Open Source SOA Strategies and Value

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Value Chain Integration Challenge

SOA Middleware

Business services, processes and rules

Channel Partner

Supplier

Relational Data

SOX Basel II HIPAA

Portal User

Collaboration

Unstructured Data

People

Partners

Information
Silo Purgatory

Client

Web

CRM

Ordering

PHP

MySQL

Accounting

Client

VisualBasic

VisualBasic

Stored Proc

SQL Server

Warehouse

5250

RPG

DB/2 400

Manufacturing

Client

Struts

DAO

Oracle

FTP

FTP

FTP

FTP

FTP

FTP

DUMP

SOAP

ASCII

FTP

ASCII

FTP

ASCII

ASCII

JAVA

Struts

DAO

Oracle

FTP

FTP

FTP

FTP

DUMP

SOAP

ASCII
Intermediate those Silos

- Browser
- Rich
- B2B
- Legacy

Mediation
- Service 1
- Service 2
- Service 3

App
- DAO/JPA/SLSB/Spring Bean
- Hibernate

Mediation
- Service 4
- Service 5
- Service 6

DB
- Query/Stored Procedure
SOA via ESB – The Anti-Silo

CRM

Warehouse

Supply Chain Partner

Acquired Manufacturing

Accounting

Manufacturing
Why SOA?

Because a single business change can spur 10x – 50x IT changes

Benefits of SOA include:

• Easier integration
• Faster time to market with new applications
• Reduced development costs
• Rapid component reuse

Key Driver:

Business Process Automation
Stages of SOA Evolution - 2008

1. Business Process Understanding: How is the work done?
2. IT Assessment: What IT assets exist supporting the business process?
3. SOA Design/Determination: What should be a service?
4. SOA Enablement (Java EE, .NET, federated data services): How will application and data services be developed and deployed?
5. Infrastructure (ESB, Registry, Management)
6. Governance: How will services, application, people interact and communicate?
7. Process Orchestration/Composition: How will business processes and rules be developed and deployed?
Passenger railway company for Nordic countries
   100K passengers/day; 350 destinations; $1 billion revenue
WebSphere customer – performance problems
   Went with JBoss AS – 700% performance gain
Now: Integrate ticket sales with eBay auctions+other
Solution: Ticket not sold; Xfer to ESB into eBay
   Auction closes 6 hours before departure
Benefit: Improved train utilization and sales
Flexibility & Growth: Adding millions of SMS messages into ESB deployment
JBoss Enterprise SOA Platform
Early Adopter – North State Communications

• North State is a more than 100 year old regional telecom
  • Competition: Mule, ServiceMix, JMS Messaging
• Problem: Billing system transformation
  • Accommodate growing demand for next gen services
  • Implementing telecom services - manage nuances of configuring and tracking different equipment at a neighborhood level
• Projects: Automated Design and Assign and Flow Through Provisioning
• Solution: JBoss SOA Platform (ESB, jBPM)
  • Integrate applications and drive the workflows
• Benefits: Improved business execution, higher customer satisfaction, greater revenue and profit
2008 OSS Market Directions

- Open Source Dominates Lower Stack, Dev Tools, Messaging
- Powering Significant Enterprise Use Cases in Integration, Database

Commercial Vendor Alert Levels for 2008:
- L Low
- G Guarded
- E Elevated
- H High
- S Severe
Stages of SOA Evolution - 2010

1. Business Process Understanding: How is the work done?
2. IT Assessment: What IT assets exist supporting the business process?
3. SOA Design/Determination: What should be a service?
4. Infrastructure (ESB, Registry, Management Governance): How will services, application, people interact and communicate?
5. SOA Enablement (Java EE, .NET, federated data services): How will application and data services be developed and deployed?
6. Process Orchestration/Composition: How will business processes and rules be developed and deployed? Expands to Biz Event/CEP.
2010 SOA Customer

- Status: Customer has a well rounded portfolio of SOA services
  - Listed in registry and repository
  - Some of these are orchestrated into business processes

- Requirement: Wants to automate more of the advanced business processes where complex events occur with a mix of human interaction and system integration

- Requirement 2: New SOA infrastructure including processes, needs to be “governable”

- Solution: Have business processes well understood/doc'd
  - Use an advanced BPM suite with CEP, ESB built-in and integrated with registry/repository
  - Ensure SOA governance platform supports not just web services, but BPEL, SCA, other business process standards

- Benefits: Ability to leverage more complex data and business events into higher revenue, customer satisfaction and reduced costs
2010 SOA Customer 2

- Status: Two enterprises merging – both have SOAs
- Requirement: Wants rapidly integrate processes and reduce overlap; Wants to present single face to the customer
- Solution: Have business processes well understood/doc'd with a strategy to federate supporting IT
  - Use an advanced BPM suite that can support multiple standards with federated ESB built-in and integrated with registry/repository which also can be federated
  - Present data to SOA integration and Portal presentation deployments using a federate data services platform
- Benefit: Ability to present a more unified face to the customer more rapidly
- Benefit: OSS SOA offers subscription model which gives greater flexibility to IT for unpredictable and rapidly changing deployments; OSS delivers higher IT and end user customer satisfaction
2010 OSS Market Directions

• Open Source Dominates Lower Stack, Dev Tools, Messaging

• Significant to Widespread Enterprise Competition in Portal, BPM, Integration, Systems Management, Database

Commercial Vendor Alert Levels for 2010:
- Low (L)
- Guarded (G)
- Elevated (E)
- High (H)
- Severe (S)
SOA Redefined

Red Hat is the Simple, Open and Affordable way to automate your business and value chain.

Simple:

• Easy-to-consume SOA portfolio
• Industry-leading Support
• Enterprise-class Stability & Performance

Open:

• Unparalleled Flexibility & Control of Open Source
• Open standards-based

Affordable:

• Significantly Lower Total Cost of Ownership
• Re-focus resources on the things that differentiate your business
JBoss Enterprise Middleware

**Design & Develop**
- **JBoss Developer Studio**
  - Eclipse IDE
  - Integrated Tooling
  - Runtime Platform
    - Fully Integrated Developer Environment

**Integrated Runtime Platforms**
- **Portal Platform**
  - JBoss Portal
  - Application Platform
    - Content Aggregation, Presentation and Personalization

- **Application Platform**
  - JBoss
  - Seam
  - Hibernate
  - JBoss Application Server
    - Embedded Tomcat, Clustering, Cache, Messaging, Transactions
    - Application Presentation, Services Hosting, and Data Persistence

- **MetaMatrix Data Services Platform**
  - MetaMatrix Enterprise Server
    - Data Integration, Data Service Federation, Data Abstraction & Management

**SOA Platform**
- JBoss
- jBPM
- JBoss Rules
- JBoss ESB
  - Transformation, Routing, Registry, Repository

**Manage**
- **Operations Network**
  - Fully Integrated Developer Environment

**MetaMatrix Designer**
Enables Business Process Automation by integrating and orchestrating application components and services running on JBoss Enterprise Middleware and/or any other standards-based AS

- Single distribution that integrates JBoss ESB, jBPM, Rules, Application Platform
- Combines SOA integration, BPM, EAI, and EDA technologies to automate business processes to improve business productivity

Certified Platform for Service Integration & Orchestration

Simple, Flexible, & Scalable
- Light footprint, simple installation
- Scalable clustering to support high transaction volumes
- Customizable footprint via microkernel architecture

JBoss Enterprise SOA Platform

- JBoss jBPM
- JBoss Rules

JBoss ESB
Transformation, Routing, Registry

JBoss Enterprise Application Platform

Red Hat Enterprise Linux
Windows, Unix, Other Linux

A flexible, standards-based platform to integrate applications, SOA services, business events and automate business processes
JBoss Enterprise SOA Platform

Light weight 2\textsuperscript{nd} Gen ESB to Enterprise Integration and BPM

- Light weight footprint
- SOA, EDA, EAI, BPM, CEP (future)
- Wide range of deployment scenarios – up to large scale integration platform
An ESB Service is visible in the UDDI registry automatically. A single ESB Service may or may not expose a WSDL. It may use out-of-the-box actions, custom actions and/or consume external services from various sources. Focus on the reuse of existing infrastructure and assets.
EDA in a Nutshell

Related:
- WS-BaseNotification
- WS-BrokeredNotification
- WS-Topics
- WS-Eventing
- WS-Notification
- JSpace
- WSDL 2.0 MEPs

Standards:
- Modelling standards for EDA (and SOA)
  - multiple locations, caching, etc
  - data management

Limitations:
- When to use EDA or SOA
- Event-stream Processing
- Event manager (better)
- EDA vs. SOA implementation
  - global data space
  - BAM / dashboard alerting

Implementation/ESB:
- Definition of
  - EDA characteristics
  - EDA vs. SOA

Motivation:
- Characteristics of traditional SOA:
  - agility, change agnostic
  - real-time
  - handle information overload
  - modeling

Terms:
- Introduction
  - extremely loose coupling
  - Async broadcast communication
  - real-time integration
  - fine-grained events
  - CEP
  - ontology
  - complementary
  - Gartner on ...

References:
- EDA Pattern
- Solution
- Application
- Consequences
- Case Study

Problem

The Fourth Annual
Red Hat Summit
JBoss Enterprise SOA Platform
SOA Partners & Other Supported Subsystems

- **Vitria Business and Resolution Accel.**
- **Active Endpoints**
  - SeeWhy
  - jBPM
  - CBR
  - Transformation
- **SOA Run Time Services**
  - JEE, Clustering, DB Access, Security
- **Event Mgmt & Service Orchestration**
- **Messaging & Listeners**
- **Other Messaging Products**
- **Adapters - iWay**
- **SOA Software**
  - Amberpoint
  - Rules
  - Registry

Other Messaging Products
Questions?