Connecting Everything – Trends in Connectivity and Integration
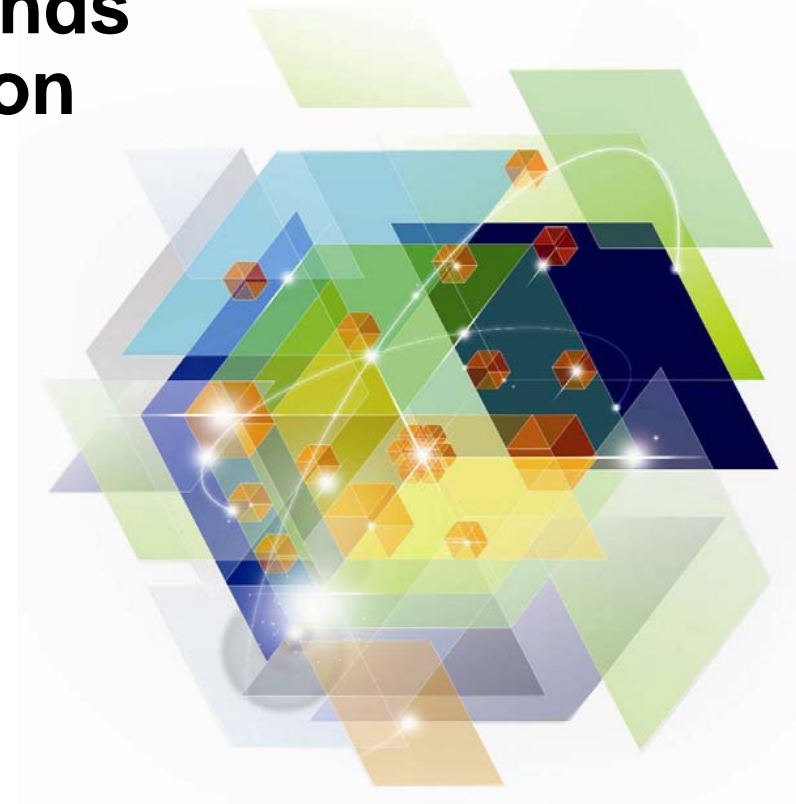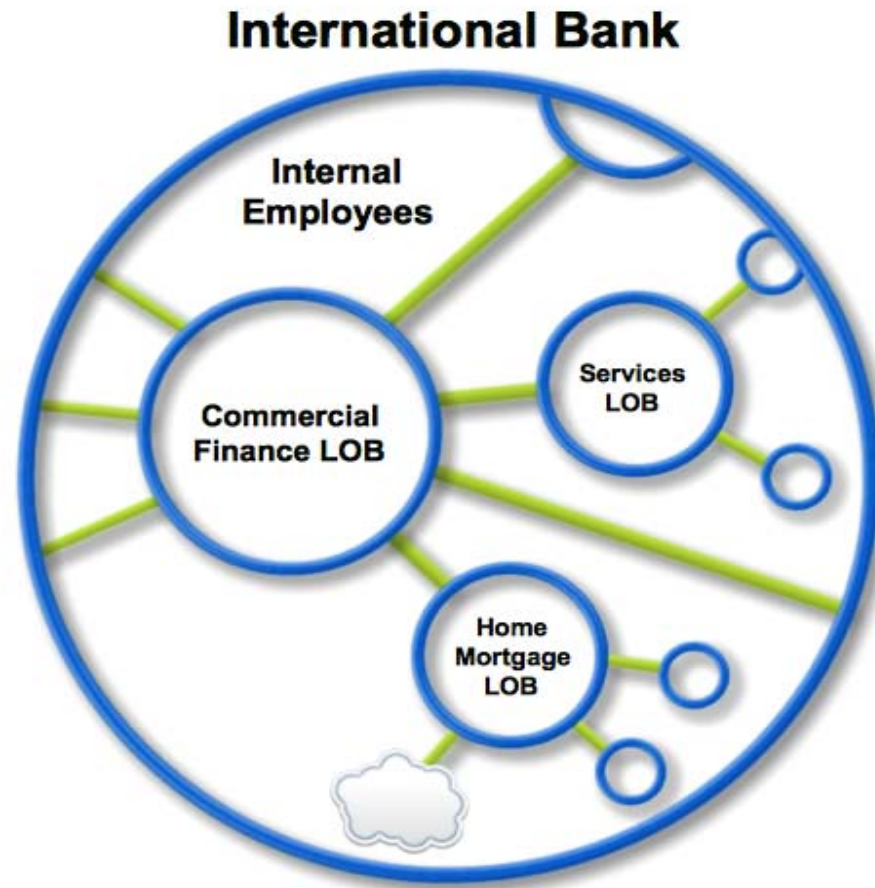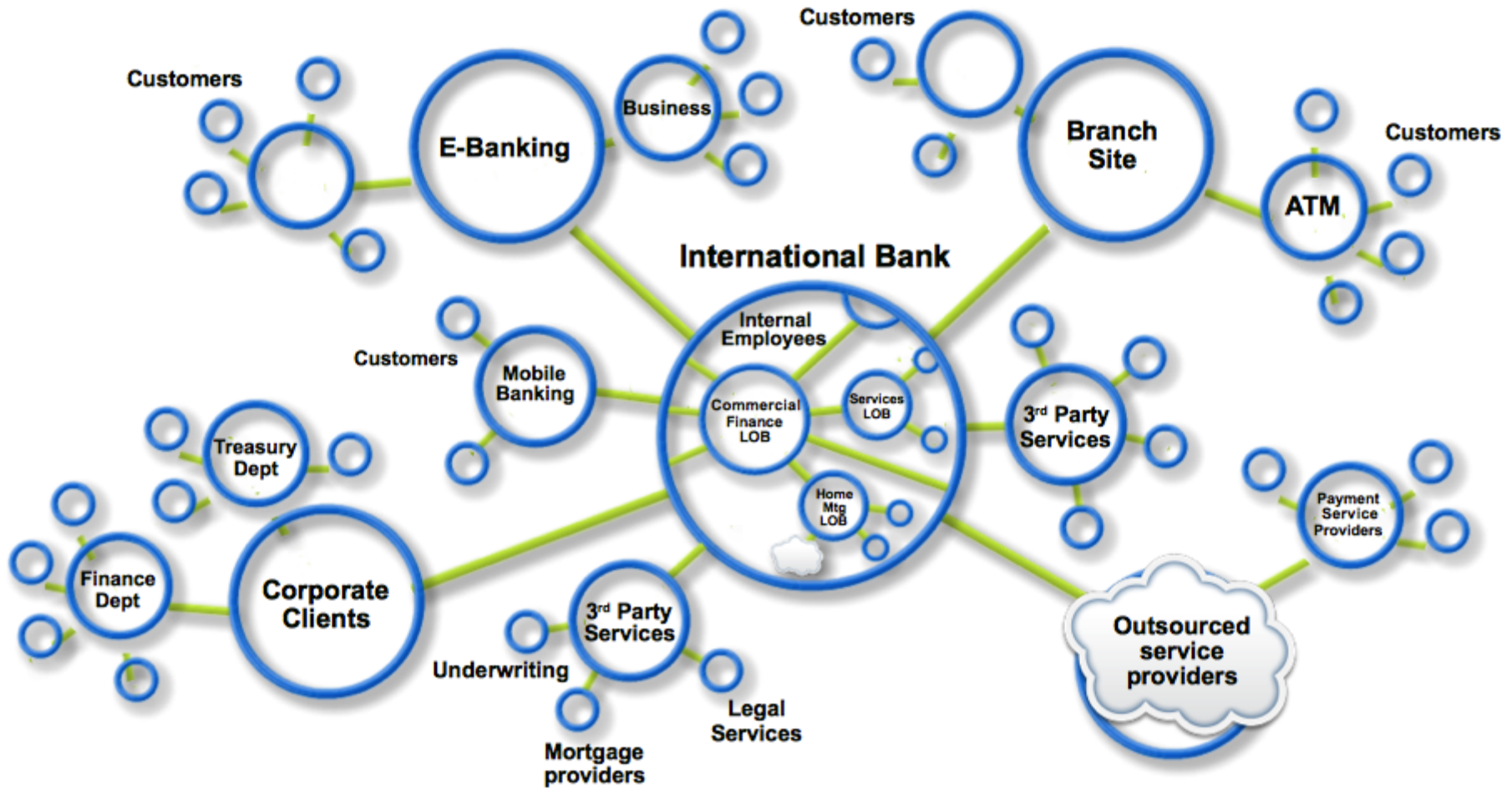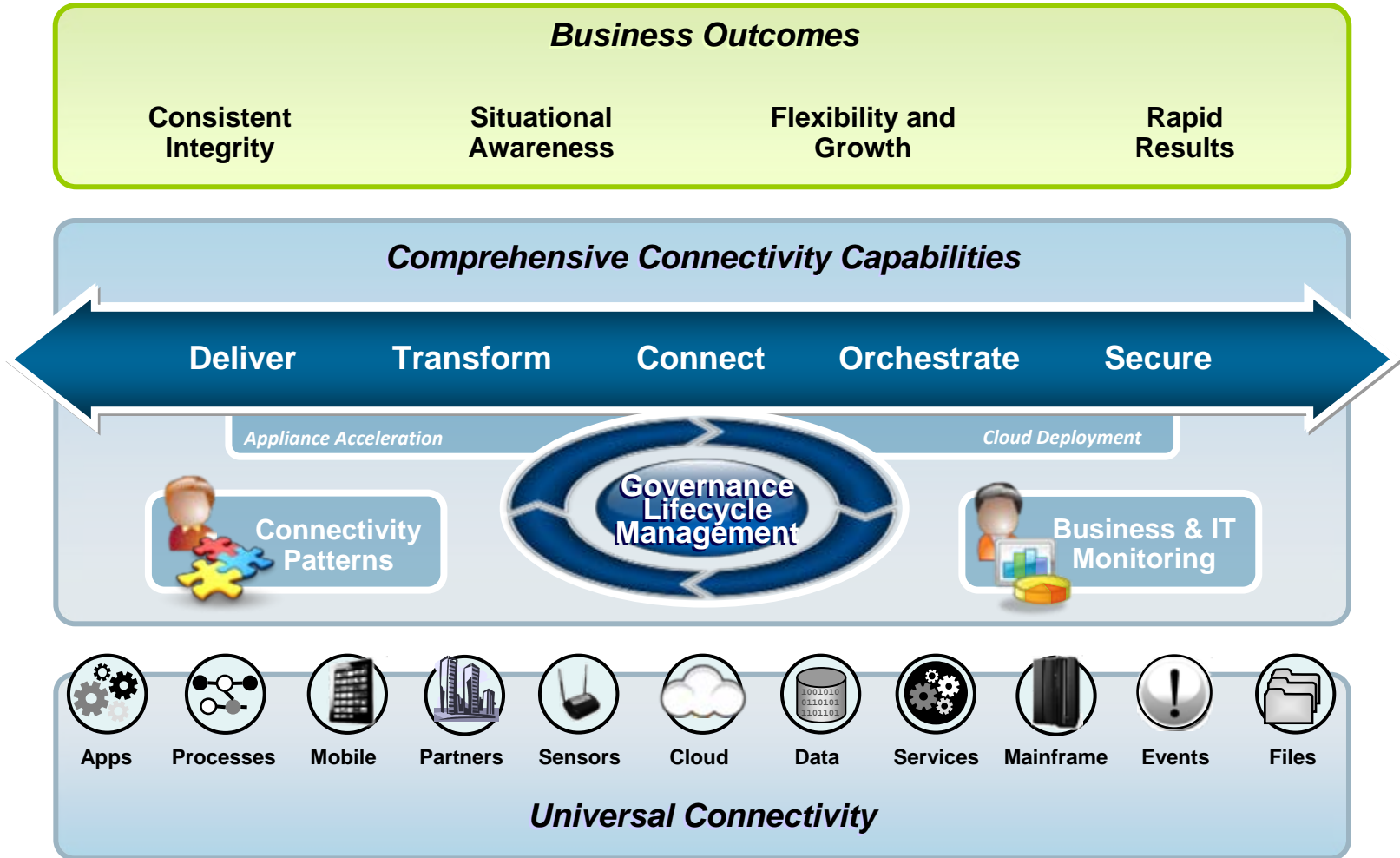
Connectivity use cases from enterprise scope…

To the entire dynamic business network
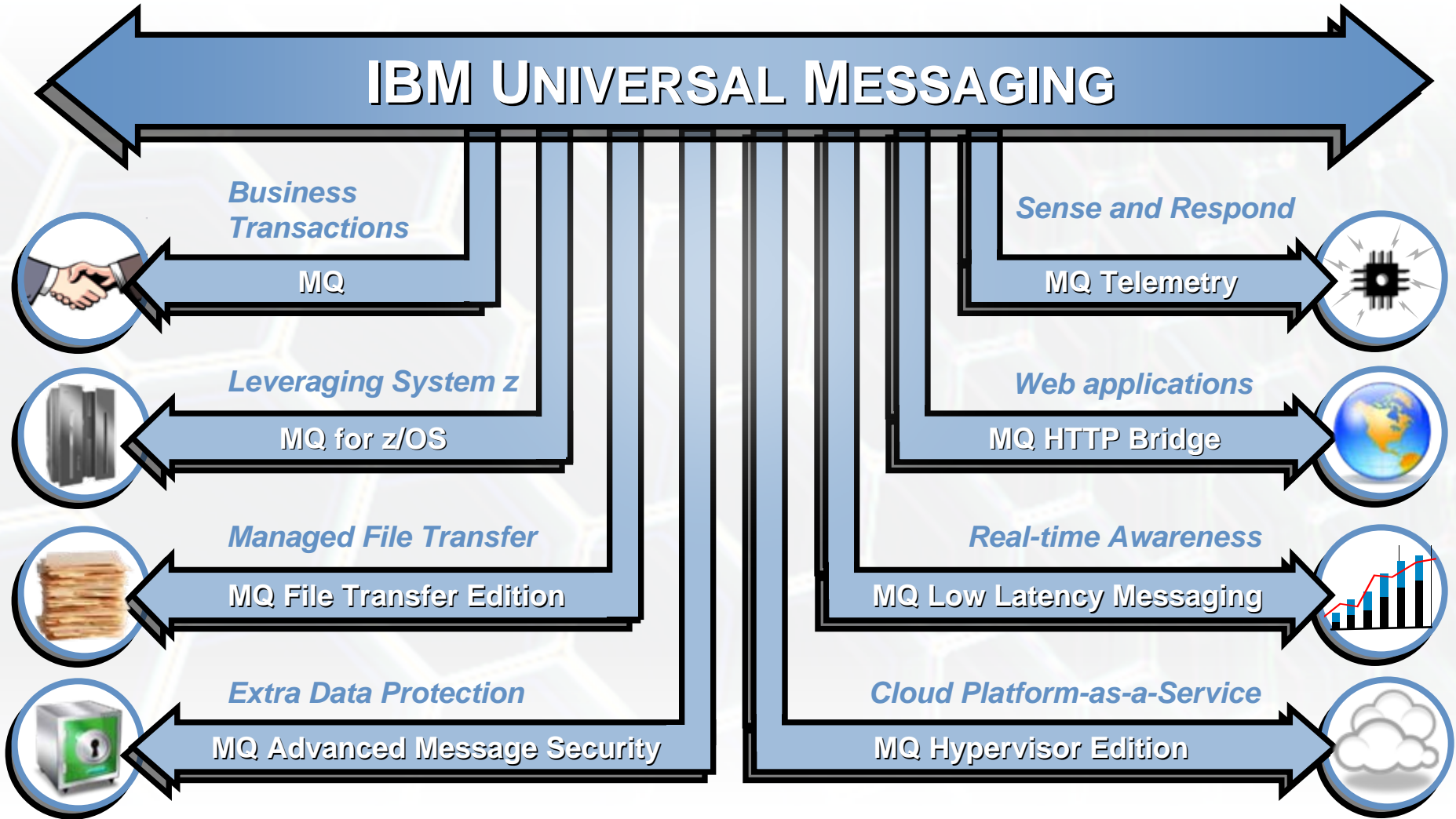
IBM Connectivity and Integration

Business Outcomes

Consistent Integrity	Situational Awareness	Flexibility and Growth	Rapid Results

Comprehensive Connectivity Capabilities

Deliver   Transform   Connect   Orchestrate   Secure

Appliance Acceleration   *Cloud Deployment*

Connectivity Patterns

Governance Lifecycle Management

Business & IT Monitoring

Apps   Processes   Mobile   Partners   Sensors   Cloud   Data   Services   Mainframe   Events   Files

Universal Connectivity

MQ is IBM's Messaging Backbone

Proven, flexible business data delivery from anywhere to everywhere

IBM UNIVERSAL MESSAGING

|	
Business Transactions	*Sense and Respond*
MQ	MQ Telemetry
Leveraging System z	*Web applications*
MQ for z/OS	MQ HTTP Bridge
Managed File Transfer	*Real-time Awareness*
MQ File Transfer Edition	MQ Low Latency Messaging
Extra Data Protection	*Cloud Platform-as-a-Service*
MQ Advanced Message Security	MQ Hypervisor Edition

A lot has happened in the past 12 months

Let's get updated on

- MQ

- MQ Low Latency Messaging

- MQ File Transfer Edition

- MQ Telemetry

- WebSphere Message Broker

- WebSphere Enterprise Service Bus

- WebSphere DataPower

- WebSphere Service Registry and Repository

Connectivity to, from and within zEnterprise
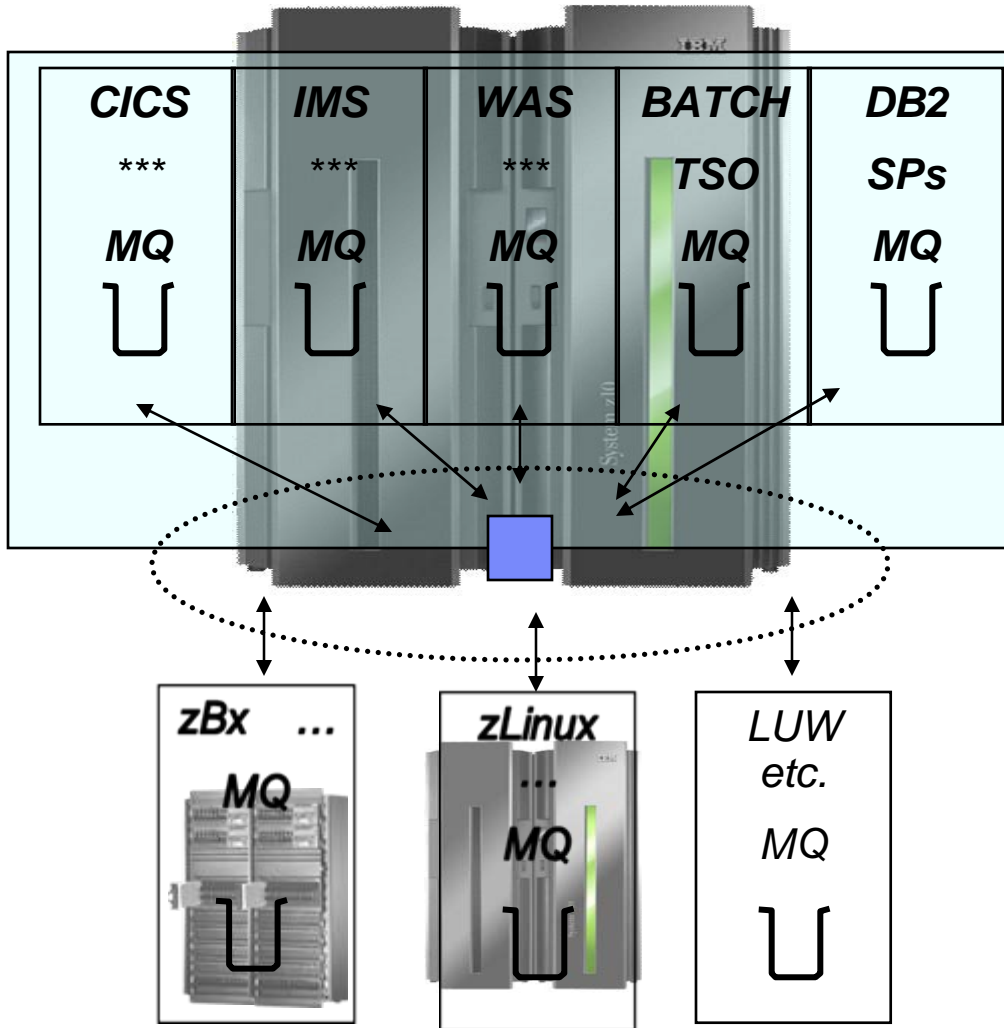
Sysplex Shared Queue Message Availability:
Goal is to provide as near as possible continuous message data access under ALL failure scenarios.
- (These scenarios include application/transaction failures, application execution env. failures, Qmgr failures, CF failures, DASD failures, network failures, CEC failures)

Sysplex Shared Queue Message Capacity:
Goal is to provide terabytes of affordable message capacity such that MQ is capable of meeting all business requirements for reliable message storage when processing applications are unable to run for whatever reason

Reliable, Flexible and Secure Messaging
IBM WebSphere MQ v7.1

- *Flexible configurations* supporting high availability, load balancing and time independent integration

- *Guaranteed delivery* automatically recommits failed transactions shielding your code and applications from service and network failures

- *Unmatched integration* supports CICS, IMS, DB2, Microsoft .NET and J2EE environments

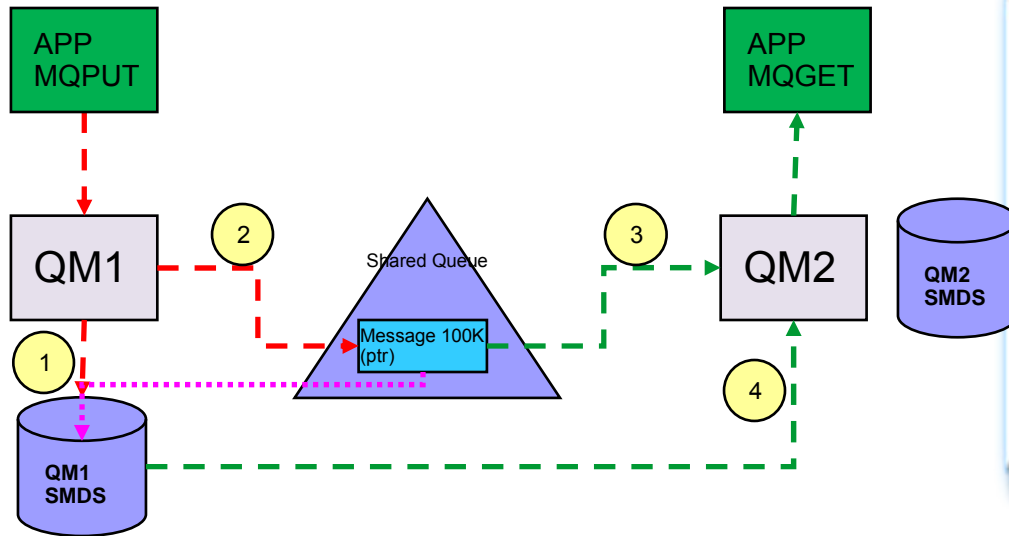- *Dynamic* leveraging *publish and subscribe* patterns for flexible integration

Highlights

- **Configurable Security**

  - Uses new improved security standards

  - Eliminates the need for homegrown security coding

- **Multi-version or relocation install**

  - Determine where to install versions of MQ

  - Bridge Applications on the same machine

- **Publish/Subscribe Multi-cast**

  - Broadcast to all systems on the network level speeding up data delivery

- **Reduced TCO through enhanced performance and scale**

Specific Enhancements for System z
IBM WebSphere MQ v7.1 on z/OS

APP
MQPUT

APP
MQGET

QM1

2

Shared Queue

3

QM2

QM2
SMDS

Message 100K
(ptr)

1

4

QM1
SMDS

- Automatic recovery capability for connectivity loss to MQ Shared Queue Structures in a Coupling Facility improves the already highly-available MQ Sysplex shared queues

- New Shared Message Datasets (SMDS) feature for large shared queue messages allow "large" to be customisable providing much greater customer control over usage of Coupling Facility storage

Availability Enhancements

Performance Enhancements

- Scaling improvements for multi-way configurations –

- Over **ONE MILLION messages/sec** (2KB non-shared) through a **single** Queue Manager on a 30-way z196

- Over 150,000 messages/sec (2KB shared) using a 3 Queue Manager QSG on a 30-way z196

- New Shared Message DataSets (SMDS) for storing large shared messages provide significant performance and capacity improvements over DB2

Reliable, High Volume
IBM WebSphere MQ Low Latency Messaging v2.6

- *Respond to business opportunities faster* with ultra low latency, high throughput messaging

- *Minimize disruption to business* by addressing critical need for constant latency
    - Near zero jitter
    - Constant, predictable latency

Highlights
- – Increased throughput and industry leading latency
    - **98 million** messages per second
    - **1 microsecond** latency for shared memory
- – Enhanced Consumability
- – Improved Networking
- – Expanded Platform coverage

Deliver high volume low latency solutions with high throughput, flexible message delivery, filtering and congestion control

Comprehensive Managed File Transfer Environment
IBM WebSphere MQ File Transfer Edition v7.0.4

- Enables reliable *Managed File Transfer*

- *Leverages existing investments* in MQ networks and skills

- Connects *batch-driven file-based* systems with message-oriented online applications and services

- Supports rapid development of *ad hoc transfers*

Provide a secure and reliable Managed File Transfer environment across Connect:Direct and WMQ FTE endpoints

Highlights

- Enables MFT across a combined MQ and Connect:Direct solution

- Transfers files into and out of existing Connect:Direct networks

- Visibility of files that transfer into and out of existing Connect:Direct networks

WebSphere MQ Telemetry

- Messaging optimized for smart sensors and telemetry devices

- Enables intelligent decision-making based on remote real-world events

- Remote resource management of static or moving assets, people, locations

Telemetry capabilities
  - Direct device integration into back-office
  - Tiny messaging optimized for resource-constrained devices & gateways (RTUs)
  - Terse protocol & compact header for fragile & pay-per-byte networks
  - Advanced device level data buffering

  - Event-driven publish-and-subscribe delivery of only significant information
  - Open protocol encourages widespread device enablement
  - Last Will and Testament for automated handling of device failures or outages

intelligent　　　**interconnected**　　　**instrumented**

headquarters

IBM Connectivity

logistics　homes　operations　stores　offshore

MQ　　　MQ Telemetry

sensors　meters　controllers　rfid　scada
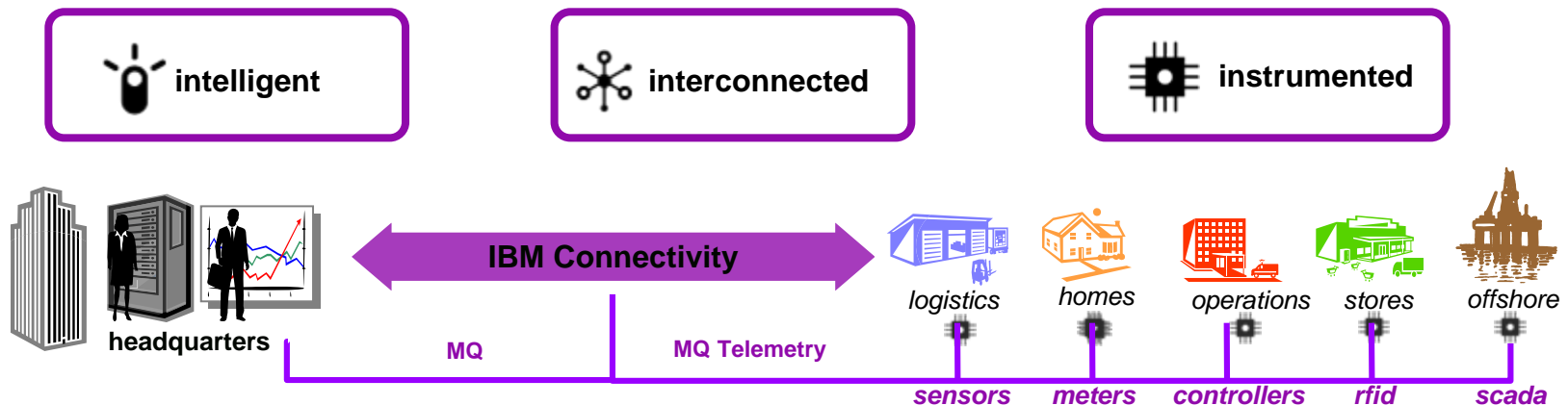
Simple yet powerful integration across the enterprise
IBM WebSphere Message Broker V8

- Universal Connectivity *FROM* anywhere*, TO* anywhere

- *Simplicity and Productivity* – Simple to learn, develop, deploy, manage, migrate

- Providing *industry-tailored value-add* with Connectivity Pack for Healthcare delivering HL7 support, clinical application patterns and operational monitoring

Highlights

- **Enhanced audit of in-flight data with new Edit, Record and Replay functionality**

- **Expanded standards support with new DFDL based Parser and Graphical Data Mapper tooling**

- **New support for integration with IBM Sterling Connect:Direct**

Record and replay for audit of in-flight data

IBM WebSphere Message Broker V8

- *Monitoring data* *flowing across corporate networks is becoming an* **imperative for many large organizations**

- **View, edit, record and replay** *data flowing through the broker from all sources, including Messaging, Web Services and ERP systems*

Available to users on all supported OS

System of Record

record

edit

replay

Monitor - Browser based graphical tooling with secure, role-based access with

predefined filters to view data, based on message, transaction ID or payload

Audit - Store selected data to any of the WMB supported databases for records

Manage - Quickly identify and Edit selected messages to correct erroneous data. Replay the data through standard flows or to end point applications for downstream processing
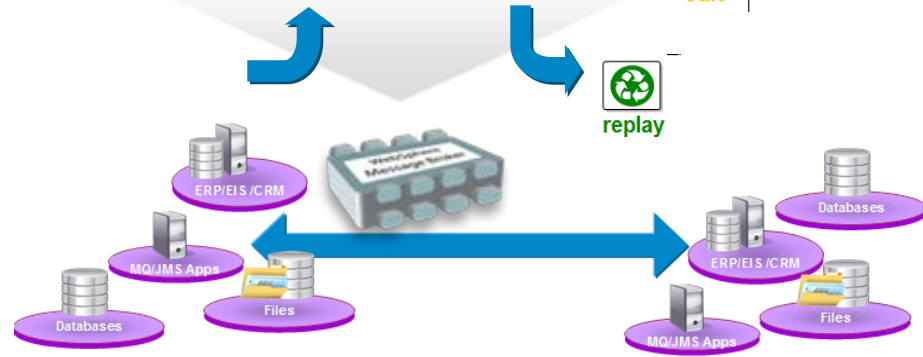
Graphical mapper and high performance parser

IBM WebSphere Message Broker V8

Available to users on all supported OS

- *New **Graphical Data Mapping tool** for Improved **usability** and **performance** when creating models*

- *New **DFDL (Data Format Description Language) parser** optimised for text and Binary data*

- **Visually construct source and target field mappings using graphical representation of message data**
  - Create models by marking up example data
  - Apply advanced transformations
  - Call user defined transformation in Java, SQL and XQuery 1.0
  - Guided authoring wizards

- **Open standards based parser – create and reuse maps across your other applications**
  - provided alongside existing WMB MRM parser
  - Improved WMB transformation performance for text & binary data
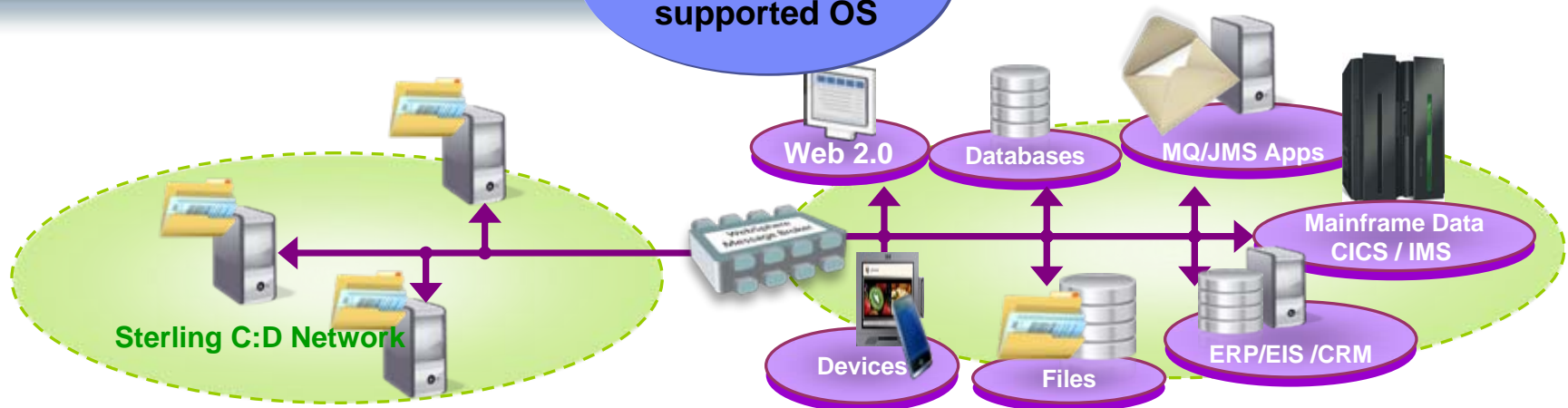
Enhanced connectivity for file based B2B

IBM WebSphere Message Broker V8

Simple bridge between Sterling File Based and Websphere MQ messaging-based networks

- Eliminate the need for application re-engineering
- Provides connectivity to new endpoints not available to C:D users - including Web2 technologies

– **New Connect:Direct WMB nodes**
Handle file to message mappings including batch of records within a file → Set of messages and vice versa

– **New development patterns provided in the WMB toolkit for rapid development including** File to message, message to file

– Complements IBM MQ FTE MFT support

Available to users on all supported OS

Web 2.0 **Databases** **MQ/JMS Apps**

Mainframe Data CICS / IMS

Devices **Files** **ERP/EIS /CRM**

Sterling C:D Network

Scale with WebSphere Message Broker

WMB Advanced and WMB for z/OS

WebSphere Message Broker Advanced
Full function fully scalable, robust ESB capability for large business users and enterprises

WebSphere Message Broker Standard
Full function ESB for Single line of business or small business with few applications

WebSphere Message Broker Express
Designed to provide a low-cost entry point for low volume, low complexity integration needs

Think big
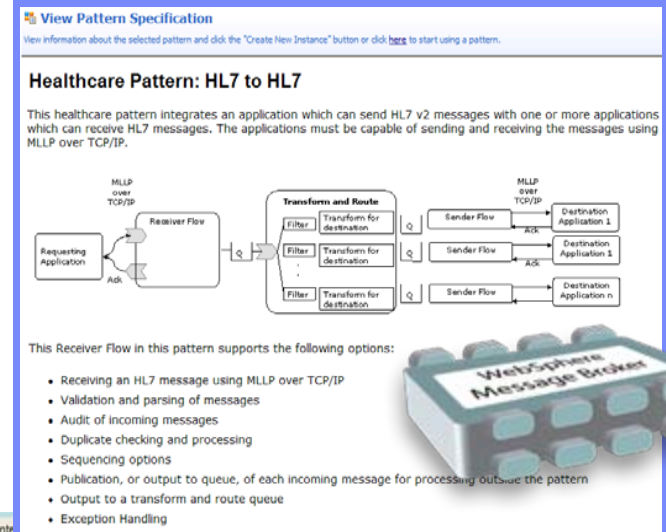
Start small

Scale fast

WebSphere Message Broker Connectivity Pack for Healthcare

What's New ?

Available to users on all supported OS

- *Tooling **tailored to healthcare IT** professionals*
- ***Connects and integrates** new and existing HL7 based applications*
- ***Builds directly upon scalability, broad connectivity and quality of WMB v7***

- New offering that ***adds rapid pattern-based connectivity*** for HL7 based patient administration systems - *Rapidly connect and manage clinical applications without detailed knowledge of messaging or WMB technologies.*

- ***Operational monitoring of clinical applications*** provided out of the box

View Pattern Specification

View information about the selected pattern and click the "Create New Instance" button or click here to start using a pattern.

Healthcare Pattern: HL7 to HL7

This healthcare pattern integrates an application which can send HL7 v2 messages with one or more applications which can receive HL7 messages. The applications must be capable of sending and receiving the messages using MLLP over TCP/IP.

This Receiver Flow in this pattern supports the following options:

- Receiving an HL7 message using MLLP over TCP/IP
- Validation and parsing of messages
- Audit of incoming messages
- Duplicate checking and processing
- Sequencing options
- Publication, or output to queue, of each incoming message for processing outside the pattern
- Output to a transform and route queue
- Exception Handling

ESB for quick integration of applications and processes
WebSphere Enterprise Service Bus V7.5

- ***Decouples*** complex ***integration logic*** from each application providing consistency in connectivity across point-to-point infrastructure diversity

- Provides service mediation and hosting on ***common internet-standard application infrastructure*** based on WAS

- Extends to service registry and repository for ***SOA solutions*** with a published catalog of services supporting dynamic endpoint resolution

- New in V7.5:
  - Common Web 2.0 role-based business space UI for SOA users of WESB and WSRR, extending to BPM
  - Policy resolution extended to cover all binding types and manual endpoints configured in WSRR
  - More powerful transformations with XSLT2
  - Textual mediation flow format for a scriptable ESB allowing XML editing with tool of choice
  - Dynamic service connectivity for any application, including WAS and BPM (any edition)

Portal **BPM**

Commerce **WESB**

Adapters

WAS ND, WAS z/OS
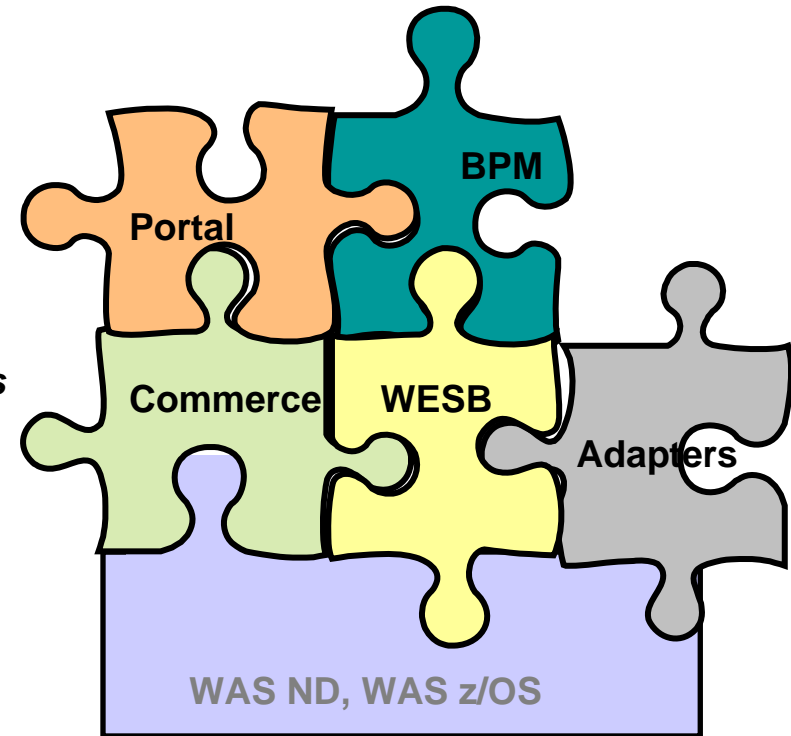
Achieve efficiencies in skills, cost and time-to-value across your middleware solutions
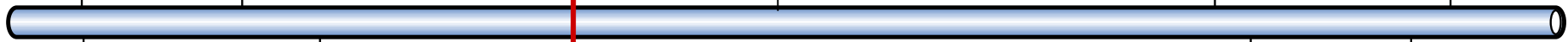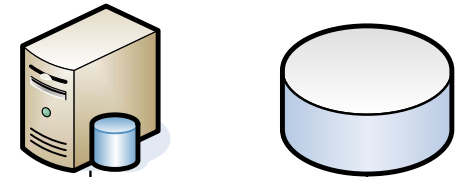
The "Hybrid Bus" Mega Pattern

WebSphere Enterprise Service Bus - optimized with WebSphere Application Server for an integrated SOA platform and BPM

WebSphere Message Broker - built for universal connectivity and transformation in heterogeneous IT environments
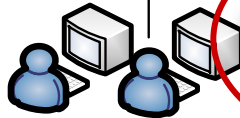
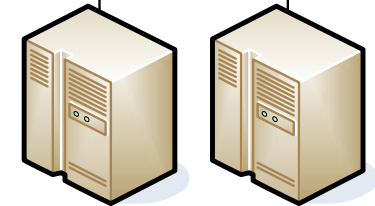Intranet / Extranet / Internet Portals

Data Stores

ESB
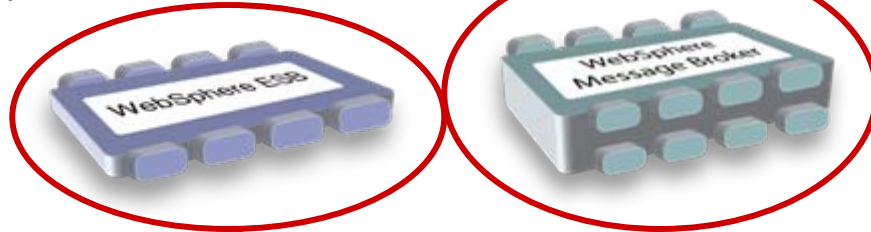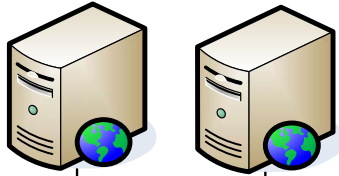
Legacy Client-Server

Back office / Call Centre

WebSphere DataPower appliance - purpose-built hardware for simplified deployment and hardened security

System Z

Increased visibility and control for insight into your SOA
WebSphere Service Registry and Repository V7.5

- Ensures ***awareness of available applications, services*** and their consumers with associated metadata and documents throughout the organization

- Helps implement recommended practices and ***increases runtime agility*** enabling a policy driven SOA ensuring:
  - Consistent application of operational policies
 - Enforcement of governance lifecycle policies

Highlights:

- Improved role-based business space UI widgets for ***improved user experience***, including report hosting to quickly view reports

- ***Enhanced search capability*** allowing type-ahead search through metadata and documentation

- Updated policy ***authoring, attachment and analytics***, including:
  - Click-to-assign governance lifecycles
  - Assertion wizard to help assign assertions to lifecycle transitions
  - Operational policy analytics for WebSphere Message Broker

Gain insight into SOA services and their consumption, policies and associated metadata in your enterprise

Service Federation Management Mega Pattern
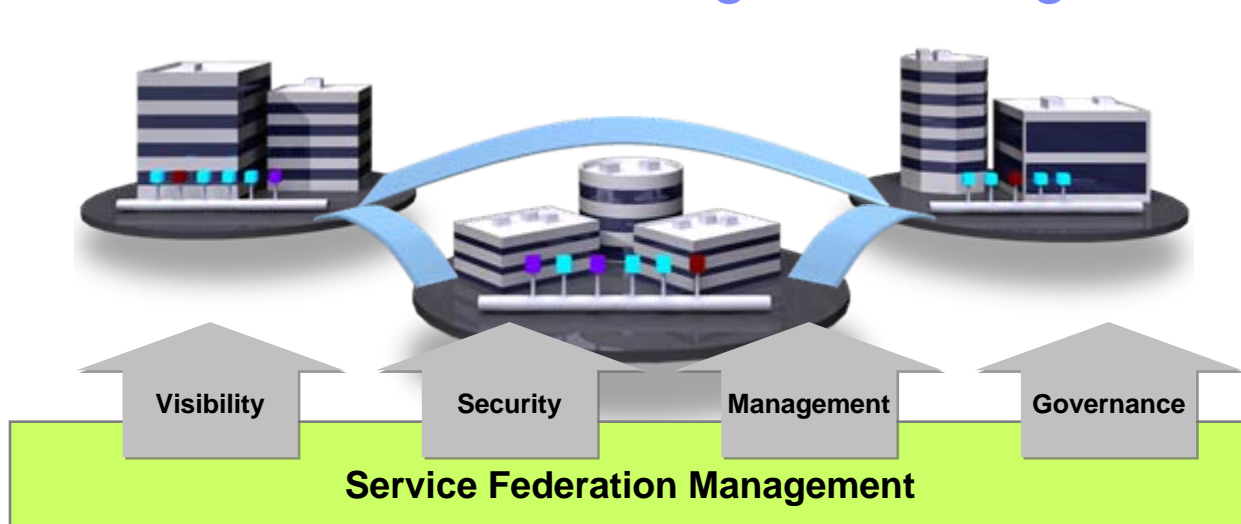
Objectives

- Enable enterprise-wide service reuse seamlessly, transparently and in a controlled way

- Secure, Manage, Monitor and Govern service sharing across heterogeneous domains

- Provide IT flexibility that handles the necessary separation of concerns and responsibility required by the different service domains

- Automated deployment of pre-tested proxies to eliminate errors and reduce quality assurance costs

Visibility   **Security**   **Management**   **Governance**

Service Federation Management

Service Federation Management enables a federated enterprise, allowing service reuse that spans domain boundaries. It manipulates the connectivity infrastructure of the individual service domains to establish enterprise-wide service visibility, service security, service management and service governance.

A federation **model** that supports a holistic approach
Simple Service Connectivity Management **protocol**
Simple federation **console** for managing federations across IBM and non-IBM runtimes

Early registration discounts available!
http://www-01.ibm.com/software/websphere/events/impact/registration.html

Questions?