



IBM SOA

Mission Critical SOA with Reuse and Connectivity

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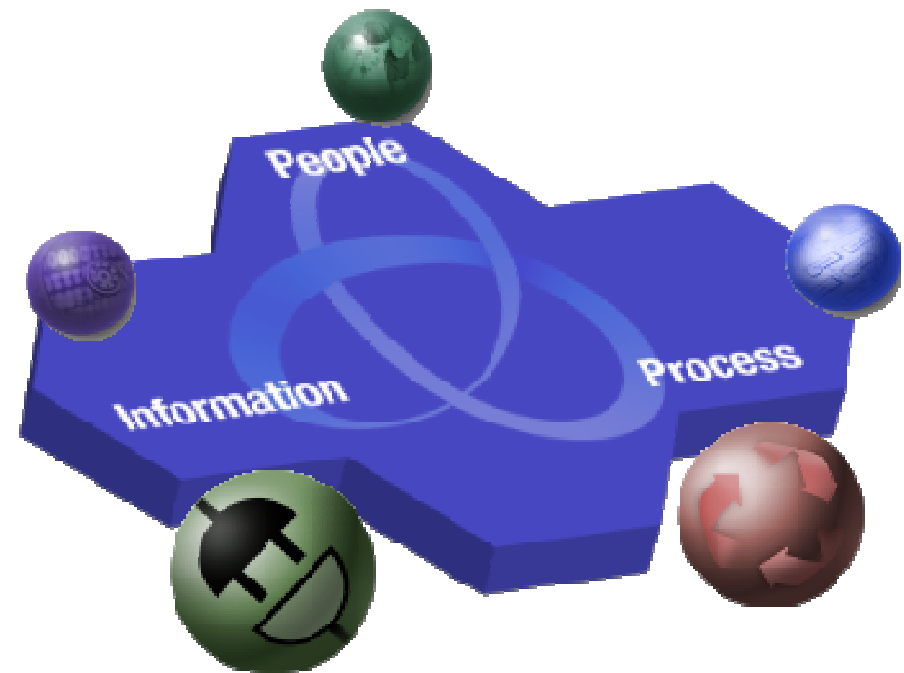
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SOA Entry Points – Reuse and Connectivity

IT focused entry points to enable Flexible IT

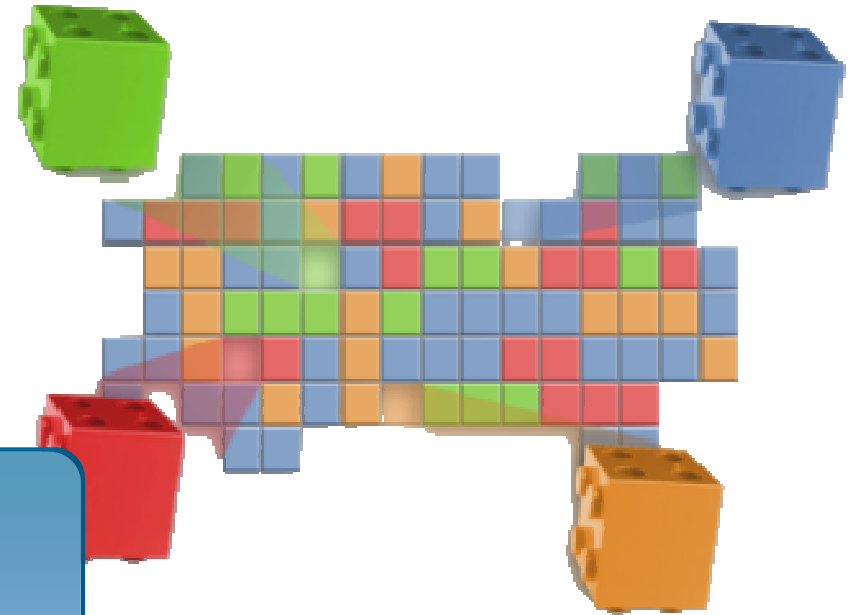
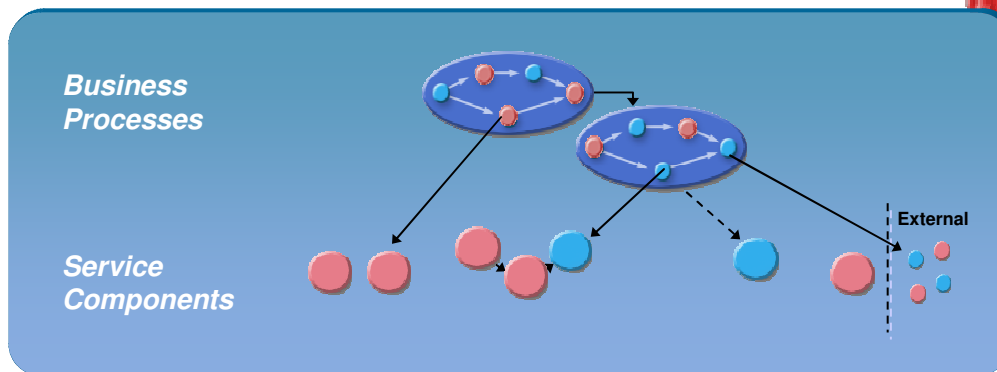
- **Reuse** creates new services from legacy assets to:
 - Extend the value of legacy systems by modernizing application infrastructure
 - Reduce development costs by reusing the decoupled services and connections
 - Leverage existing systems and infrastructure to provide new functionality
- **Connectivity** establishes links between applications and services using an Enterprise Service Bus to:
 - Deliver a robust and resilient connectivity infrastructure
 - Provide integration between different Lines of Business without adding complexity
 - Bring together new and existing IT assets with high performance, available everywhere



How Do You Support a Business Process in a SOA? To Start with, you need Services.....

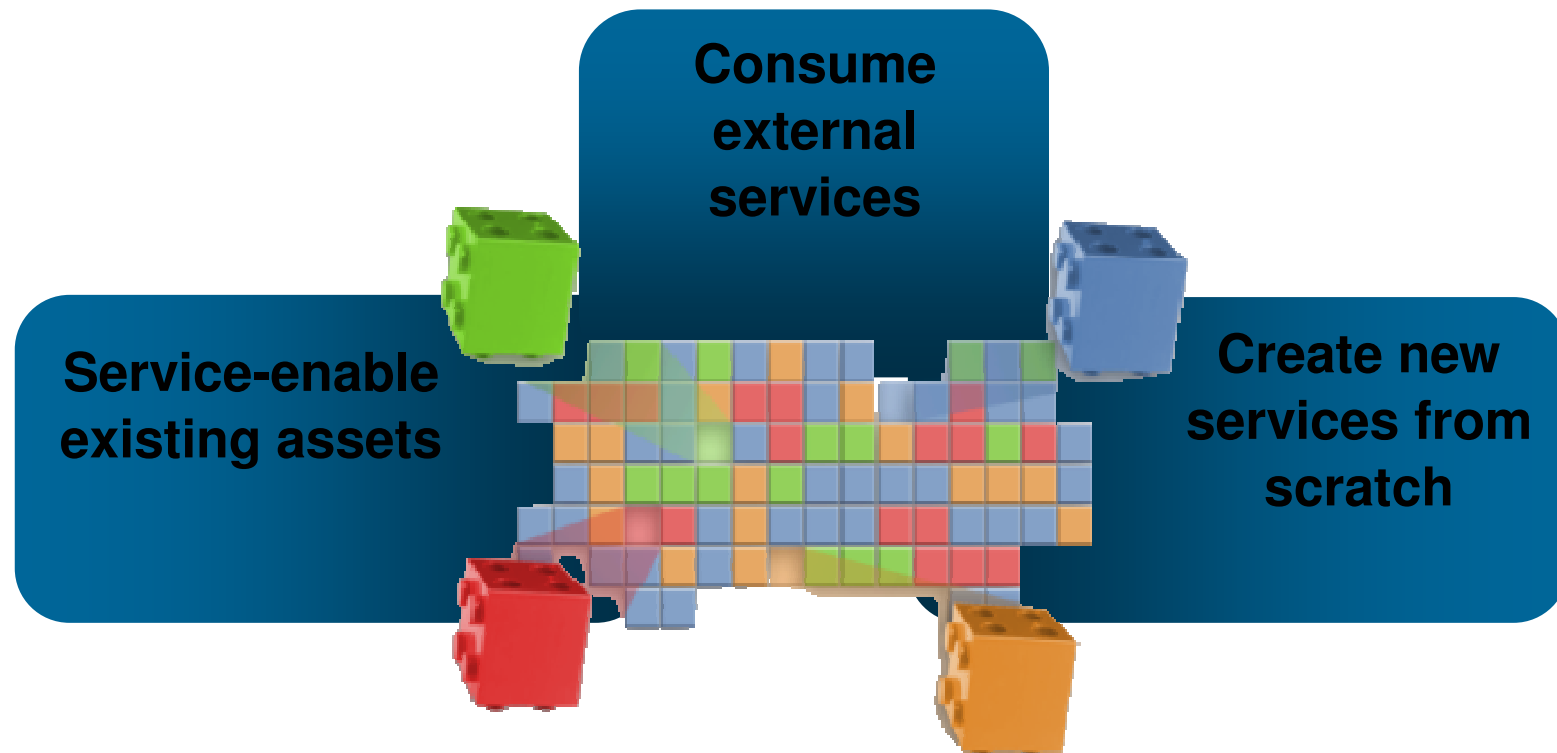
■ Inventory Analysis

- Business processes are made up of individual tasks
- What services are needed to perform these individual tasks?
- Where do these services come from?



Start by Comparing What You Need to What You Already Have ...

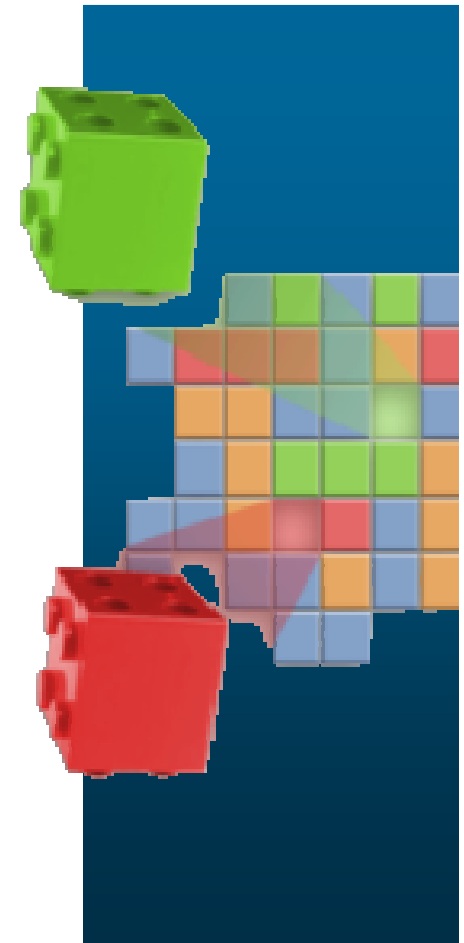
Three key sources of services for SOA



1. Service-enable high-value existing IT assets for reuse
2. Use externally provide services to support commodity tasks
3. Fill in gaps by creating new services

Business Value of Reuse – enabled by SOA

- Existing business logic is among the most valuable assets a company owns
- It is 5X less expensive to reuse existing applications than to write new applications from scratch*
- Reusing proven, time-tested applications results in significantly lower risks and faster time to market
- Maintenance overhead shrinks with greater use of proven and tested code for common functions



Component Business Modeling (CBM)

- Analytical technique that breaks business functions into a structured collection of components
- “A Business on One Page”
- Identifies services areas that are differentiating by applying objective evaluation criteria
- Generates views (“heat maps”) that show where transformation opportunities lie
- Develops business case for IT and business transformation opportunities

	Product Management	Customer Relationship	Manufacturing	Supply Chain & Distribution	Business Administration
Strategy	Category/Brand Strategy	Customer Relationship Strategy	Manufacturing Strategy	Supply Chain Strategy	Corporate Strategy
	Category/Brand Planning	Customer Relationship Planning	Supplier Relationship Management	Supply Chain Planning	Corporate Planning
Tactics	Brand P&L Management	Assessing Customer Satisfaction	Production and Materials Planning	Distribution Oversight	Business Performance Management
	Matching Supply and Demand	Customer Insights	Manufacturing Oversight		Inbound Logistics
	Marketing Development & Effectiveness	Account Management	Supplier Control	Outbound Logistics	Organization and Process Design
	Product Ideation	Value-Added Services	Make Products	Distribution Center Operations	Legal and Regulatory Compliance
Execution	Concept/Product Testing	Customer Account Servicing	Assemble/Pkg. Products	Transportation Resources	Treasury and Risk Management
	Product Development	Retail Marketing Execution	Plant Inventory Management		En route Inventory Management
	Product Management	In-store Inventory Mgmt	Manufacturing Procurement	Indirect Procurement	Facilities and Equipment Management
	Marketing Execution	Customer Directory		HR Administration	IT Systems and Operations
	Consumer Service				
	Product Directory				

Strategic differentiation

Competitive parity

Basic

High capital area

High cost area

High cost & capital area

Seek external provider

Consolidate

Integrate and redesign

No action

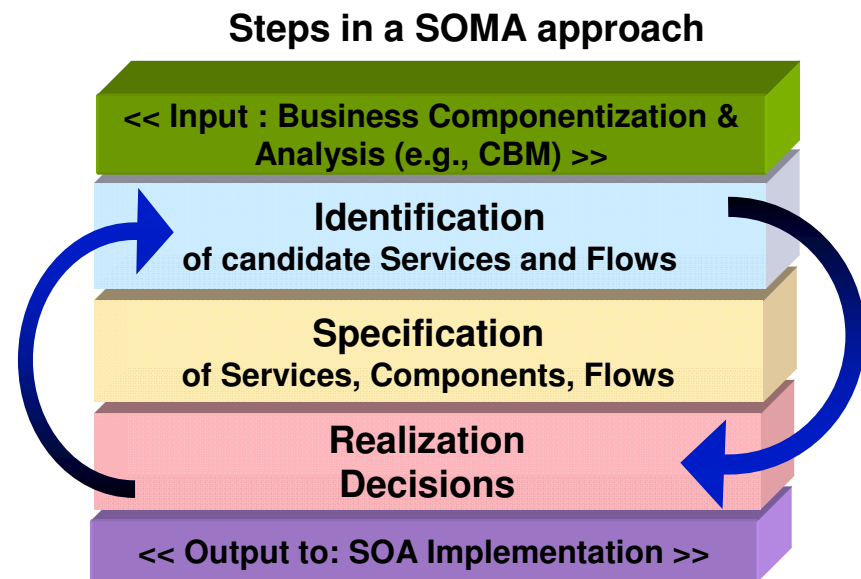
* Example of a CBM map for a consumer products company

A Methodology to Identify & Build your Services: Service-Oriented Modeling and Architecture (SOMA)

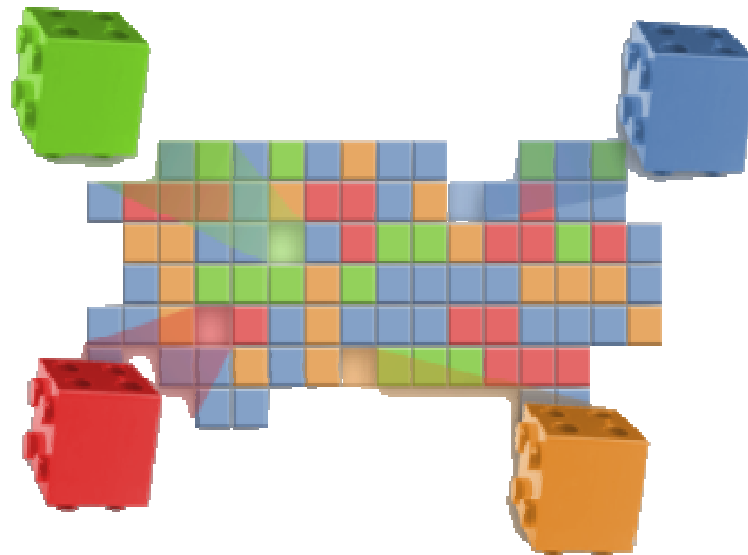
- A step-by-step method for creating a service-oriented architecture – based on best practices from 5+ years of SOA implementations
- Enables the identification, specification and realization of the services offered by the business and the components that realize those services

What you can expect to get out if it:

- SOA design and transition recommendations
- A list of candidate services
- Detailed specifications of the SOA service model components
- SOA solution architecture



How do you connect the assets and services that support your business process?



Connectivity needs

- Enable "any-to-any" linkage and communication inside and beyond your company
- Simplify connectivity by ensuring secure, reliable, and scaleable pipeline of information

Introducing the Enterprise Service Bus

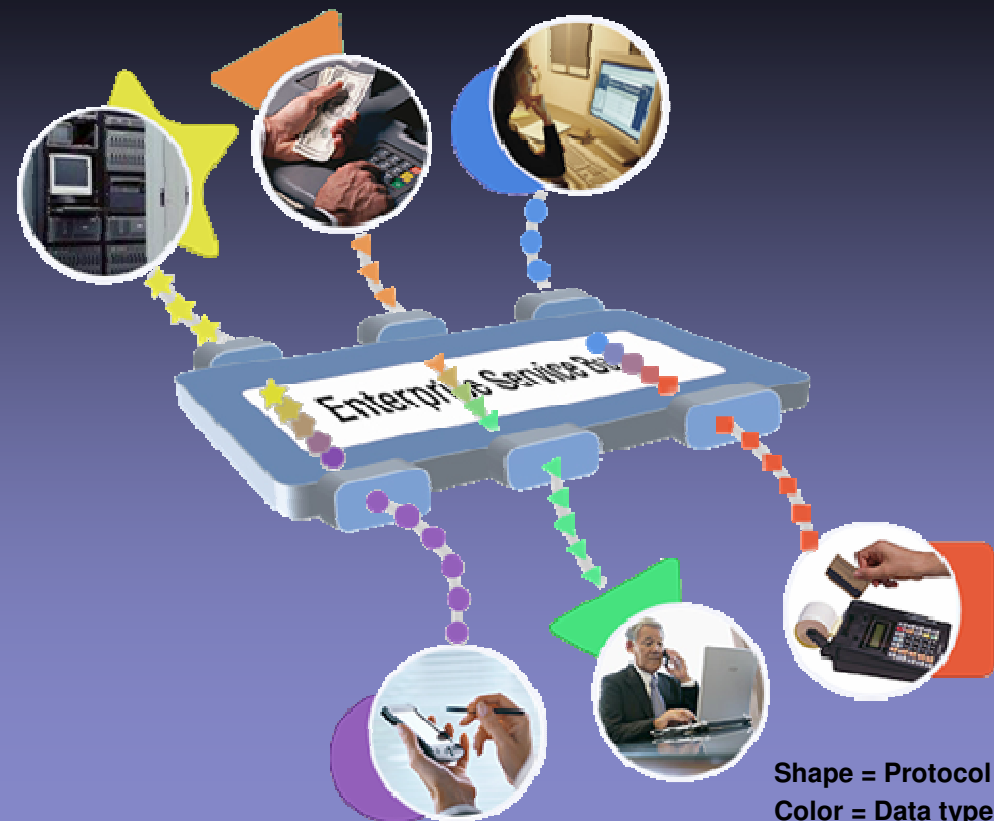
An Enterprise Service Bus (ESB) is a flexible connectivity infrastructure for integrating applications and services.

An ESB powers your SOA by reducing the number, size, and complexity of interfaces.

An ESB performs the following between requestor and service

- ***ROUTES*** messages between requestor and service
- ***CONVERTS*** transport protocols between requestor and service
- ***TRANSFORMS*** message formats between requestor and service
- ***DISTRIBUTES*** business events

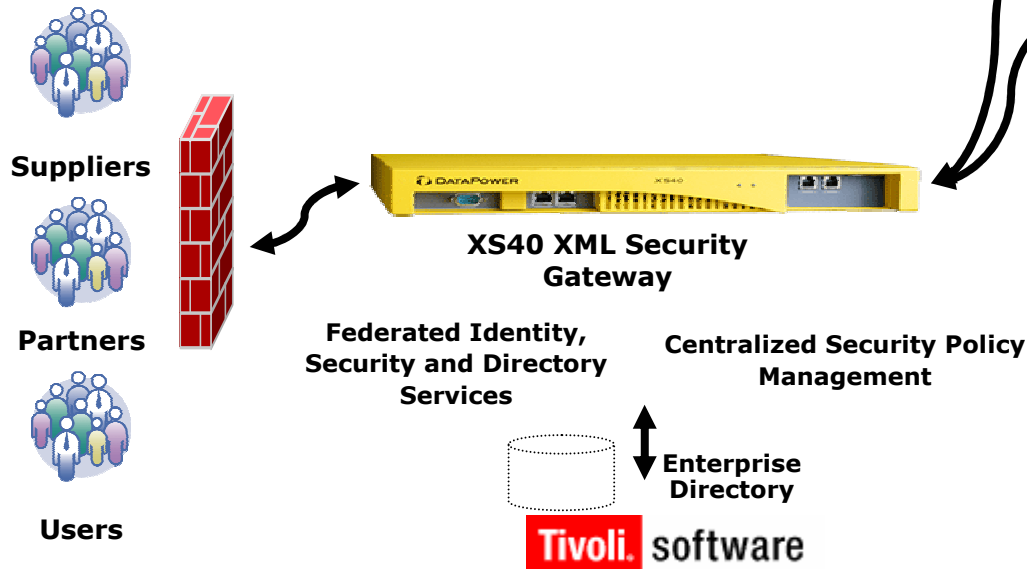
...Generic Service Virtualization...



Connecting your Services

Sophisticated environments have multiple challenges:

- Policy enforcement for services - internal & external
- Sophisticated integration
- Assuring Performance, Integrity & Security



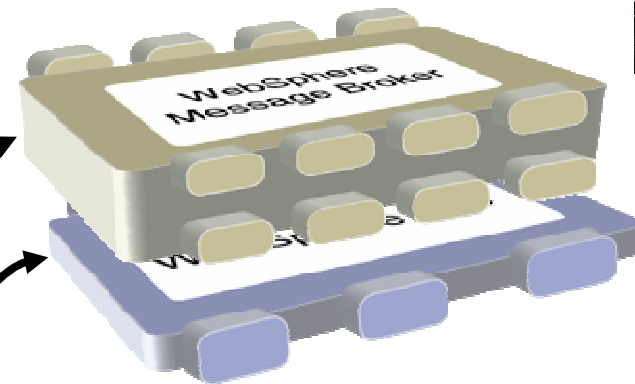
Tivoli software

OMEGAMON for Messaging management

ITCAM management



Data Stores



IBM offers the appropriate solutions:

- **WebSphere DataPower** for policy enforcement and accelerated processing
- **WebSphere Message Broker** for sophisticated, heterogeneous integration problems
- **WebSphere ESB** for departmental, standards based solutions

IBM Delivers a World Class Connectivity Portfolio

WebSphere Message Broker
provides universal connectivity
and data transformation

WebSphere DataPower enhances
security, simplifies and accelerates
processing for the ESB



WebSphere ESB provides
standards based connectivity
and XML transformation



WebSphere DataPower SOA Appliances

An SOA Appliance...



Creating customer value through extreme SOA performance and security

- **Simplifies** SOA with specialized devices
 - Ease of configuration and operation
 - **Accelerates** SOA with faster XML throughput
 - **Helps protect** SOA XML implementations
- Wire speed processing and throughput
 - Accelerated XML and security processing
 - No more hand-optimizing XML
 - Wide ranging security capabilities
 - Web Services Security Enforcement
 - Field-level XML Security
 - XML threat protection
 - Sophisticated access control and authentication
 - Structured data handling

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

WebSphere DataPower SOA Appliances...

XML Accelerator XA35



- XML Parsing
- XML Schema Validation
- XML Transformation
- Schema, Stylesheet caching
- MultiStep processing
- XML Path Language (XPath) Content Based Routing
- Extensible Stylesheet Language Transformation (XSLT)

XML Security Gateway XS40



- XML and SOAP Firewall
- Data Validation
- Field Level XML Security
- WS-Security
- XML Web Services Access Control
- XML threat protection
- Integration with 3rd party security providers
- Web Services Management
- Service Virtualization

Integration Appliance XI50

Wirespeed Appliance Purpose-Built for Application Integration



- DataGlue: Any-to-Any Transformation Engine for structured data
 - Binary or flat text → XML
 - XML → binary or flat text
 - Binary ↔ binary
 - XML ↔ XML
- Protocol Bridging (HTTP, MQ, FTP, ODBC, TICBO EMS, etc)
- Message Enrichment, Message Augmentation

WebSphere ESB

Provides standards oriented connectivity and data handling

HTTP(S), JMS, WebSphere MQ, JCA Adapters.
Emphasis on service oriented integration

Ease of use

Integrated, interactive and visual development experience
requires minimal programming skills
Simple to develop, build, test, deploy and manage
Simplified set of mediation primitives for straightforward
service integration

Improve time to value

Cost effective solution for services integration
Dynamically re-configure to meet changing business needs

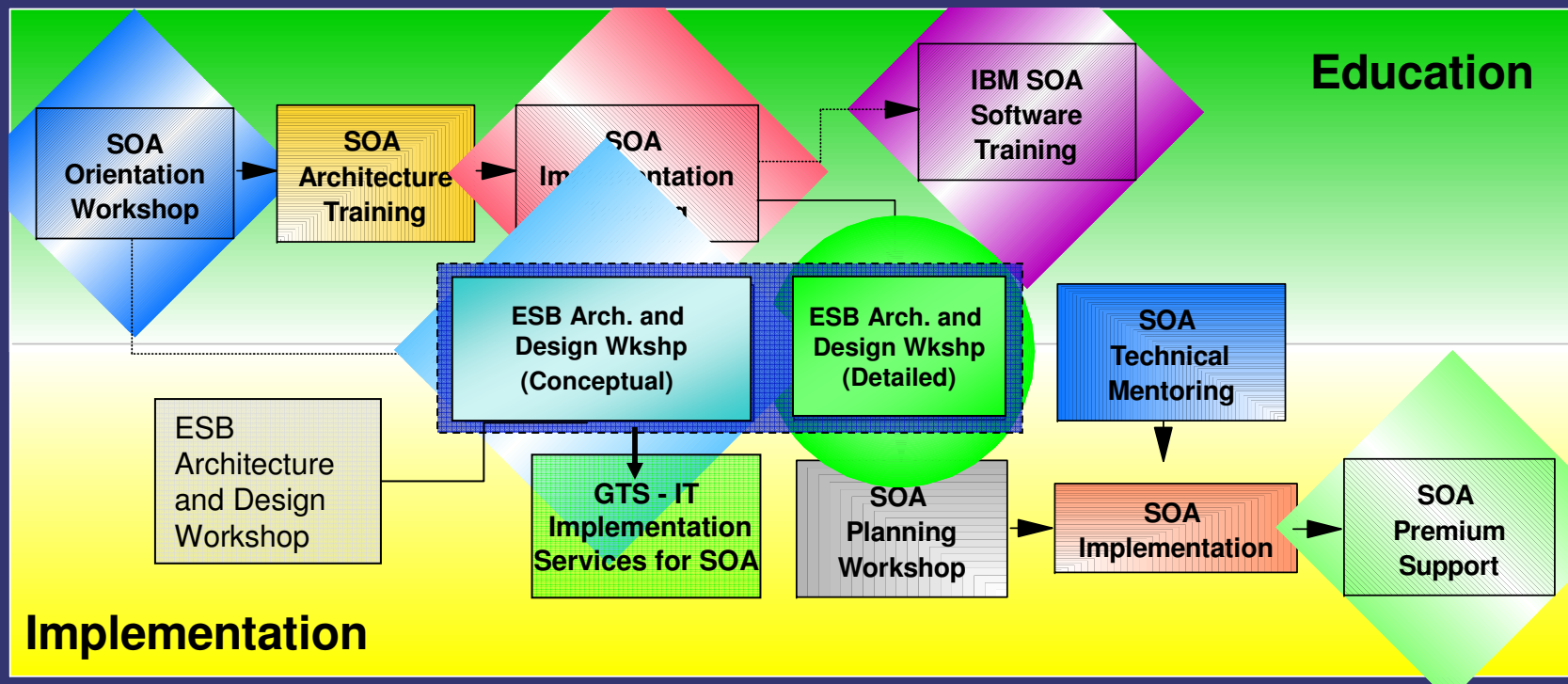
Seamless integration with the WebSphere platform

Based on WebSphere Application Server, SCA component model and
Java environment.
Leverages WebSphere qualities of service: clustering, fail-over,
systems management, security
Easily extends to leverage WebSphere Process Server as needs dictate
Integrates with IBM Tivoli security and systems management offerings



IBM Architecture & Design Services for SOA

ESB Architecture and Design Workshop Offering



Summary: Key Attributes for Mission Critical SOA

- 1** Ensure end-to-end transactional integrity across and beyond your business
- 2** Modernize and reuse existing assets as well as leverage new standards, reducing cost & time-to-market while minimizing risk
- 3** Connecting everything, everywhere with an ESB, significantly reducing complexity and increasing flexibility

Questions and Answers

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Integrating Airport Operations with IBM's SOA Platform

Malaysia Airports Technologies



▶ Business Challenge:

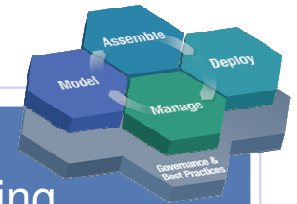
Existing disparate solutions no longer sustainable with growth in passenger numbers, flight frequencies and carrier numbers
Need to flexibly roll out new applications to run alongside existing infrastructure

- ▶ **Solution:** A SOA solution to interconnect all the applications required to support their world-wide airport operations – without compromising security, reliability, or scalability. IBM GBS developed a roadmap for MAT to migrate to this new flexible service oriented approach.
- ▶ **Results:** Real-time information distribution from disparate sources; Replace individual components without compromising airport operation integrity; Unify employees across the entire organization
- ▶ **Implementation Details:** IBM Global Business Services – Application Innovation Services; IBM's Airport Integration Solution, built on IBM WebSphere and the SOA Foundation

"MAT can now distribute real-time information from disparate sources, communicating accurate and timely resource, planning, and operations information to essential departments." — YBhg Dato' Azmi Murad, Senior General Manager

Enhancing Customer Service Operations with a Flexible SOA

Shanxi Mobile Communications Company



Business Challenge:

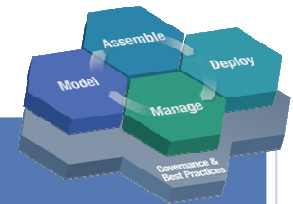
Accelerate resolution of customer problems by integrating independent CRM, business analysis and billing systems
Establish a new application framework that helps to improve business flexibility and employee productivity

- ▶ **Solution:** Construct a highly flexible SOA solution. Implement WebSphere Message Broker for simplified exchange of 5000 messages per day between previously disparate siloed business systems. IBM Tivoli Security Software for secure access to systems
- ▶ **Results:** Cut average problem resolution time from two days to under one hour, boosting customer satisfaction. Simplified customer service operations, boosting productivity. Flexibility for future enhancements
- ▶ **Implementation Details:** WebSphere Business Integration Server Foundation, WebSphere Process Server, WebSphere Studio Application Developer Integration Edition, WebSphere Business Integration Adapter for JDBC, WebSphere Message Broker; WebSphere MQ; Tivoli Access Manager for e-business, Tivoli Identity Manager;

“Establishing an SOA based on IBM WebSphere software has allowed us to serve our customers more efficiently and effectively by enabling total integration between our multiple business systems.”

— Chen Gang, director, Shanxi Mobile Communications Company

Connecting Systems, offering new services HypoVereinsbank AG (HVB)



▶ Business Challenge:

Improve ability to offer new services to customers

Lack of a standard integration solution impacted response time to new market opportunities, customer demand and business strategies



- ▶ **Solution:** Deployed an ESB-based infrastructure using WebSphere and Tivoli Software. Delivers a cost-effective connection environment to simplify the trading process and gain a competitive advantage through time to market
- ▶ **Results:** Achieved 35% reduction in time to implement integration scenarios linking new and existing applications. Rapidly connected to Euronext Stock Exchange. Implementation and operational costs down and ROI up.
- ▶ **Implementation Details:** WebSphere Application Server on z/OS, WebSphere Message Broker for Multiplatforms, WebSphere MQ, WebSphere MQ for z/OS; Tivoli Monitoring for Business Integration, Tivoli Monitoring

“The ESB provides a flexible infrastructure for HVB's agile investment banking. Our business is changing very fast, and the ESB enables us to support upcoming business opportunities immediately by connecting new market places and new dealing systems to our existing system landscape. The ESB accelerates the adaption of new business processes and the launch of new products and services.” Michael Dietze, Head of Business Development