Multicast
- Real-time IP
- MQTT

● Technologies

- JDBC
- ODBC
- Email
- EJB
- Files
- FTP
- HTTP
- CORBA
- COM
- TCP
- LDAP

● Data Formats

- XML
- COBOL Copybook
- EDI X.12
- EDIFACT
- SWIFT
- FIX
- ACORD
- HIPAA
- HL7
- NCPDP
- C header

● Data Sources

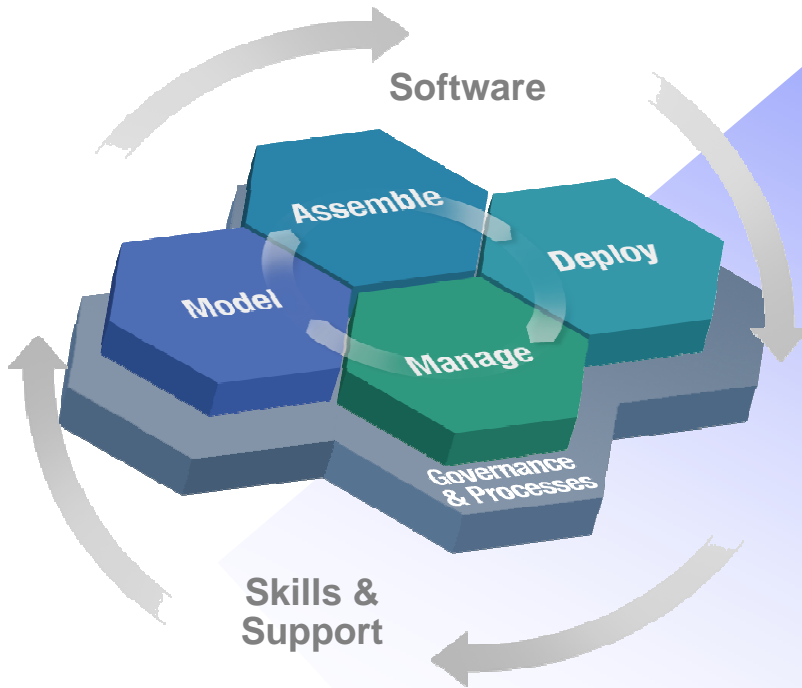
- DB2
- Oracle
- Informix
- MS SQL Server
- Sybase
- JDBC
- ODBC
- VSAM
- IMS/DB
- Teradata

● Host Systems

- CICS
- IMS/TM
- COBOL
- RPG
- Tuxedo
- TN3270
- TN5250
- Batch
- Sequential files

...plus hundreds more from IBM business partners...

IBM DataPower solves SOA XML and Security Issues



An SOA Appliance...



.....An ESB Accelerator

- **Simplifies** SOA with specialized devices
- **Accelerates** SOA with faster XML throughput
- **Helps protect** SOA XML implementations

IBM DataPower redefines the boundaries of middleware extending the SOA Foundation with **specialized, consumable, dedicated SOA appliances** that combine **superior performance and hardened security** for SOA implementations

Conclusion

- IBM is in a unique position to offer our clients a functionally rich, high performance, highly available, scalable and manageable Enterprise Service Bus
- Version 6 of Message Broker provides a first class z/OS subsystem implementation, and is well integrated with the key characteristics of the z/OS platform which its users expect for their business processing
- By extending and accelerating their ESB solutions with WebSphere Adapters, WebSphere Transformation Extender, and SOA Appliance solutions, our clients are leveraging universal connectivity to build their SOA on the robust capabilities of an Advanced Enterprise Service Bus for z/OS




Additional Resources

- WMB v6 Wildfire Class – October 3 – 5, Gaithersburg, MD
 - To register: <http://www.ibm.com/services/learning/us/>
 - Course Code: WMB06

- Developer Works article”
 - “The Value of WebSphere Message Broker Version 6 on z/OS”
 - http://www.ibm.com/developerworks/websphere/library/techarticles/0604_odowd/0604_odowd.html

- For a more detailed look at WebSphere Message Broker for z/OS, view the following webcast:
 - <http://www-306.ibm.com/software/os/zseries/webcast/6apr/>

Speaker Bio

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Nick is based in Raleigh-Durham, where he lives with his wife, 2-year-old son, and a healthy addiction to golf.	

தனக்கு

Tamil

謝謝

Traditional Chinese

עודרי נדרי

Hebrew

Спасибо

Russian

Gracias

Spanish

Thank You

English

شكرا

Arabic

Obrigado

Brazilian Portuguese

Grazie

Italian

谢谢

Simplified Chinese

Danke

German

ขอบคุณ

Thai

Merci

French

தனக்கு

Tamil

ありがとう

Japanese

고맙습니다

Korean