Best Practices for Adopting SOA

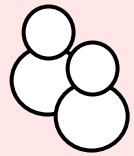
Oracle Architect Forums, April 2006

Mike Lehmann, Director of Product Management
Oracle Application Server SOA Runtime
mike.lehmann@oracle.com

Customer Needs

Increasingly Demanding Users

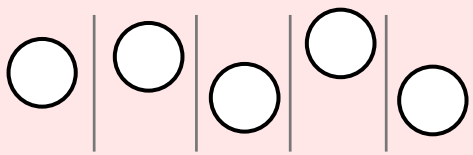
End-to-End Processes
Shorter Change Cycles
Better Insight and Auditing



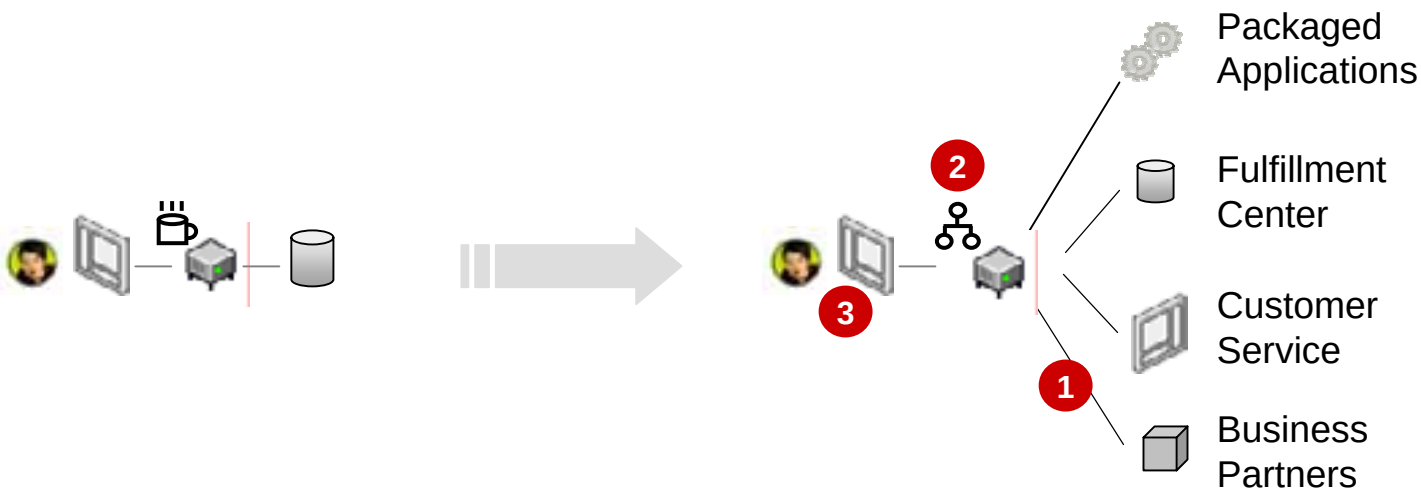
IT

Increasingly Complex Infrastructure

Heterogeneous Systems
Silos



The Application Model is Evolving…

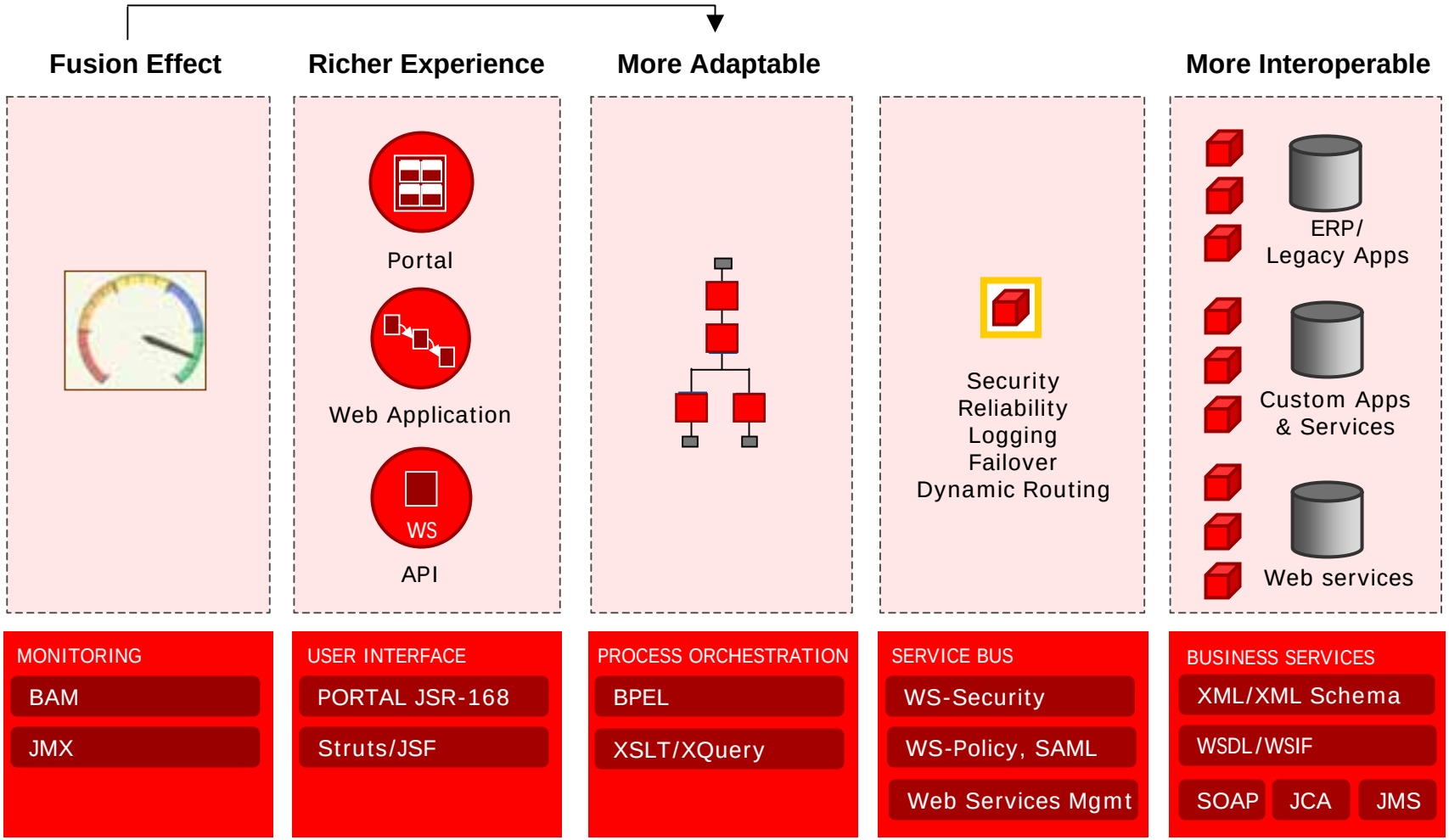


Web Solution

SOA Solution

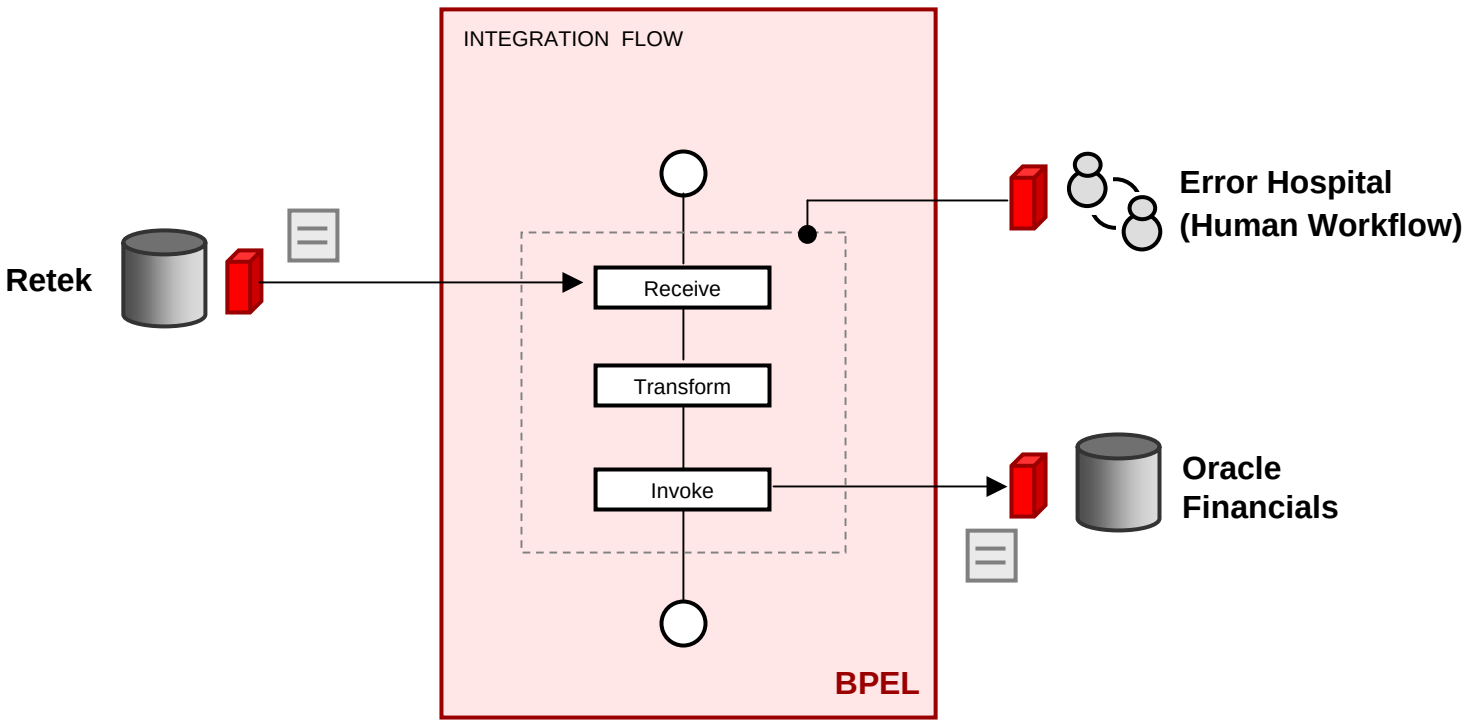
1. **More Interoperable**
2. **More Modular Business Processes**
3. **Richer Clients**

Key SOA Concepts



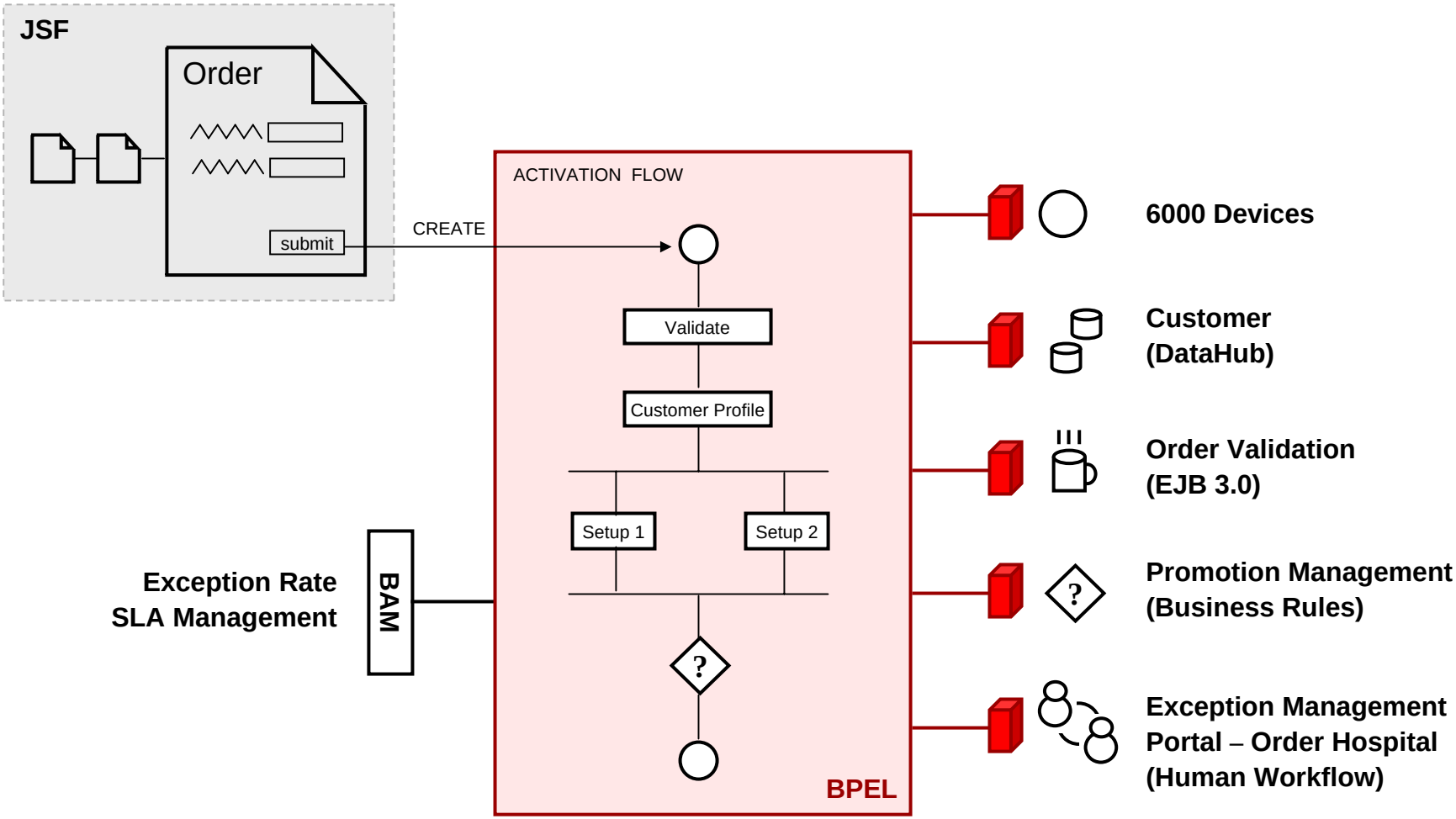
Example of SOA Solution (I)

Retek Sales Module – Oracle Financial Ledger Integration

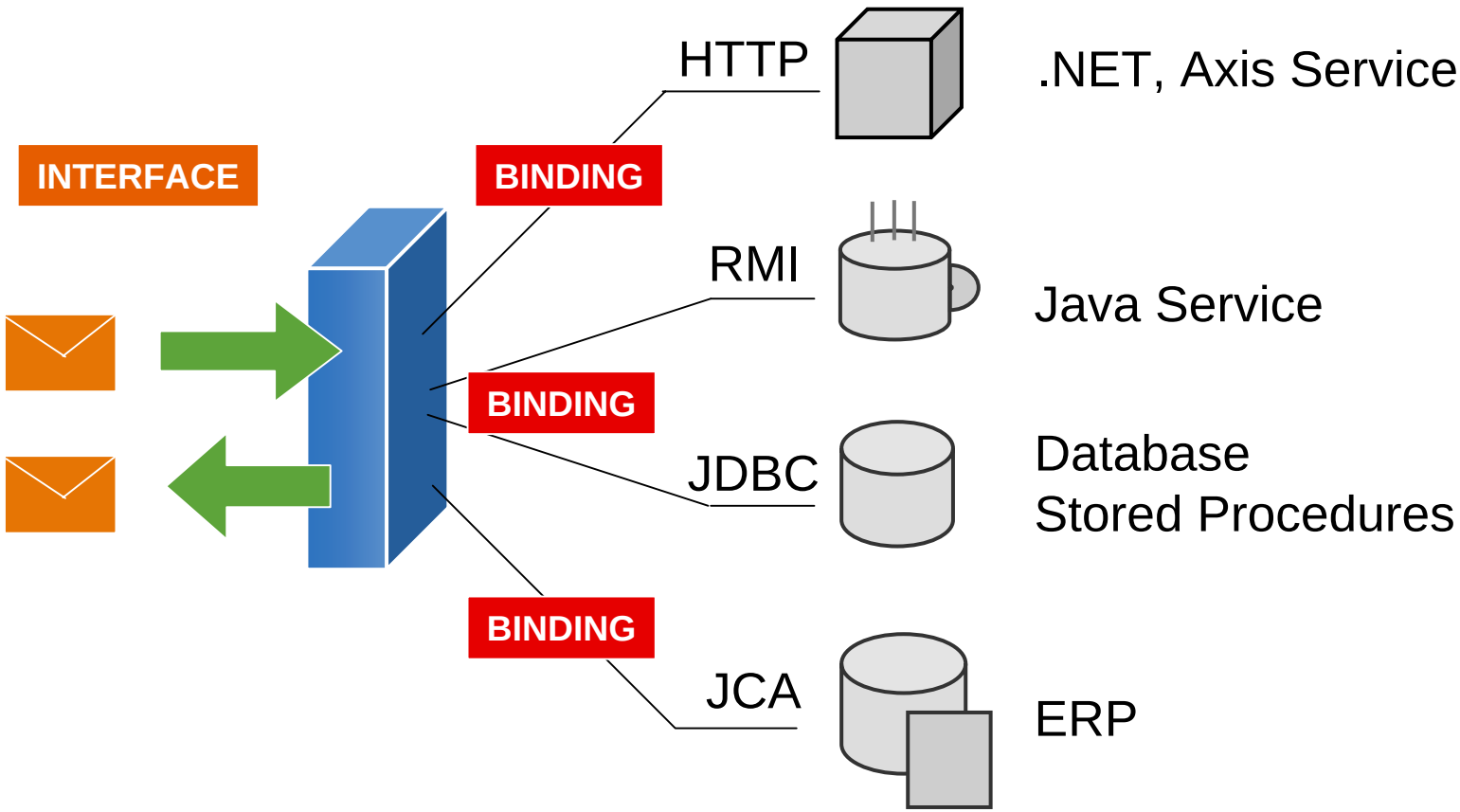


Example of SOA Solution (II)

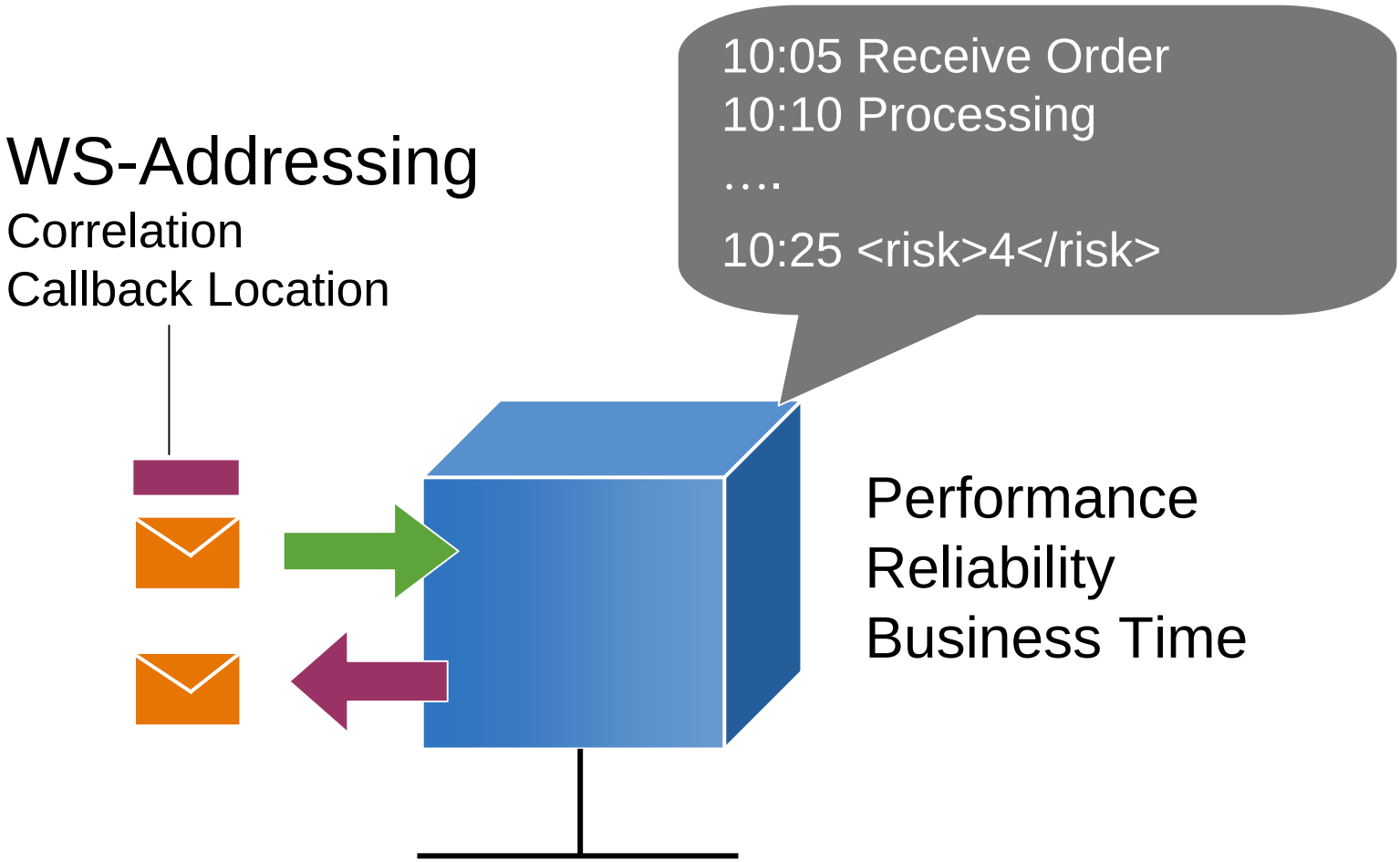
DSL Activation Processing



Key Standards: WSDL and Non-SOAP Bindings



Key Standards: WS-Addressing and Asynchrony



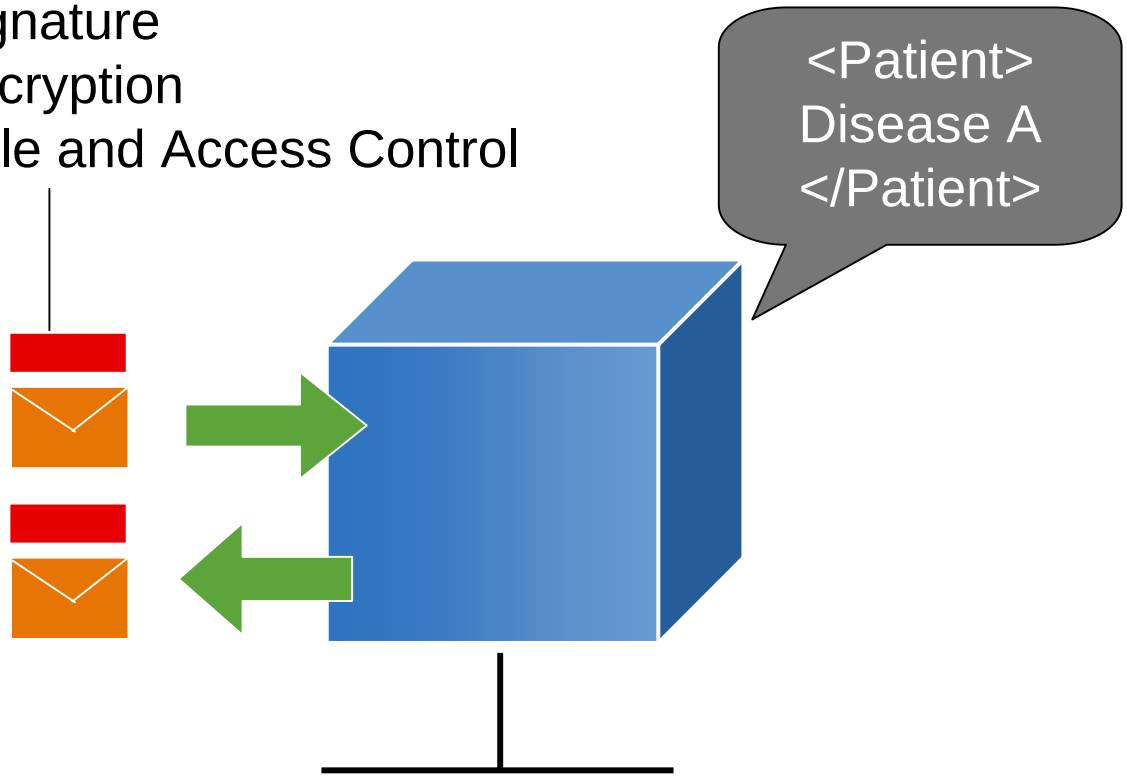
Key Standards: WS-Security

WS-Security, SAML

Signature

Encryption

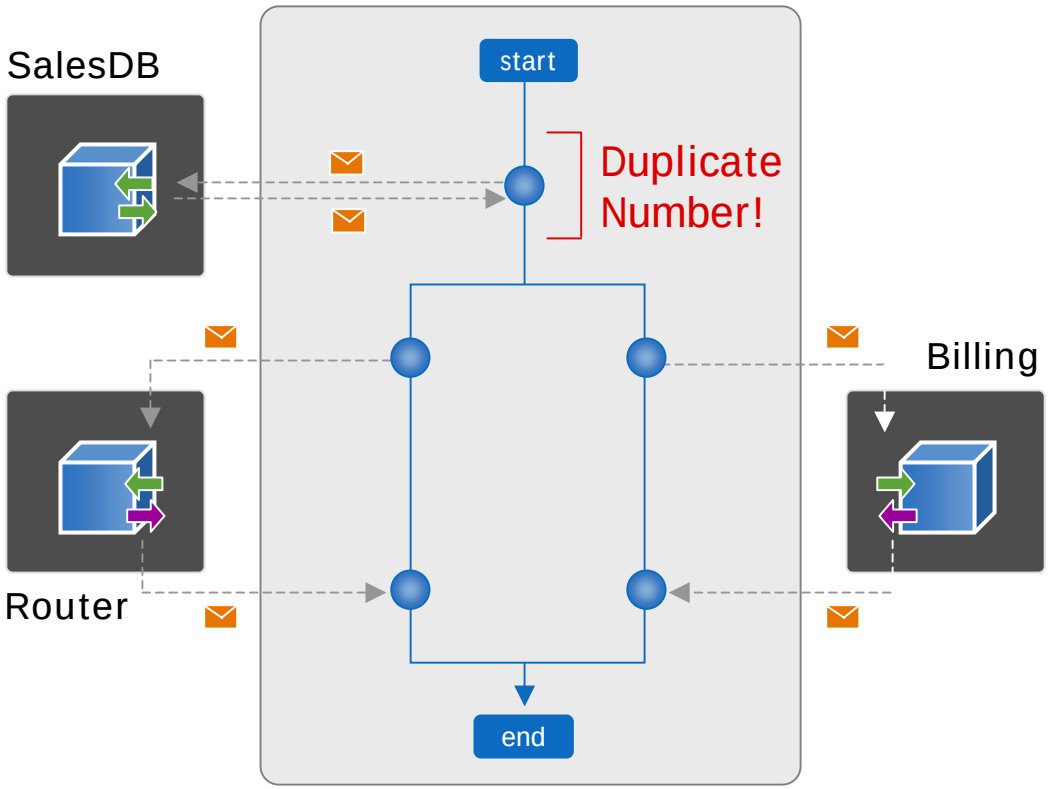
Role and Access Control



Key Standards: BPEL and Process Orchestration

Markup language for composing a set of discrete services into an end-to-end process flow

- 10+ years of R&D from MSFT and IBM
- Rich Flow Semantics
- Optimized Bindings
- XPATH+XSLT+XQuery
- WS-Security
- A Process is a Service

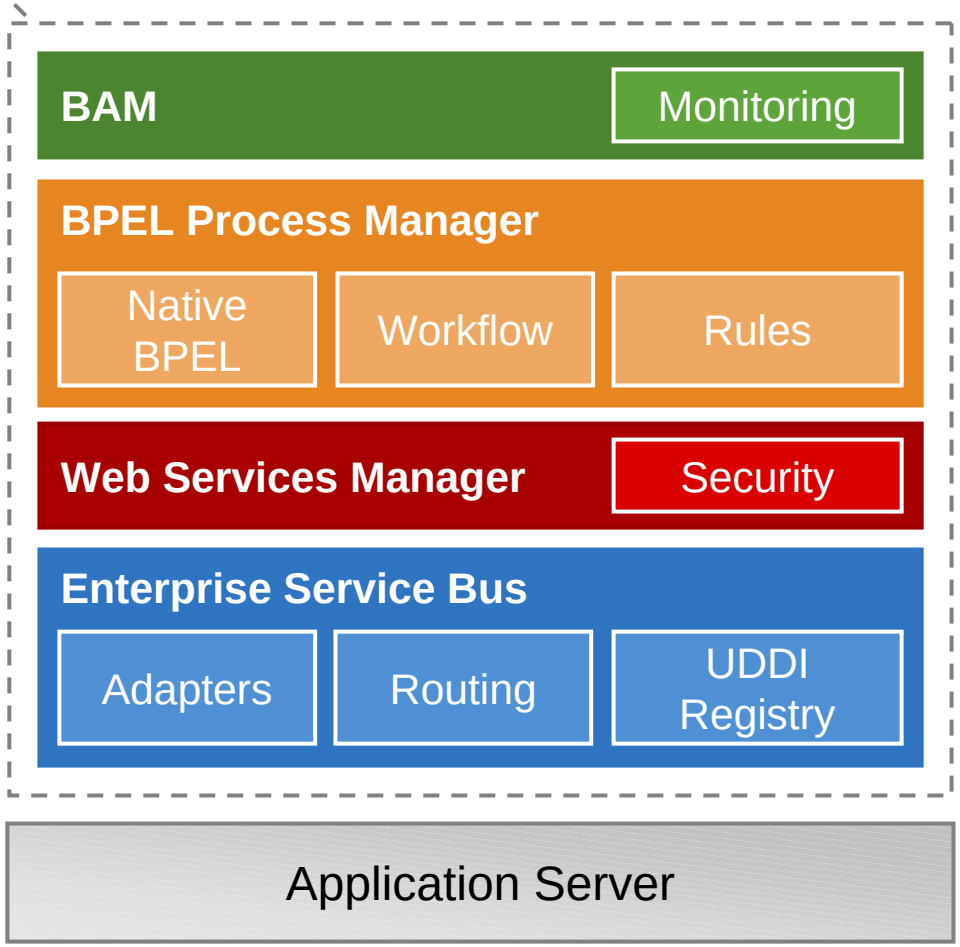


Key Standards: JSF and WSRP/JSR 168

Programming model for composing a composite applications into Portals and rich client desktops

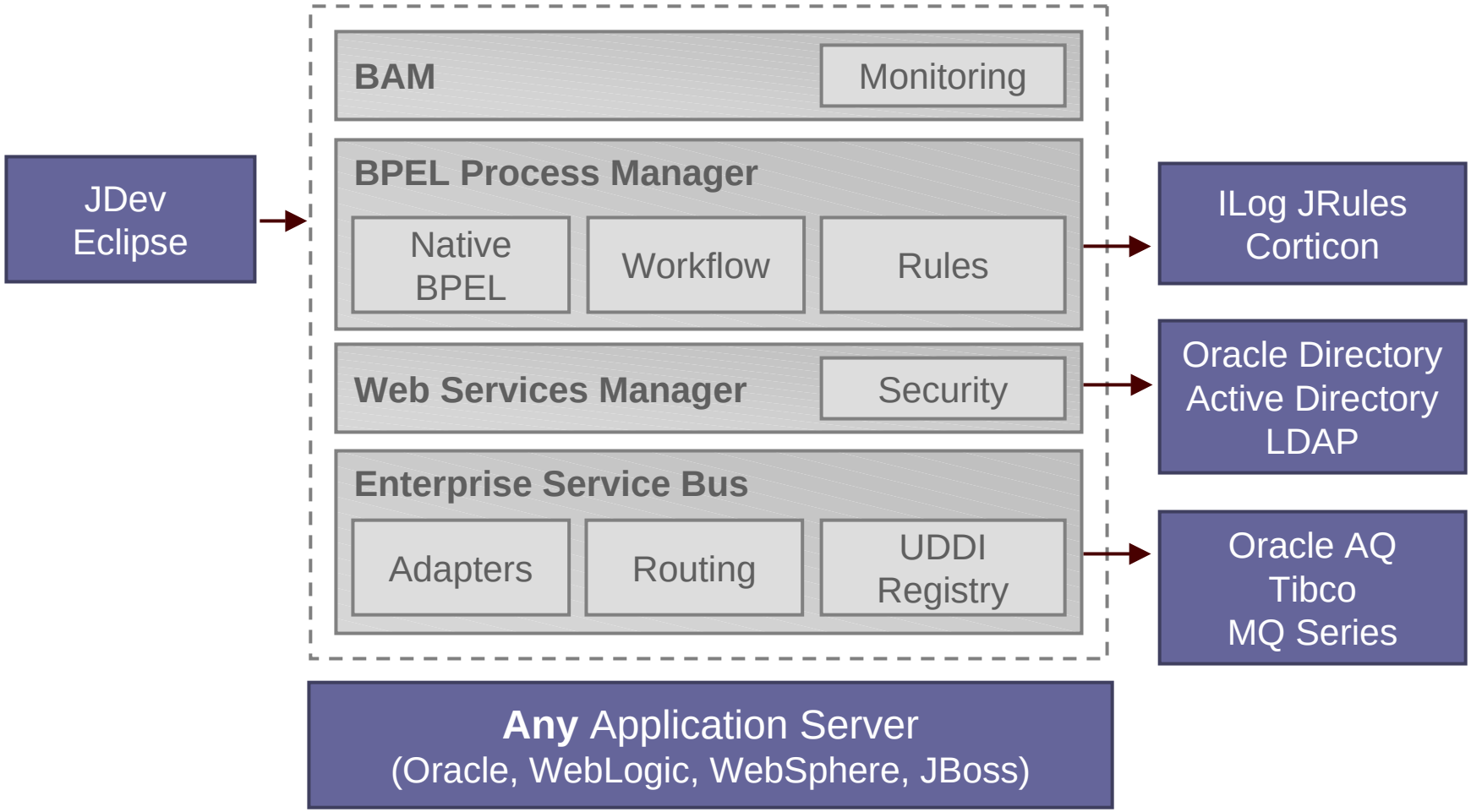
- JavaServer Faces
  - Simplified rich client interface development
  - Emergence of AJAX
- JSR 168
  - Standard model for constructing portlets
- WSRP
  - Standard presentation communication layer for composing interactive clients

SOA Infrastructure Stack



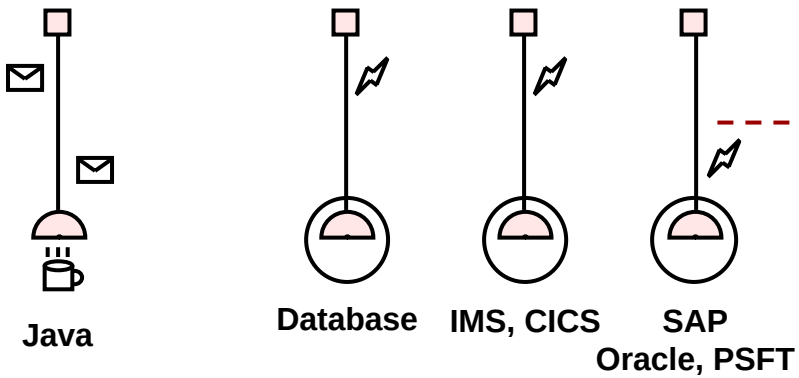
DEMO

“Hot-Pluggable”



Best Practices for Defining an SOA Strategy

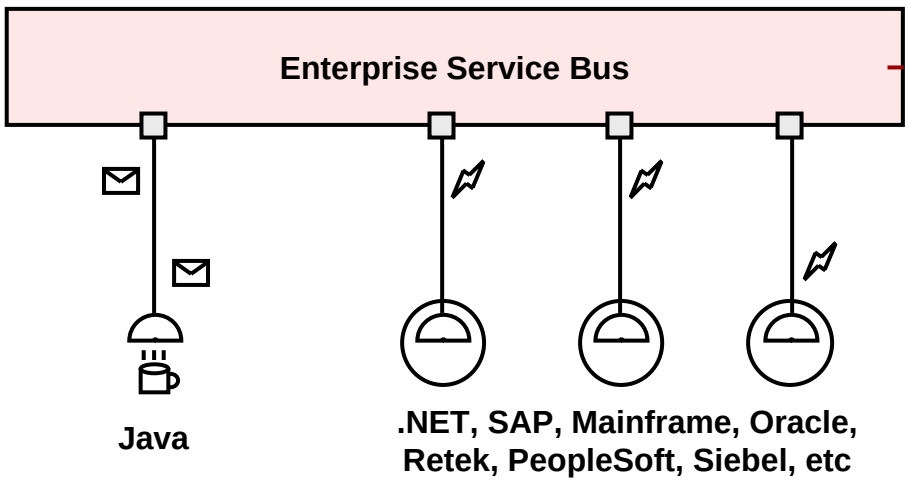
Step 1 | Portfolio of Services



BEST PRACTICES

- Contract/Interface First
- Coarse Grain Documents
- Asynchronous Interactions
- Undo/Cancel Operations
- Versioning
- WS-I, Wrapped Document Style
- WSIF Binding to Java, JCA

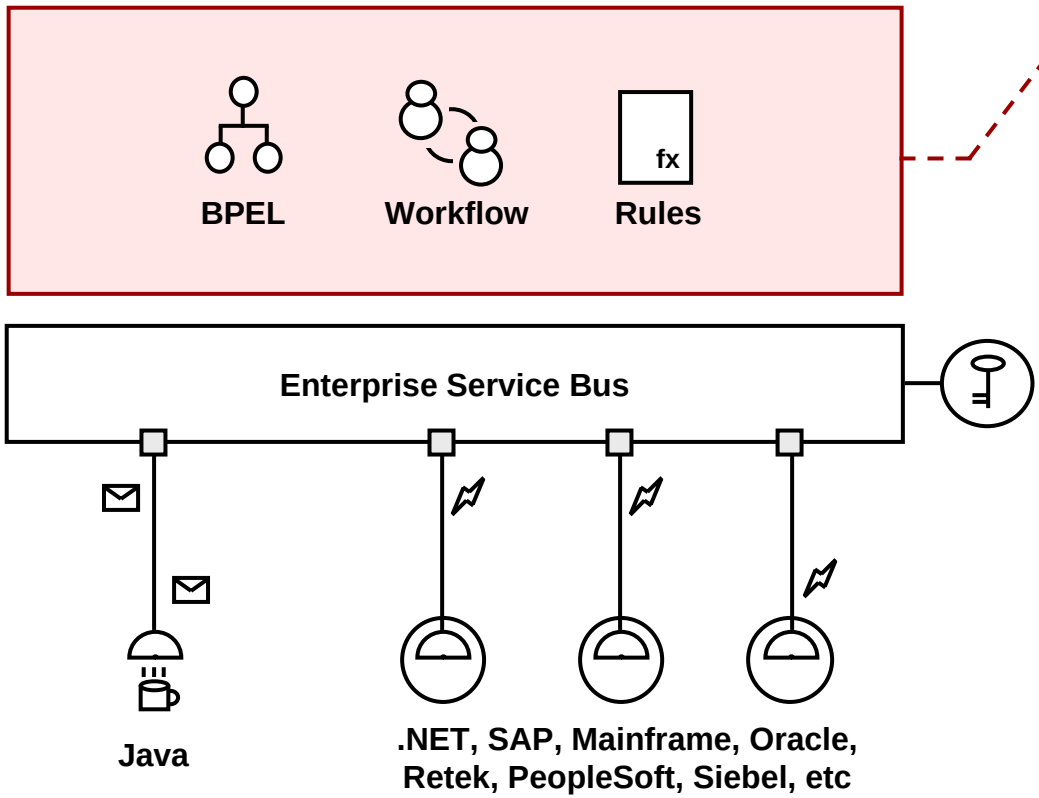
Step 2 | Enterprise Service Bus



BEST PRACTICES

- Service Virtualization Logical Naming
- Differed, Reliable Delivery (Configurable)
- Service Registry
- JCA Adapters
- Integration with Policy Management Framework

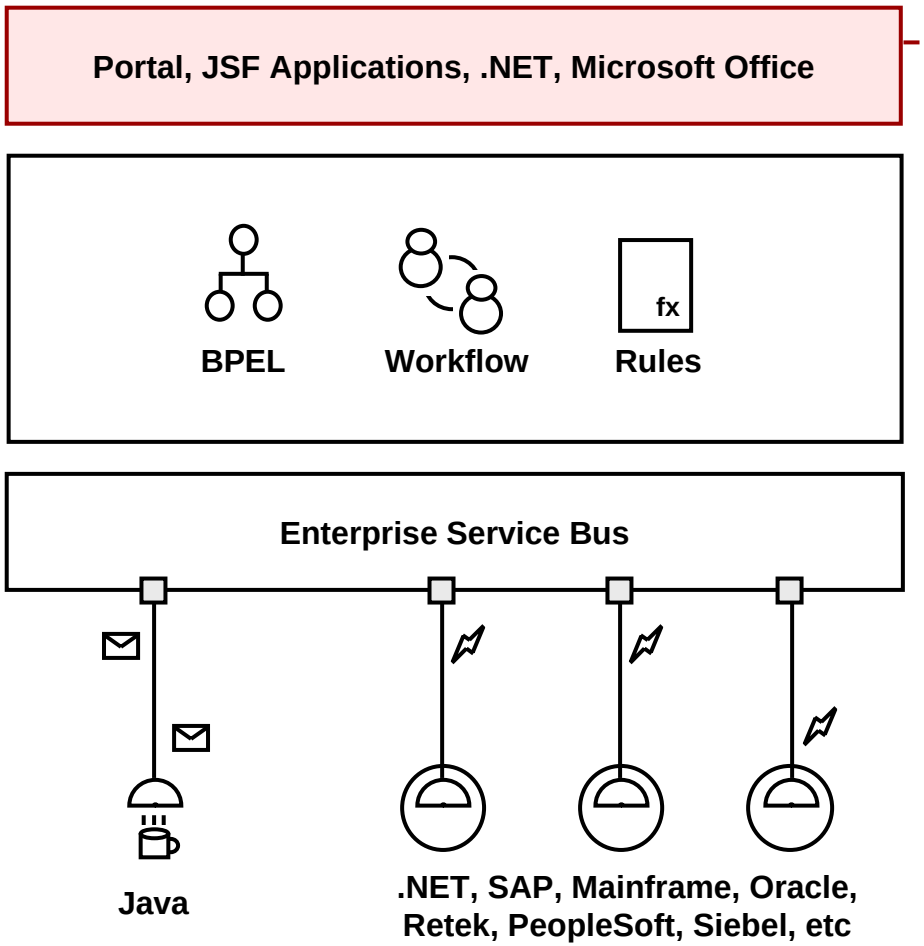
Step 3 | Process Orchestration, Workflow and Rules



BEST PRACTICES

- BPEL
- XSLT Transformation
- Human Workflow Service
- Rules Service
- Notification Service
- Error Hospital Service
- ESB Binding and Wiring
- Tracing and Debugging
- Iterative Development
- Unit Testing

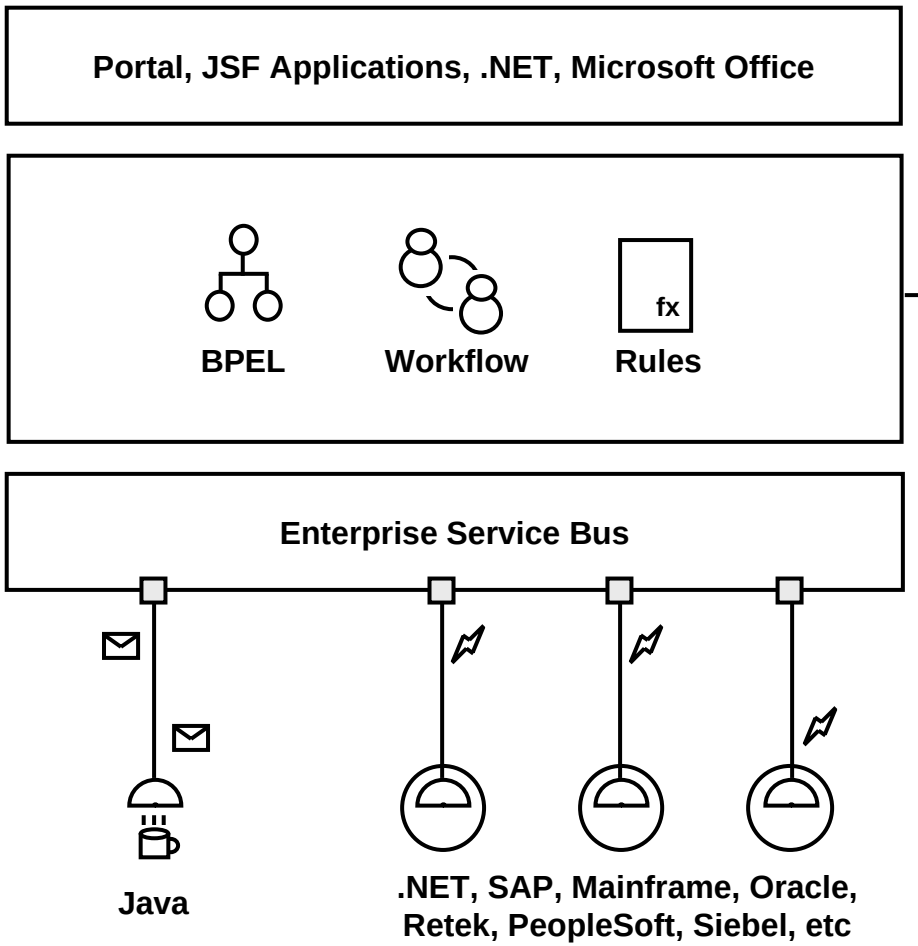
Step 4 | User Interface



BEST PRACTICES

- MVC – BPEL is a Model (Loose Coupling)
- Workflow Service is a Model
- JSF or Struts
- WSRP, JSR-168

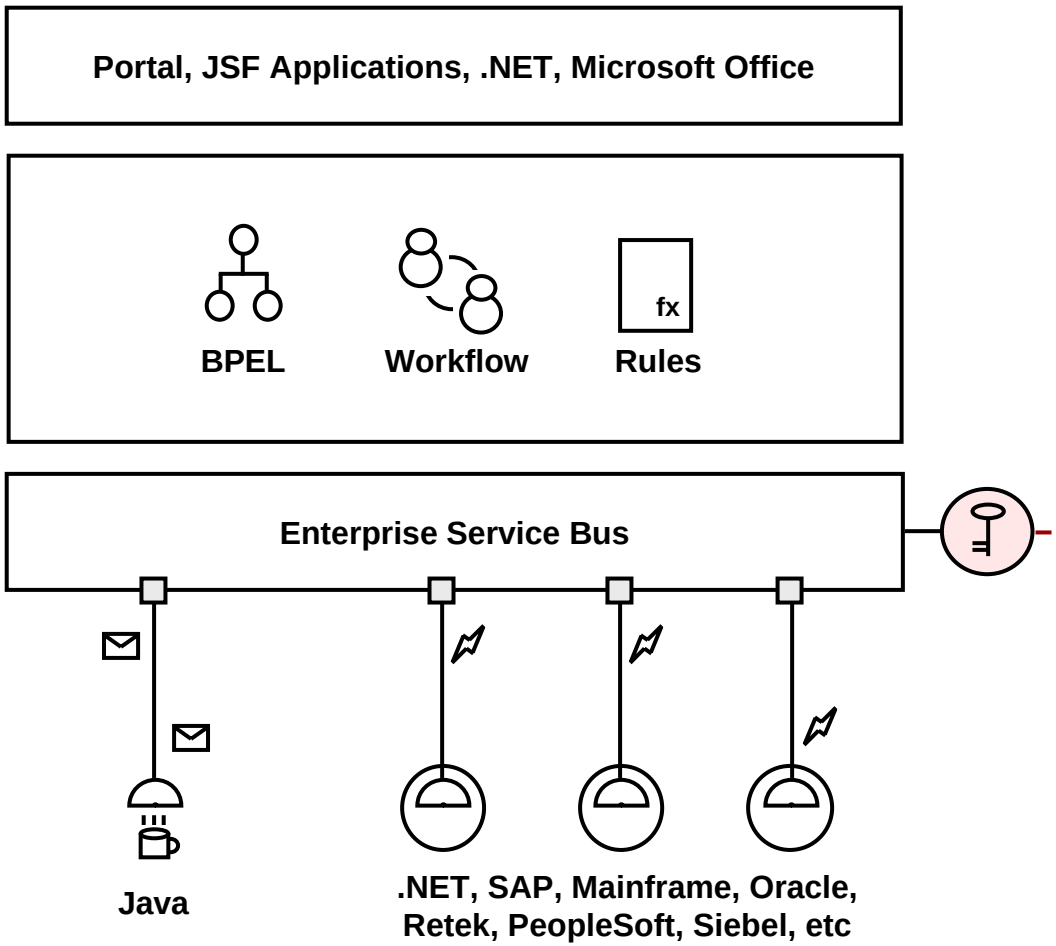
Step 5 | Business Activity Monitoring



BEST PRACTICES

- PKI First
- Sensors to Collect Events without Process Logic Changes
- Real-time Dashboard
- Alert/Actions (Fusion Effect)

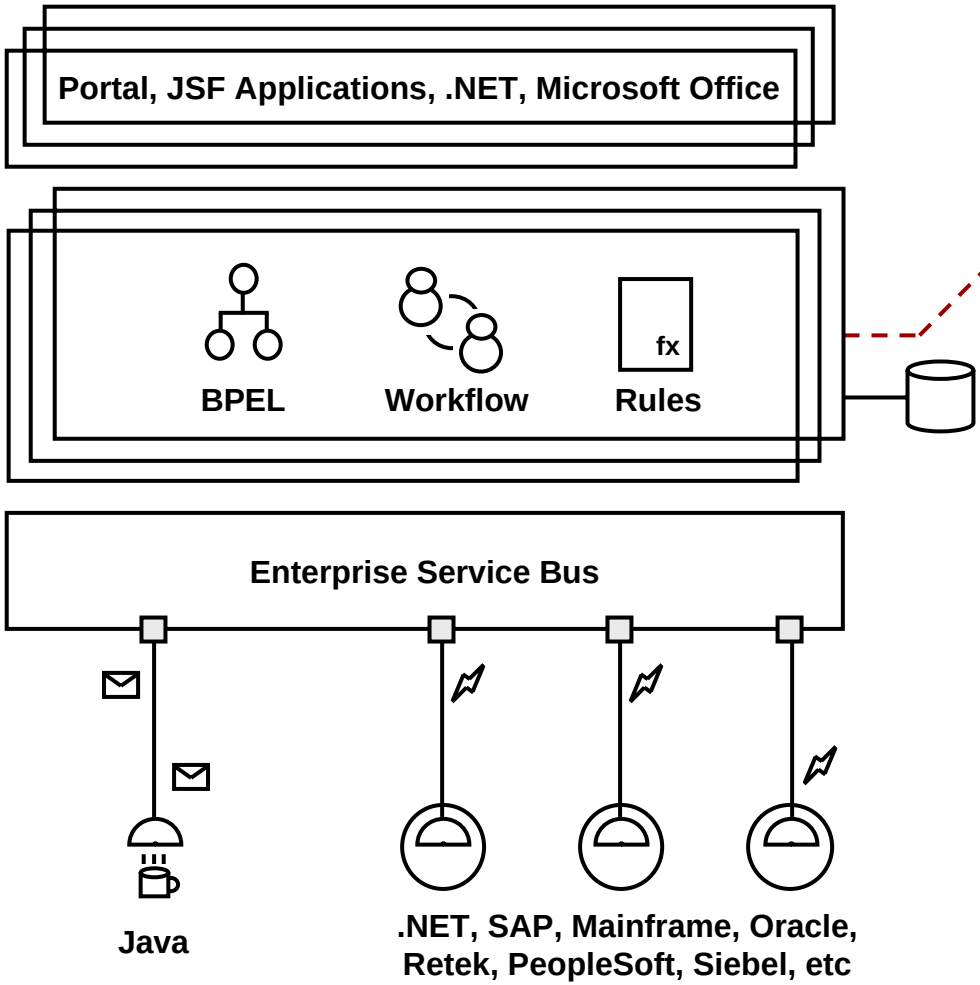
Step 6 | Security Policy Management



BEST PRACTICES

- WS-Policy, WS-Security
- Change Policy without Changing Endpoint
- Integrated with ESB (Multi-binding Support)
- Agent and Gateway Mode
- Support for Java and .NET

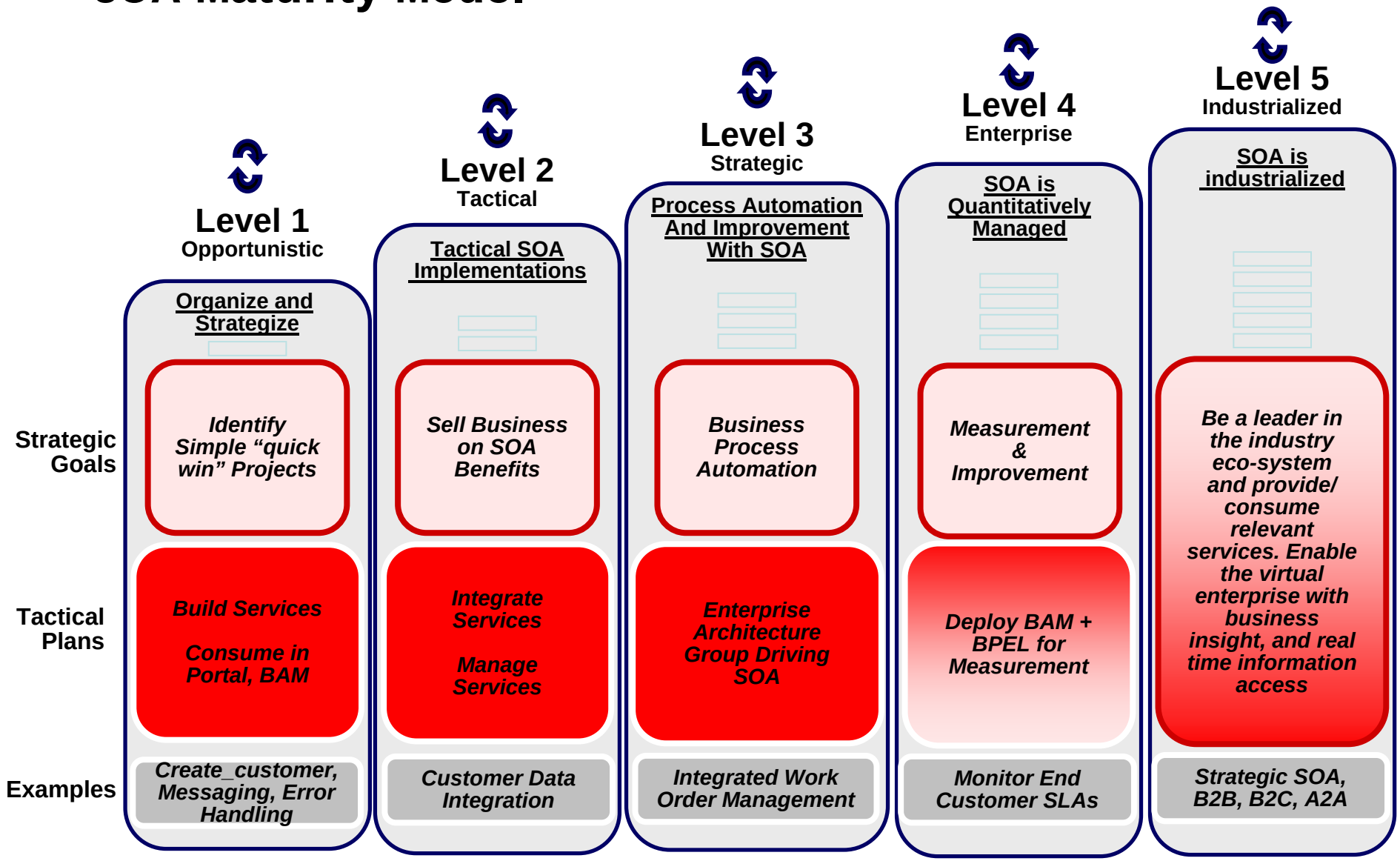
Step 7 | Performance, Scalability and Reliability



BEST PRACTICES

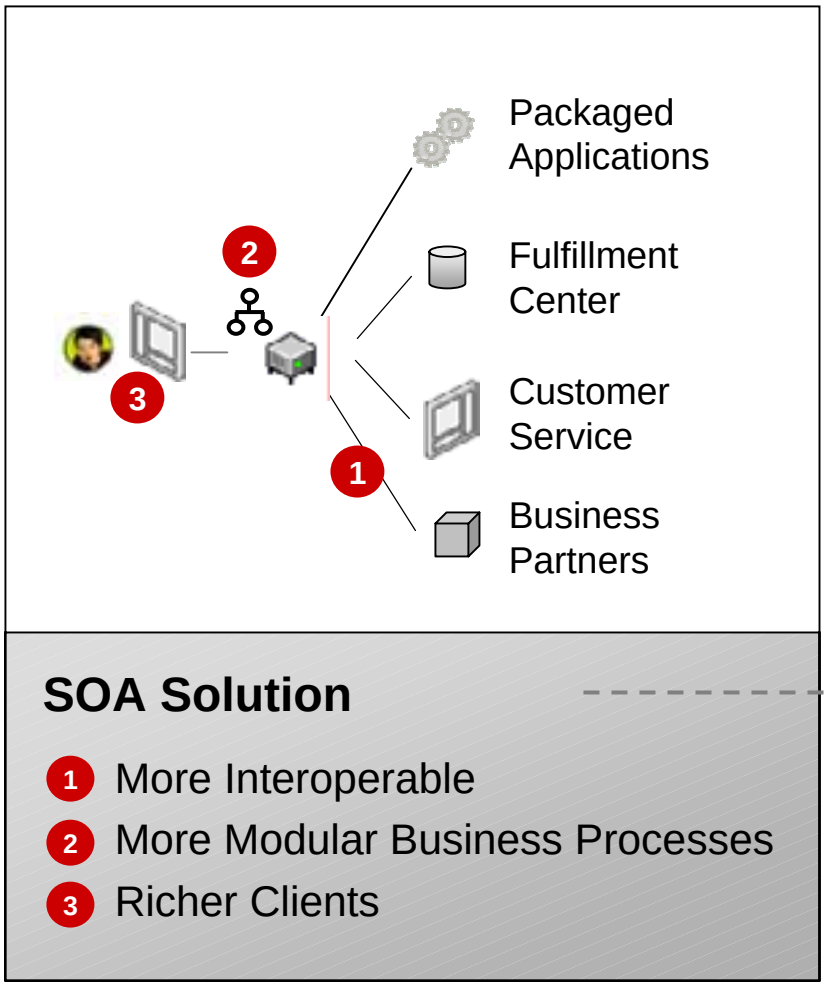
- Asynchronous Interactions
- WS-Addressing Correlation
- Support for Large XML Documents
- “Stateless Architecture”
- JCA and Java Binding
- Batch API

SOA Maturity Model



*Source: Accenture + Oracle

Summary



Best Practices/Strategy

1. Portfolio of Services
2. Enterprise Service Bus
3. Process Orchestration
4. User Interface
5. Activity Monitoring
6. Policy Management
7. Performance

Best Practices for Adopting SOA

Oracle Architect Forums, April 2006

Mike Lehmann, Director of Product Management
Oracle Application Server SOA Runtime
mike.lehmann@oracle.com

SOA: Top Down versus Bottom Up?