

SOA Architect Days

Best Practices for Adopting SOA

Oracle Architect Forums, March 16th 2005

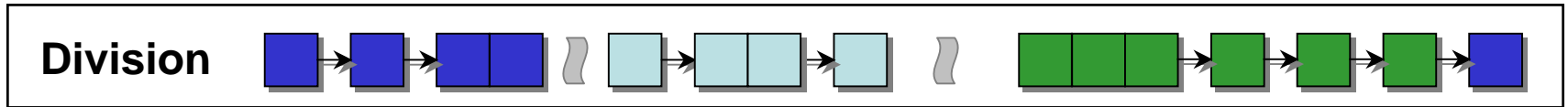
Christophe Job, VP Application Development Tools

christophe.job@oracle.com

SOA

Defined

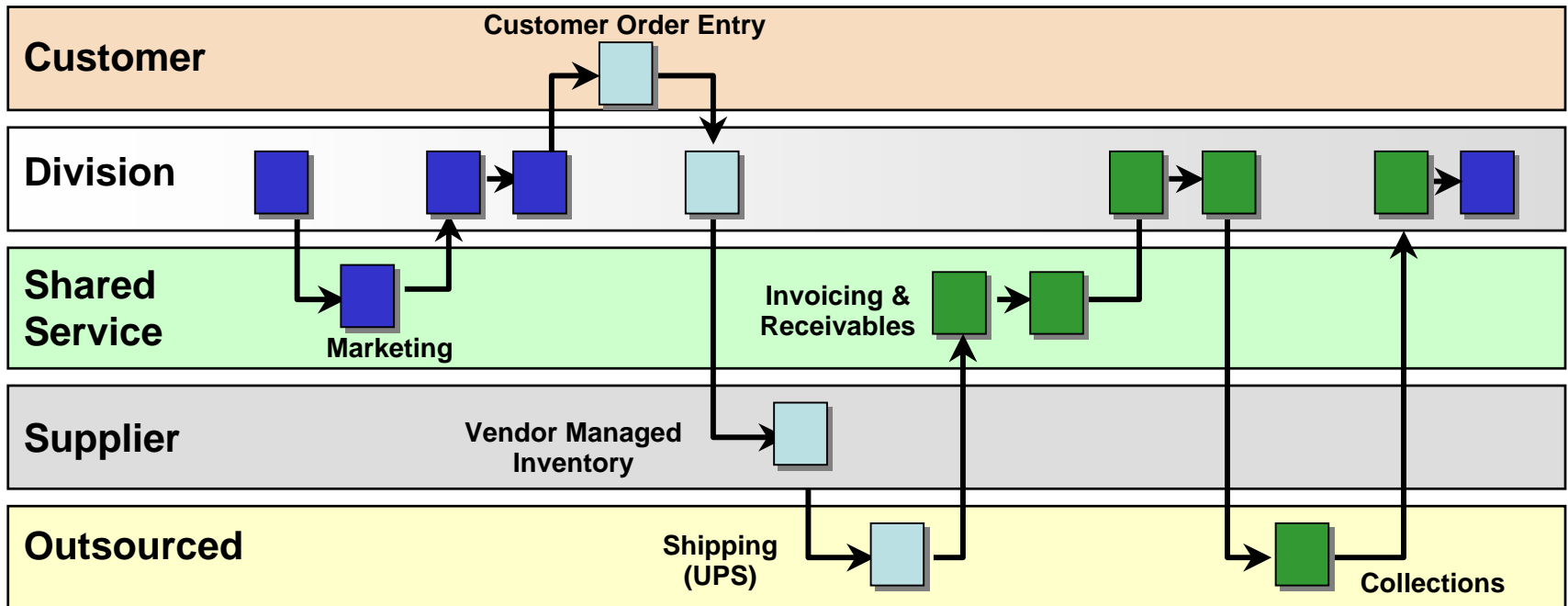
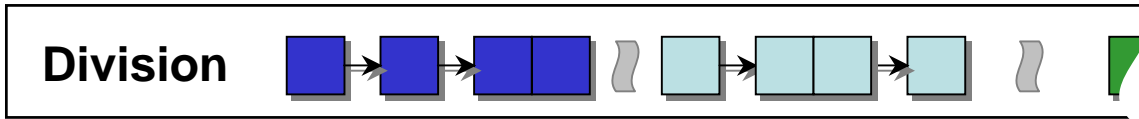
Business Processes "As Is"



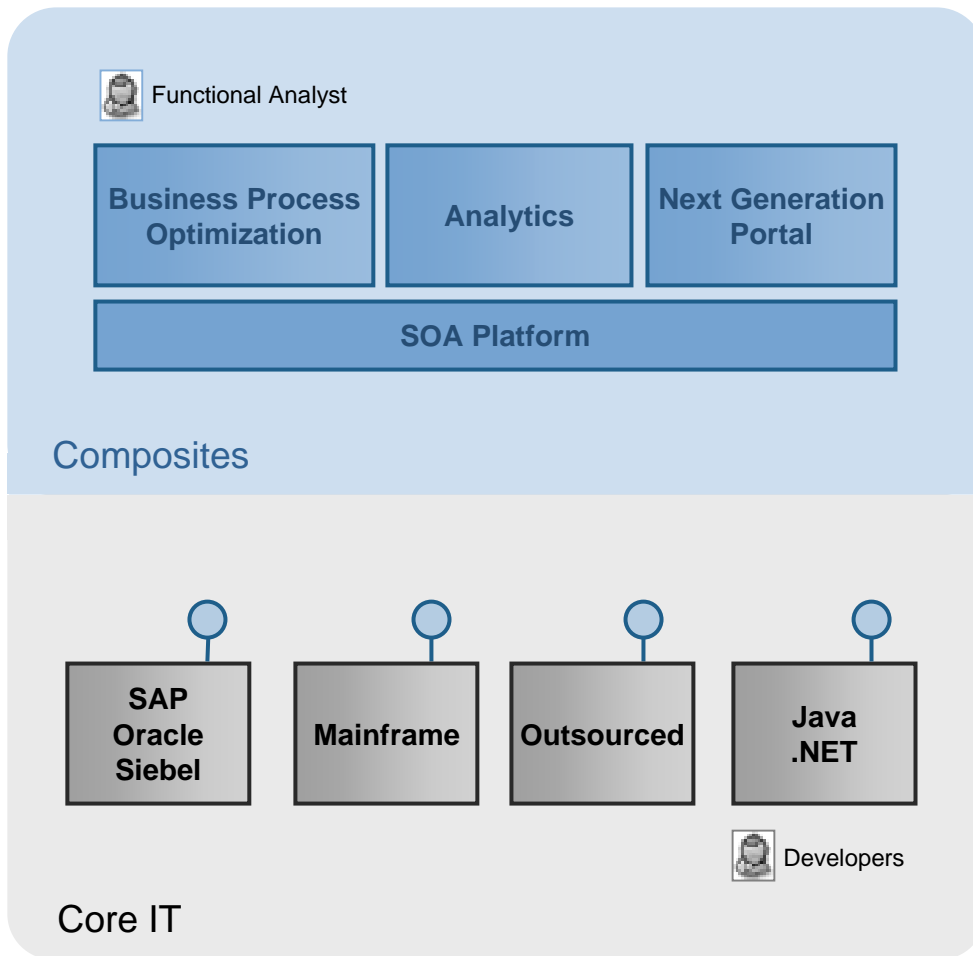
- Hardcoded inside applications
- Mainly sequential
- Silo-ed (divisional and functional)
- One-size fit all
- Fragile point-to-point integration
- Black boxes

Business Processes "To Be"

- Mainly parallel
- Collaborative
- Boundary-less
- Continuously optimized
- Highly personalized
- Continuously audited



Vision



Requirements

- Business Savvy Developer
- Façade/Leverage Existing Core IT
- Build-to-change
- Self-Auditing
- Self-Reporting
- End-to-end Security

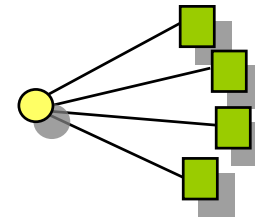
Why Now?

- Network Infrastructure is in place
- Standards (XML, WSDL, WS-*)
- Domain Specific Languages (BPEL, XSLT, Rules, BAML, ...)
- Support from Packaged Applications

Examples of Composites

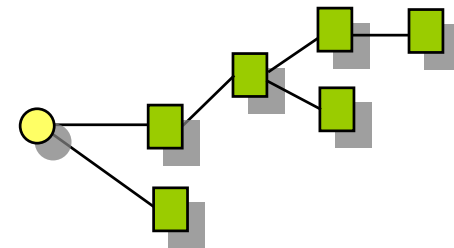
Portal – 360° View

- Customer Support Dashboard
- Supplier Performance Management



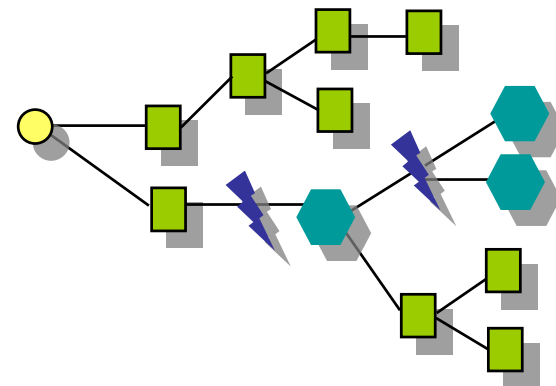
Micro Processes

- Travel Hotel Aggregator
- Aggregate Purchasing
- Advanced Price Calculation



End-to-end Business Processes

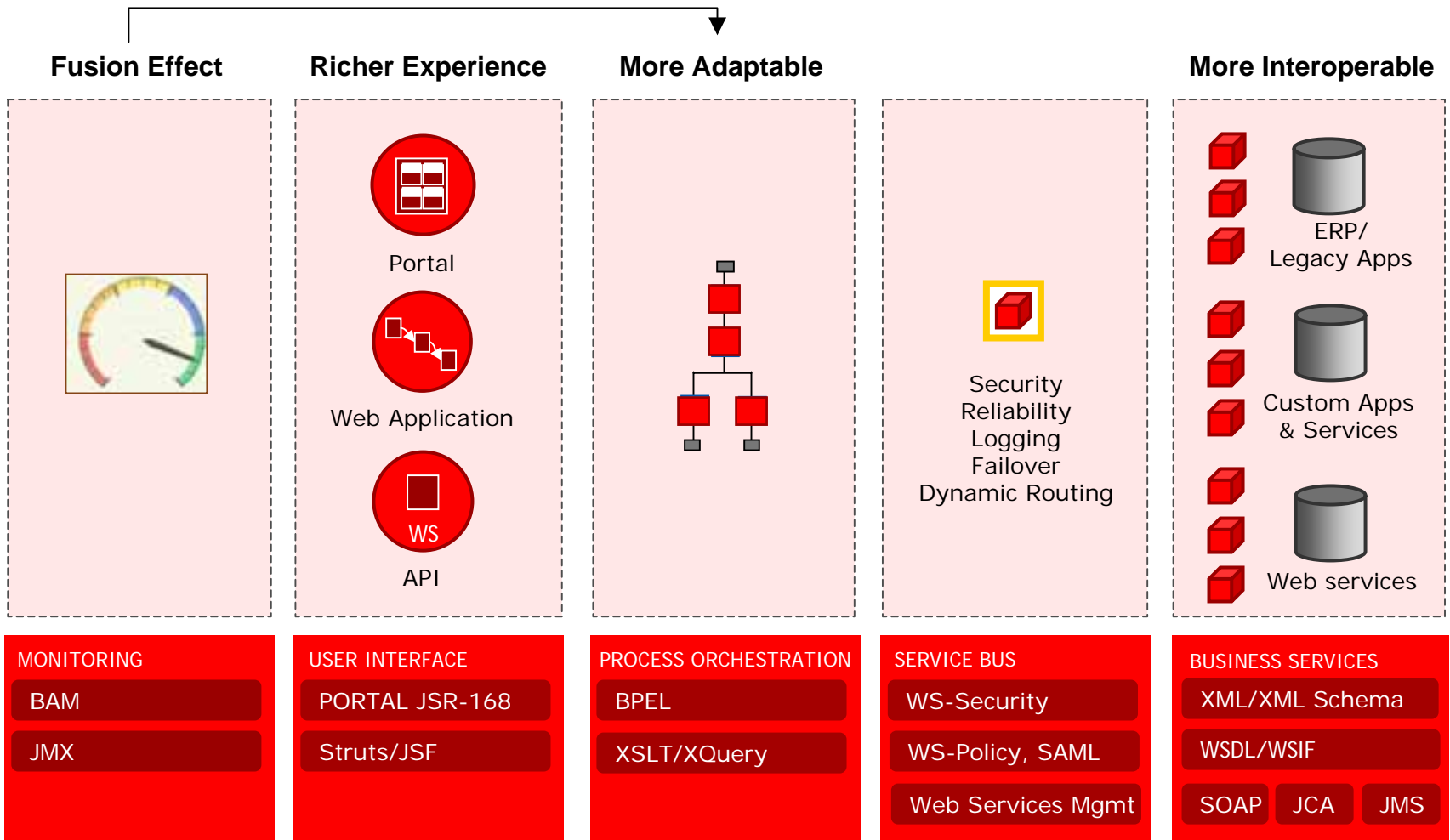
- DSL Service Provisioning
- Employee Onboarding
- Order-to-Cash
- Distributed Order Fulfillment
- Procure-to-Pay



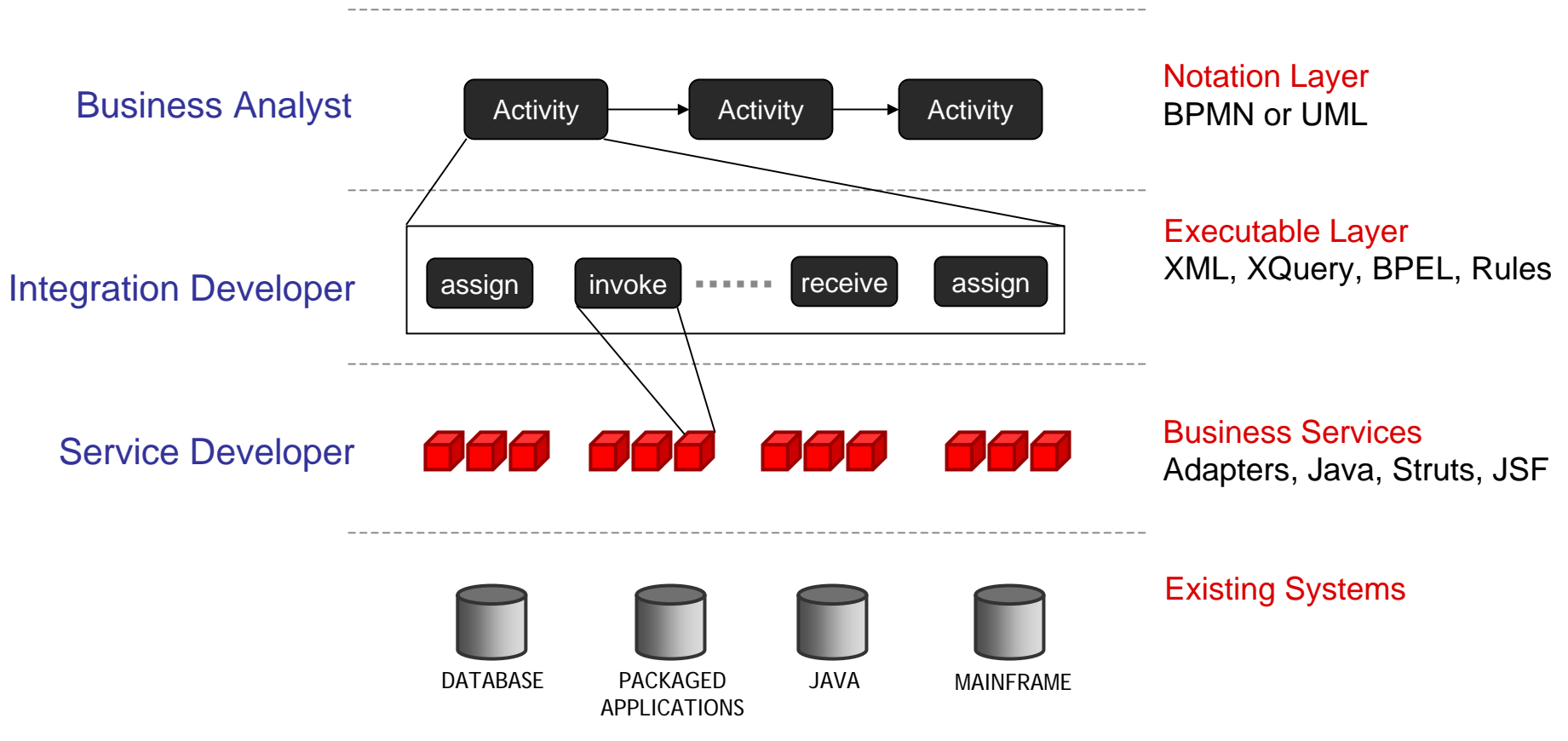
SOA

Key Standards

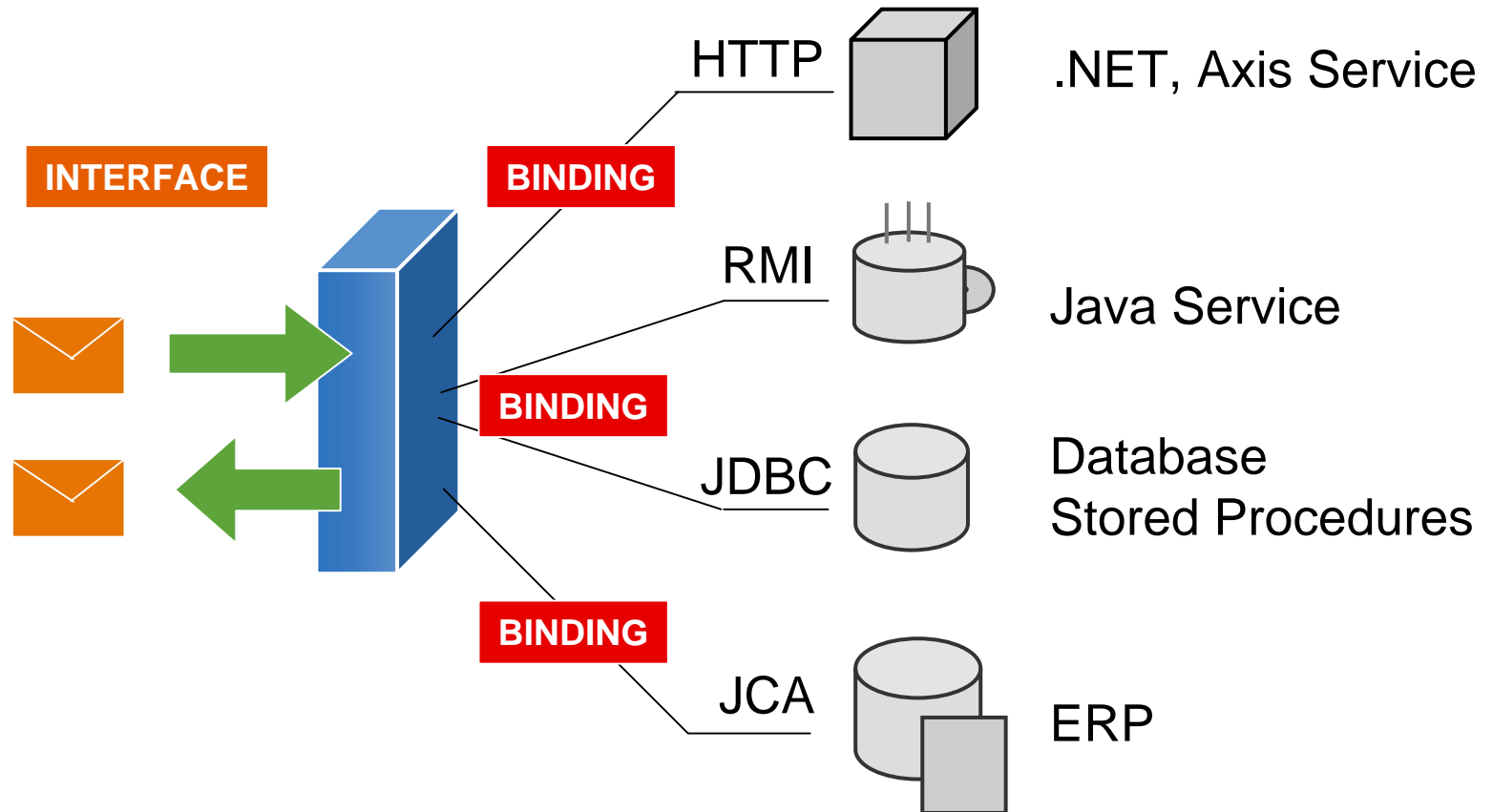
SOA | Key Standards



Top Down versus Bottom Up?



WSDL and Non-SOAP Bindings

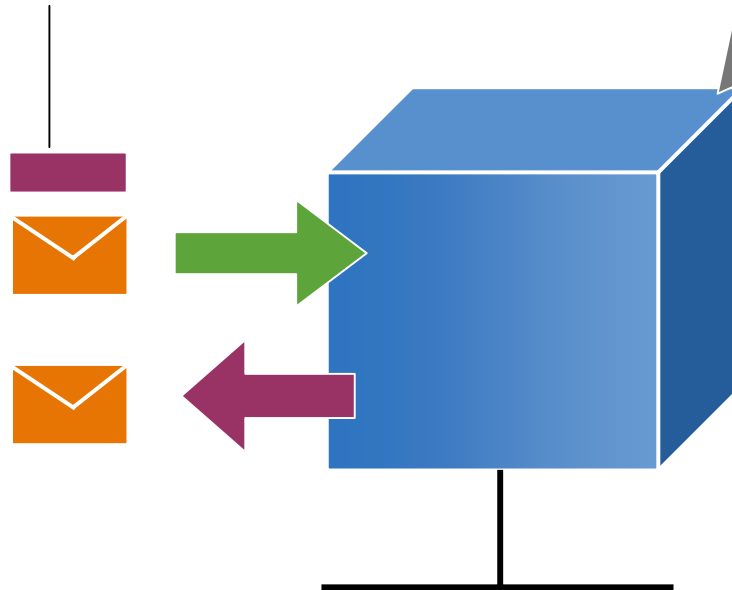


WS-Addressing and Asynchrony

WS-Addressing

Correlation

Callback Location



10:05 Receive Order

10:10 Processing

....

10:25 <risk>4</risk>

Performance

Reliability

Business Time

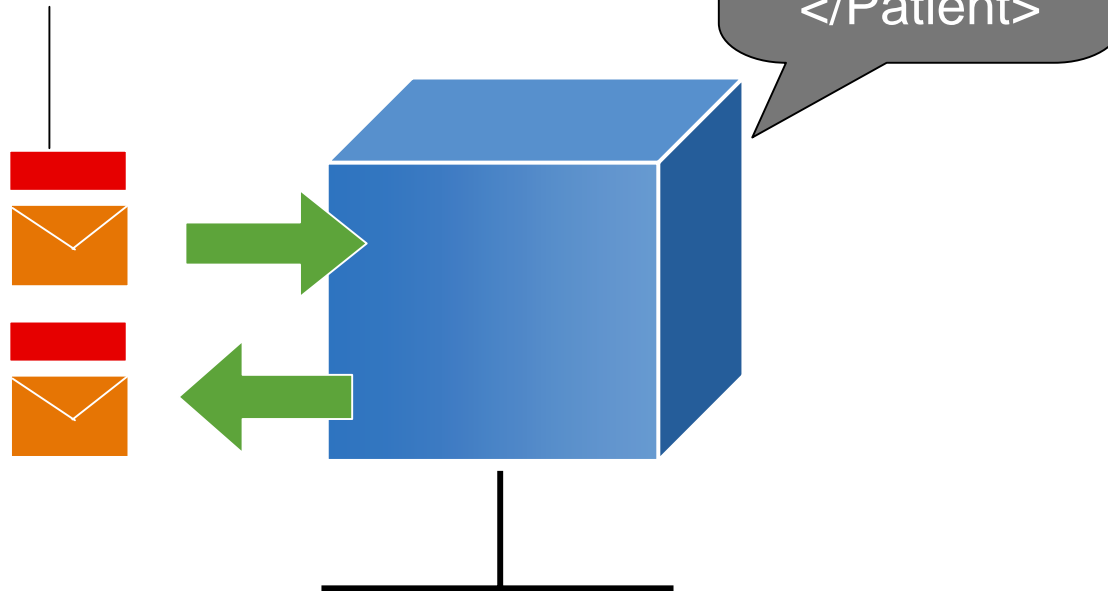
WS-Security

WS-Security, SAML

Signature

Encryption

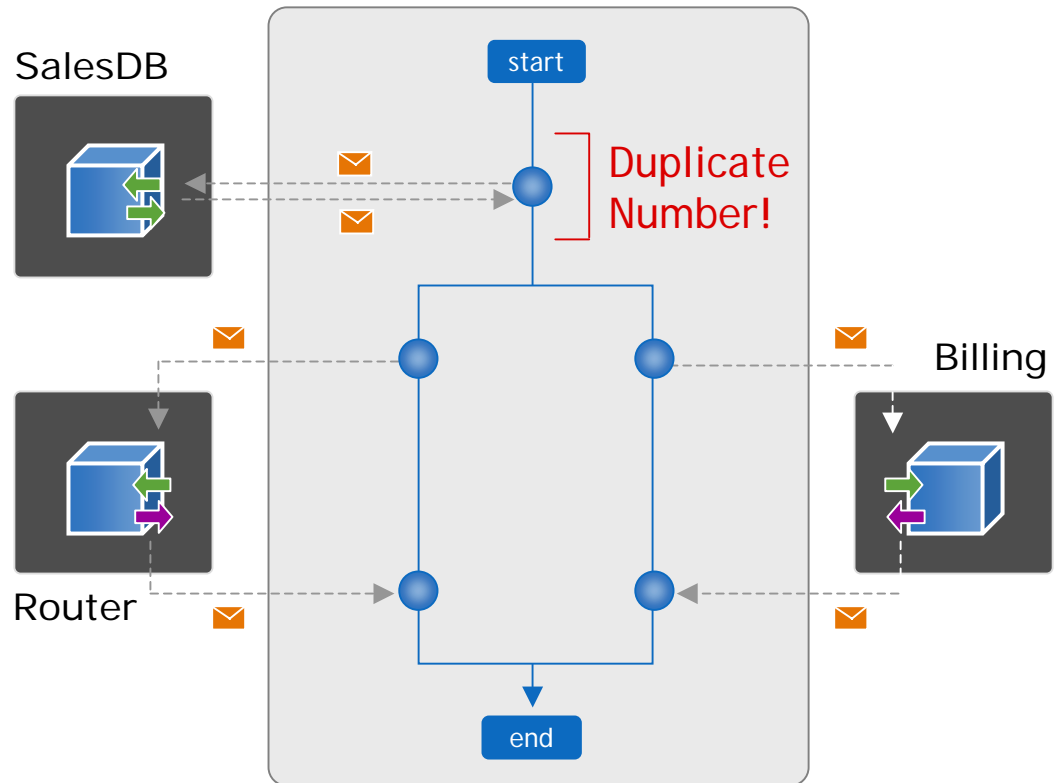
Role and Access Control



BPEL and Process Orchestration

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

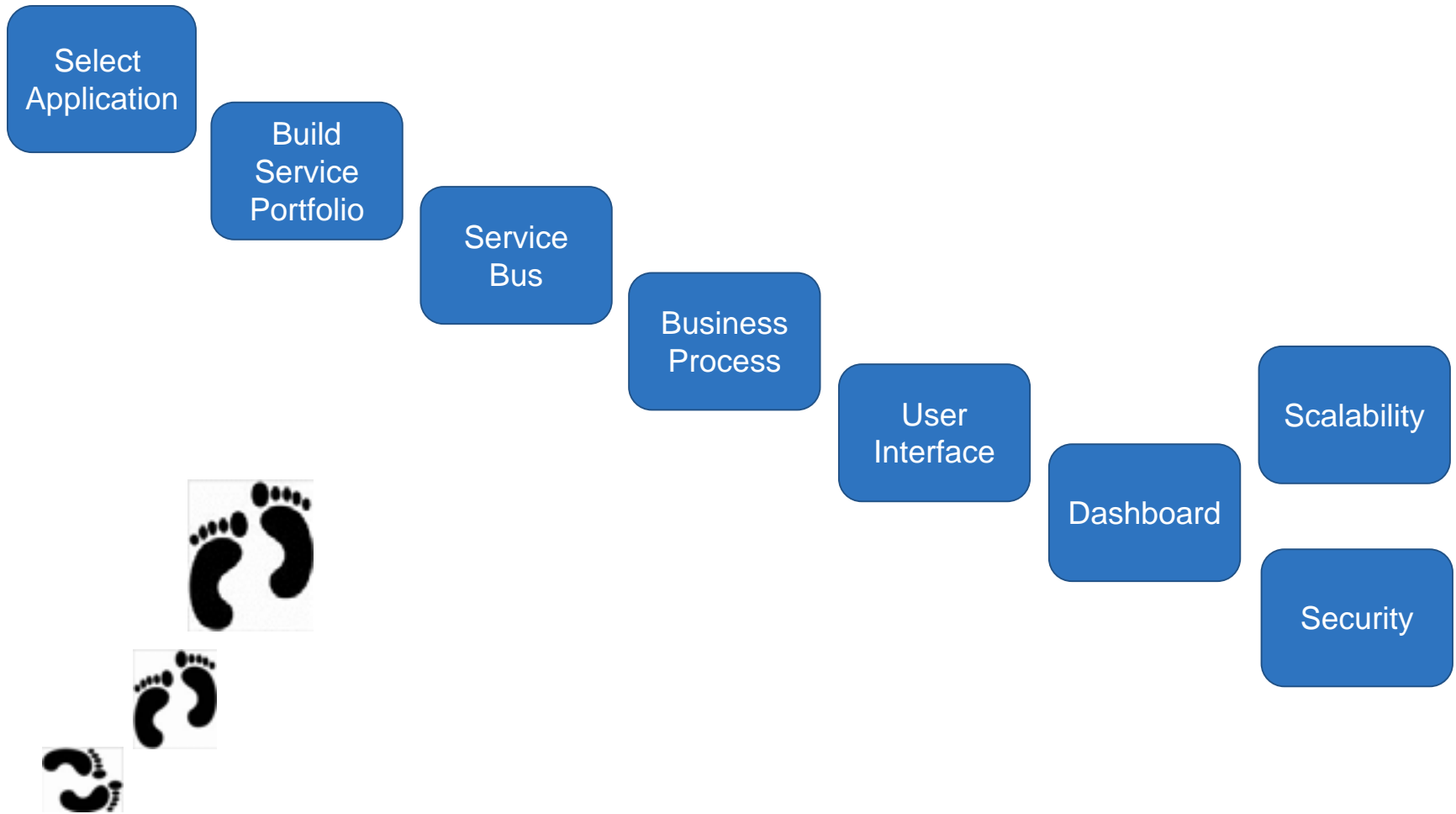
- 10+ years of R&D from MSFT and IBM
- Rich Flow Semantics
- Optimized Bindings
- XPATH+XSLT+XQuery
- WS-Security
- A Process is a Service



SOA

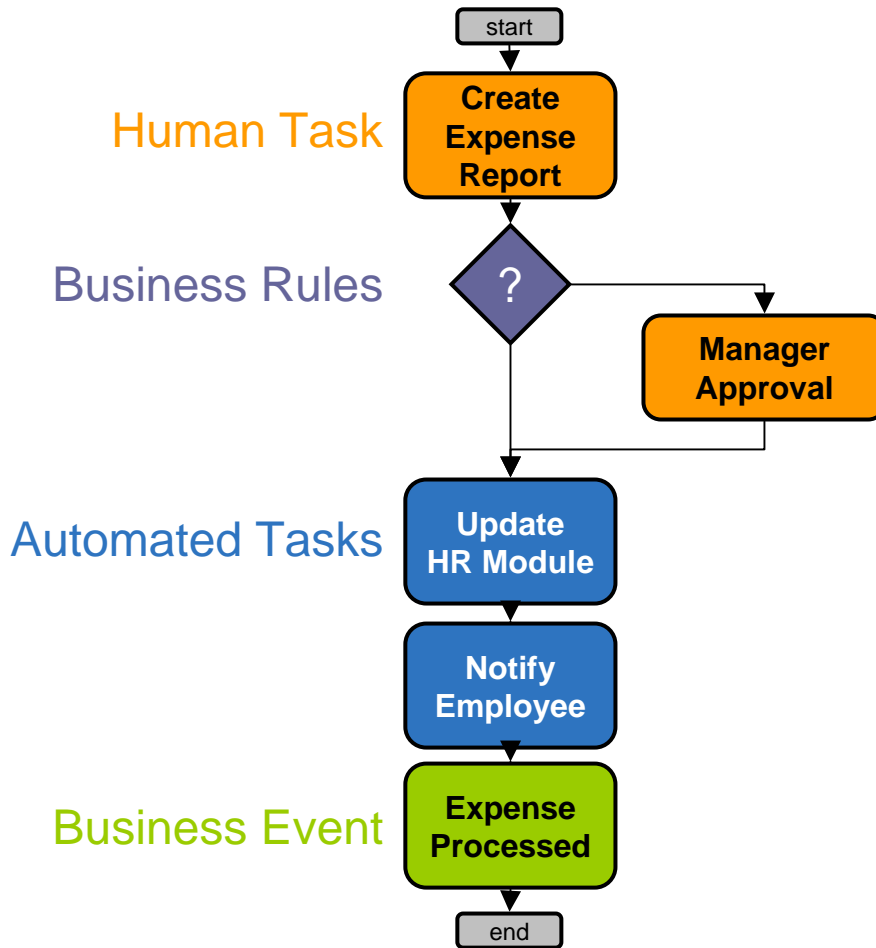
Best Practices

The Path to a Successful SOA Project





0 | Select An Application



CRITERIA

- Broken Process
- Lack of Visibility
- Variance
- Integration Points
- Clear Metrics

DELIVERABLE

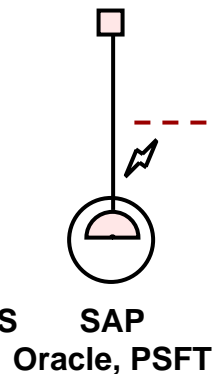
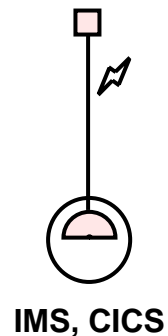
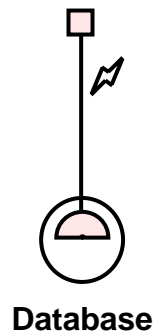
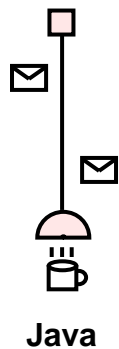
- Process Sketch
- Set of Human Tasks
- Set of Automated Tasks
- Set of Business Events
- Set of Business Rules



1 | Build 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

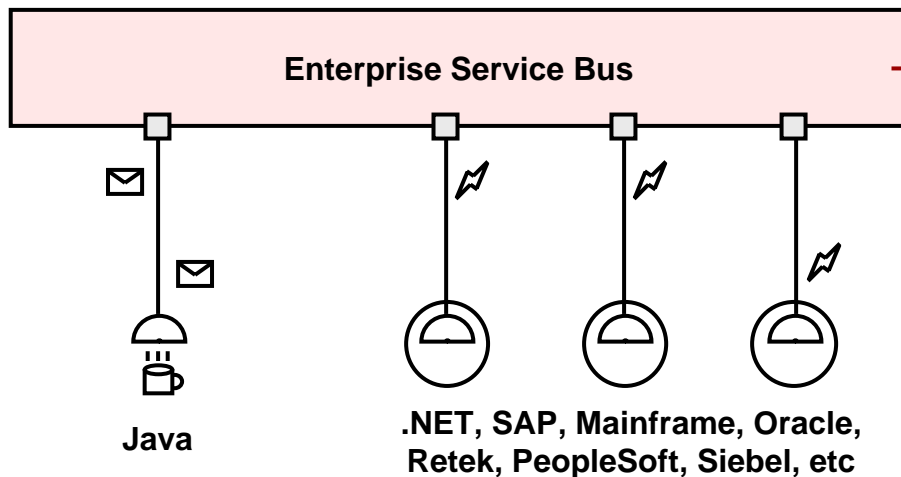




2 | Wire Through An Enterprise Service Bus

BEST PRACTICES

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

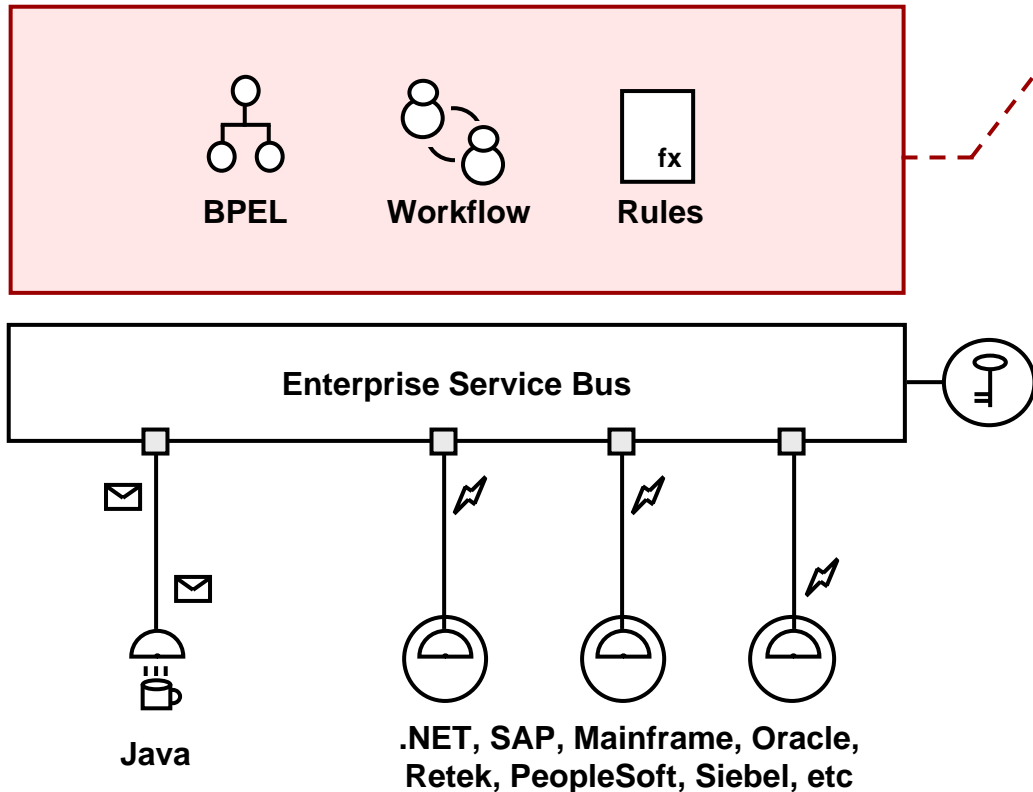




3 | Orchestrate into End-to-End Processes

- BEST PRACTICES

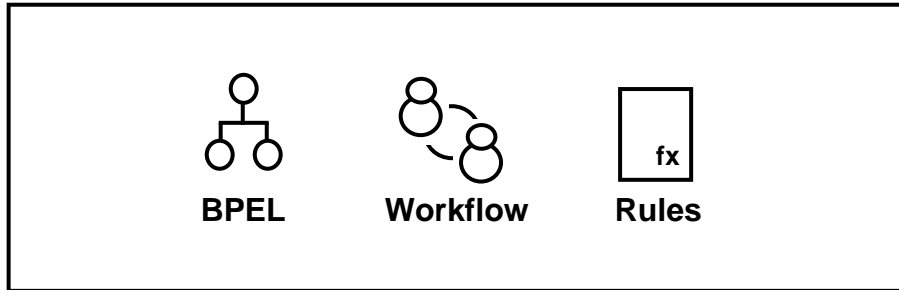
- BPEL
- XSLT Transformation
- Human Workflow Service
- Rules Service
- Notification Service
- Error Hospital Service
- ESB Binding and Wiring
- Tracing and Debugging
- Iterative Development
- Unit Testing



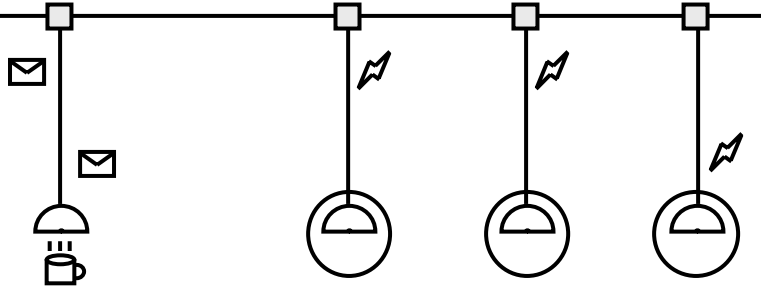


4 | Expose through Rich User Interfaces

Portal, JSF Applications, .NET, Microsoft Office



Enterprise Service Bus



Java

.NET, SAP, Mainframe, Oracle, Retek, PeopleSoft, Siebel, etc

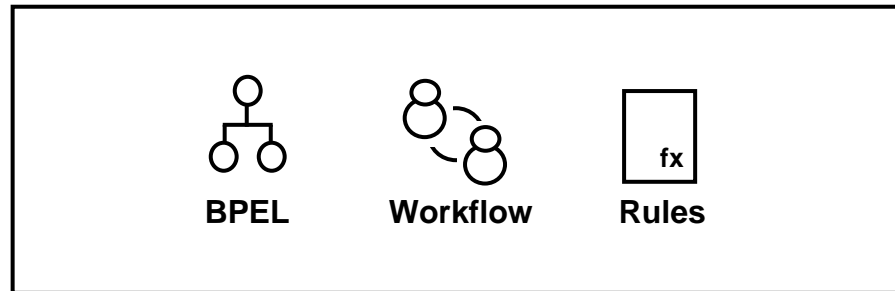
BEST PRACTICES

- JSF
- WSRP, JSR-168

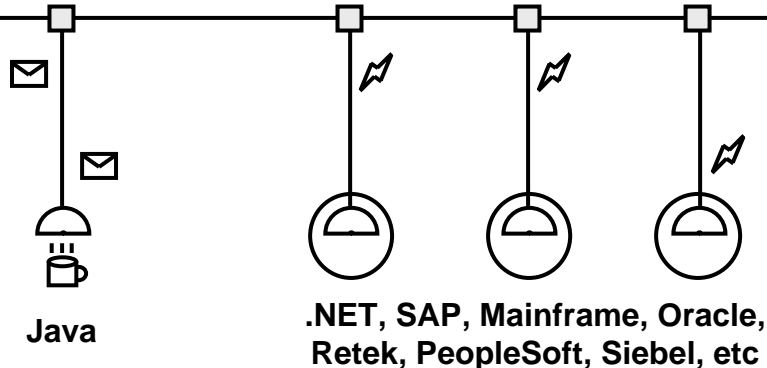


5 | Deliver Real-time Dashboards

Portal, JSF Applications, .NET, Microsoft Office



Enterprise Service Bus



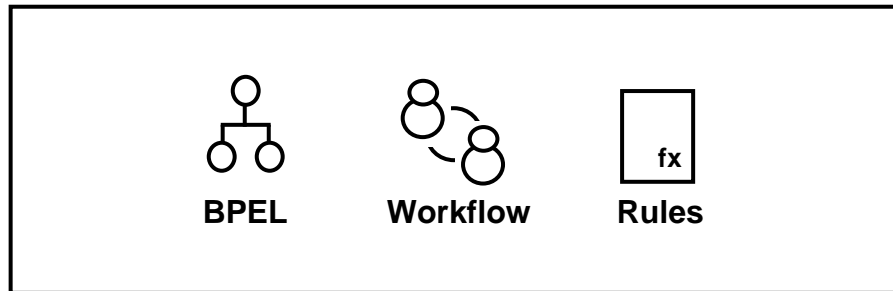
BEST PRACTICES

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

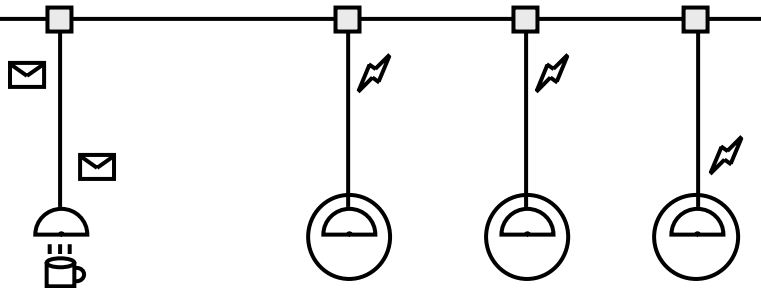


6 | Secure Interactions

Portal, JSF Applications, .NET, Microsoft Office



Enterprise Service Bus

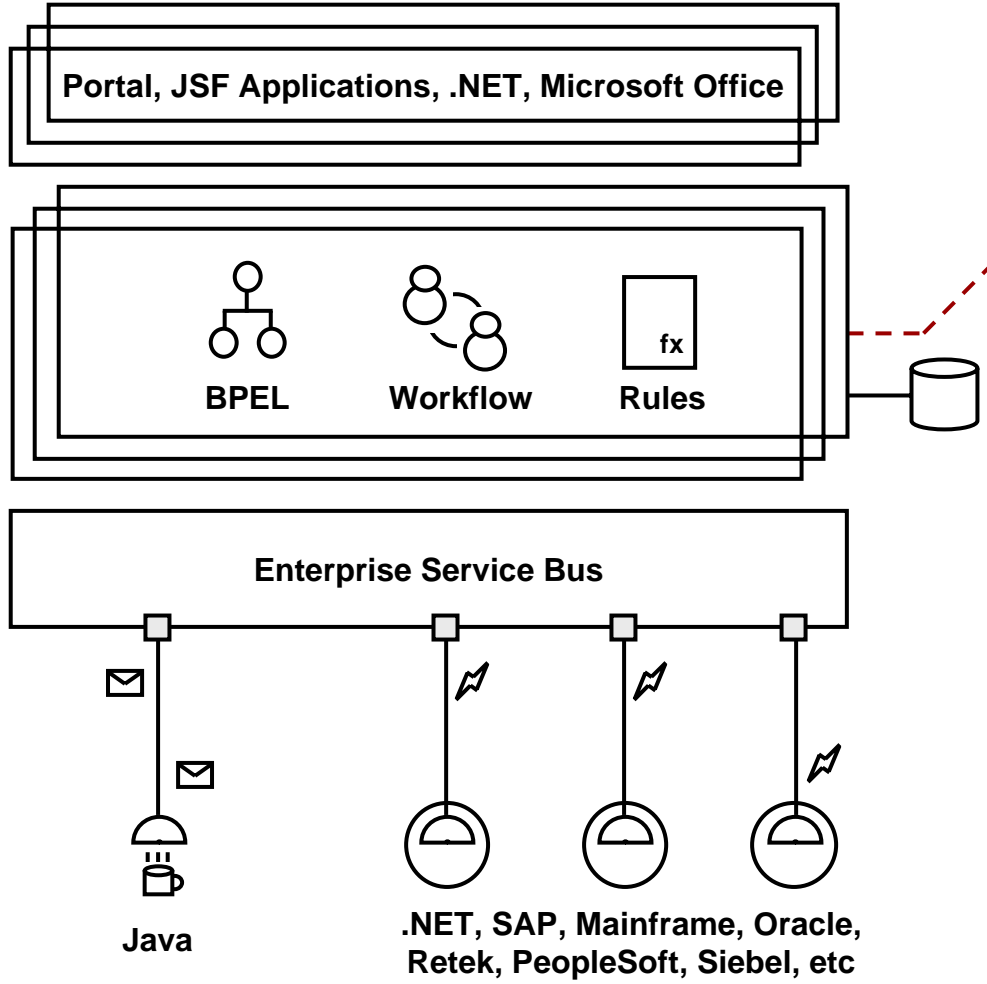


- BEST PRACTICES

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



7 | Scale On Demand



- BEST PRACTICES

- Asynchronous Interactions
- Support for Large XML Documents
- Clustering-Friendly
- JCA and Java Binding
- Batch API



SOA Cookbook

<http://otn.oracle.com>

Part 1: [A Services-Oriented Approach to Business Rules](#)

Part 2: [Building a Web Services Network with BPEL](#)

Part 3: [Making BPEL Processes Dynamic](#)

Part 4: [Using WSIF Integration](#)

Part 5: [Adding BPEL to the Enterprise Integration Mix](#)

Part 6: [Building Rich Internet Applications for Workflow and Process Monitoring](#)

Part 7: [Building BPEL Process on the Fly](#)

Part 8: [Integrating PeopleSoft CRM with Oracle E-Business Suite Using BPEL](#)

Part 9: [Managing a BPEL Production Environment](#)

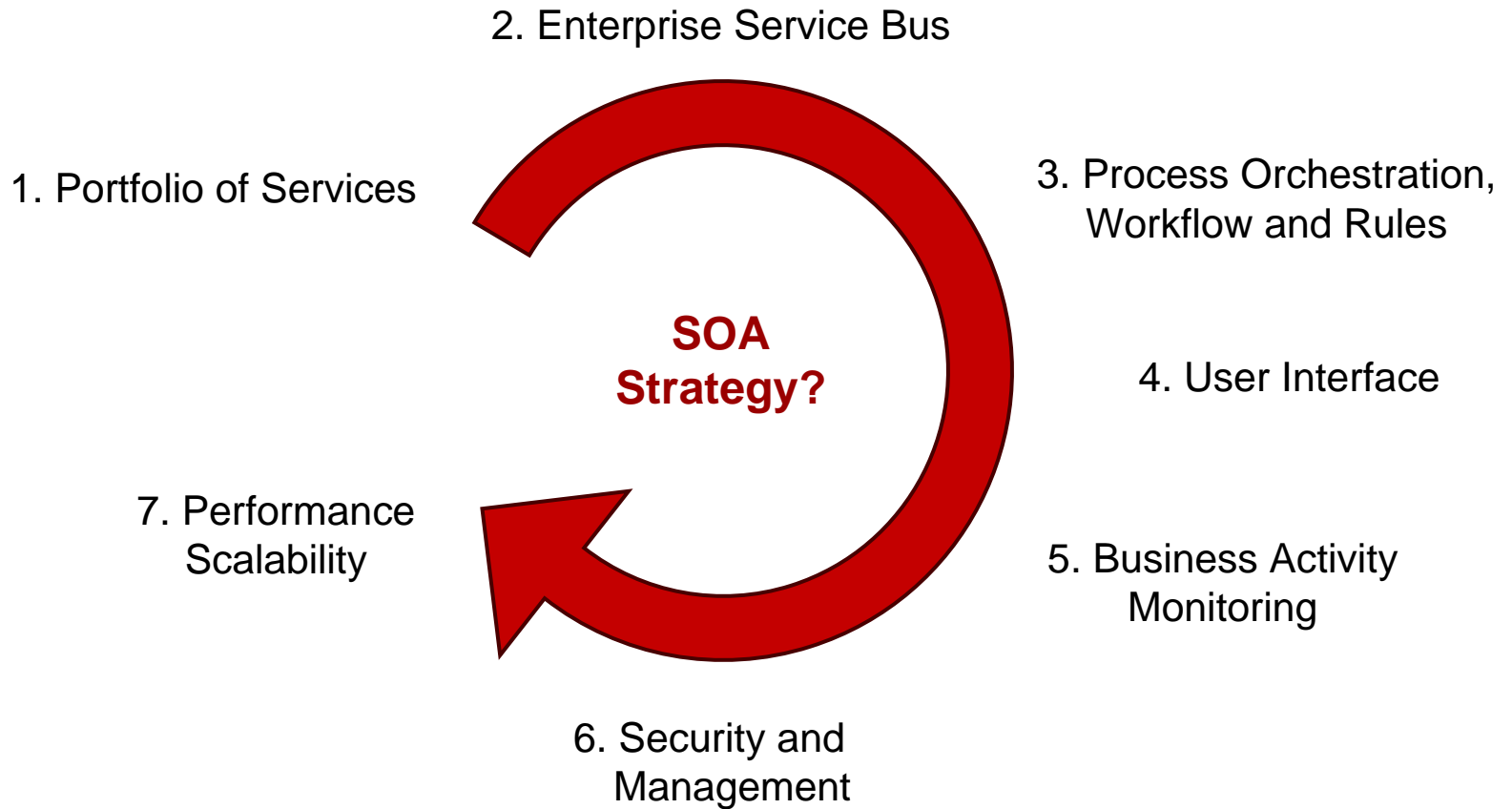
Built-to-Change

Backup Slides

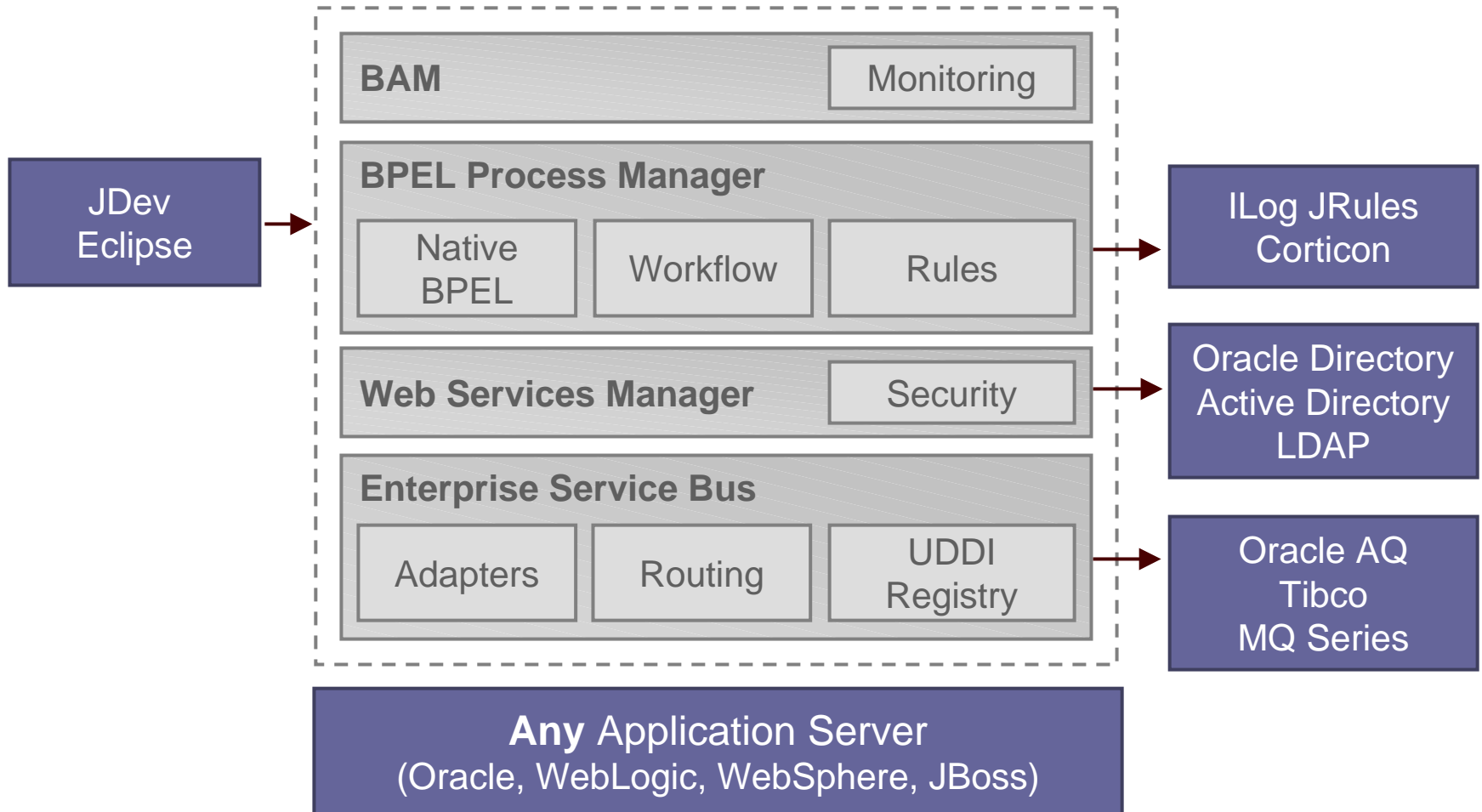
SOA Cookbook

<http://otn.oracle.com>

Best Practices for Defining an SOA Strategy



“Hot-Pluggable”

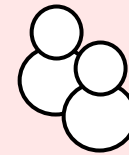


DEMO

Customer Needs

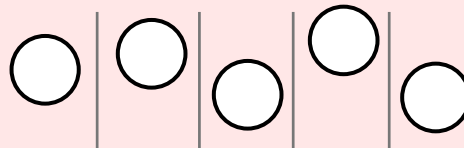
Increasingly Demanding Users

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



Increasingly Complex Infrastructure

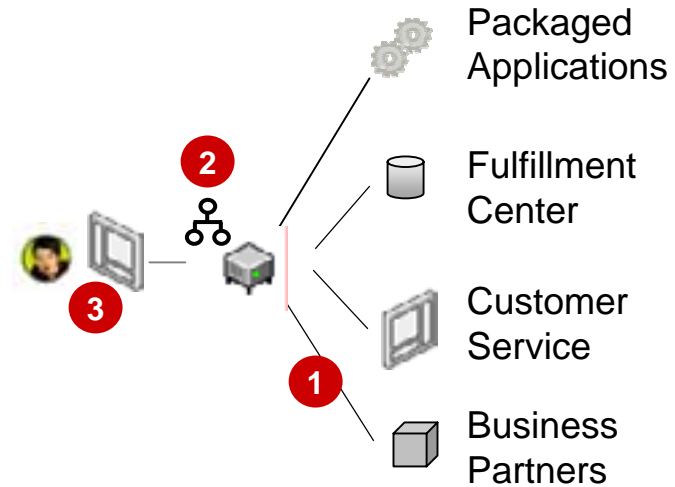
Heterogeneous Systems
Silos



The Application Model is Evolving...



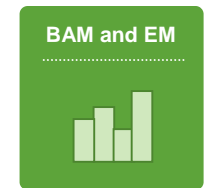
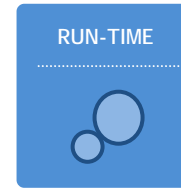
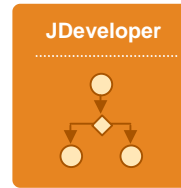
Web Solution



SOA Solution

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

Key Features | Best of Breed



PUBLISH SERVICES	BUILT-IN SERVICES	ASSEMBLE	EXECUTE	MONITOR
<ul style="list-style-type: none"> • Bindings to 100+ backend systems (JCA) • JMS Bridge • .NET, Axis, Workshop, Glue, Systinet, interop • User Tasks/Workflow • Email with Attachment 	<ul style="list-style-type: none"> • Workflow Service • Identity Service • Notification Service • Scheduling Service • Decision Services (Rules) • Error Hospital 	<ul style="list-style-type: none"> • Comprehensive BPEL 1.1 • XSLT Transformation • Visual Modeling Tool • Native Java Binding • XML Facade • Detailed Error Reporting • Ant-based build and deployment framework • Versioning 	<ul style="list-style-type: none"> • Comprehensive BPEL 1.1 • Sync. Messaging • Async. Messaging • Context Dehydration • Reliability • Side-by-side versioning • Compensating Transactions • Clustering • Large XML documents • WS-Policy driven security 	<ul style="list-style-type: none"> • Visual Monitoring • Auditing • BPEL Debugging • In-flight Administration • Performance Tuning • Task Management • Partitioning/Domains • Centralized Security • Real-time PKI Dashboard

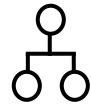
WSDL, XML Schema, BPEL, XSLT, XQuery, WS-Security, WS-Addressing, WS-Policy

Key SOA Concepts

4. Access
(Unified)

Portal, JSF Applications, .NET, Microsoft Office

3. Assembly, Orchestration
(Modularity)



BPEL

Workflow

Rules

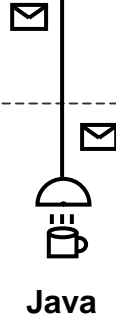
5. Monitoring
(In-Context,
Real-time)

2. Naming/Registry, Filtering,
Transformation, SLA
(Dynamic)

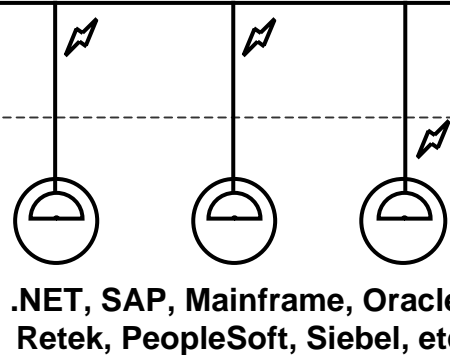
Enterprise Service Bus (WS-*)

6. Security
(Declarative)

1. Portfolio of Business
Services and Events
(Granularity)

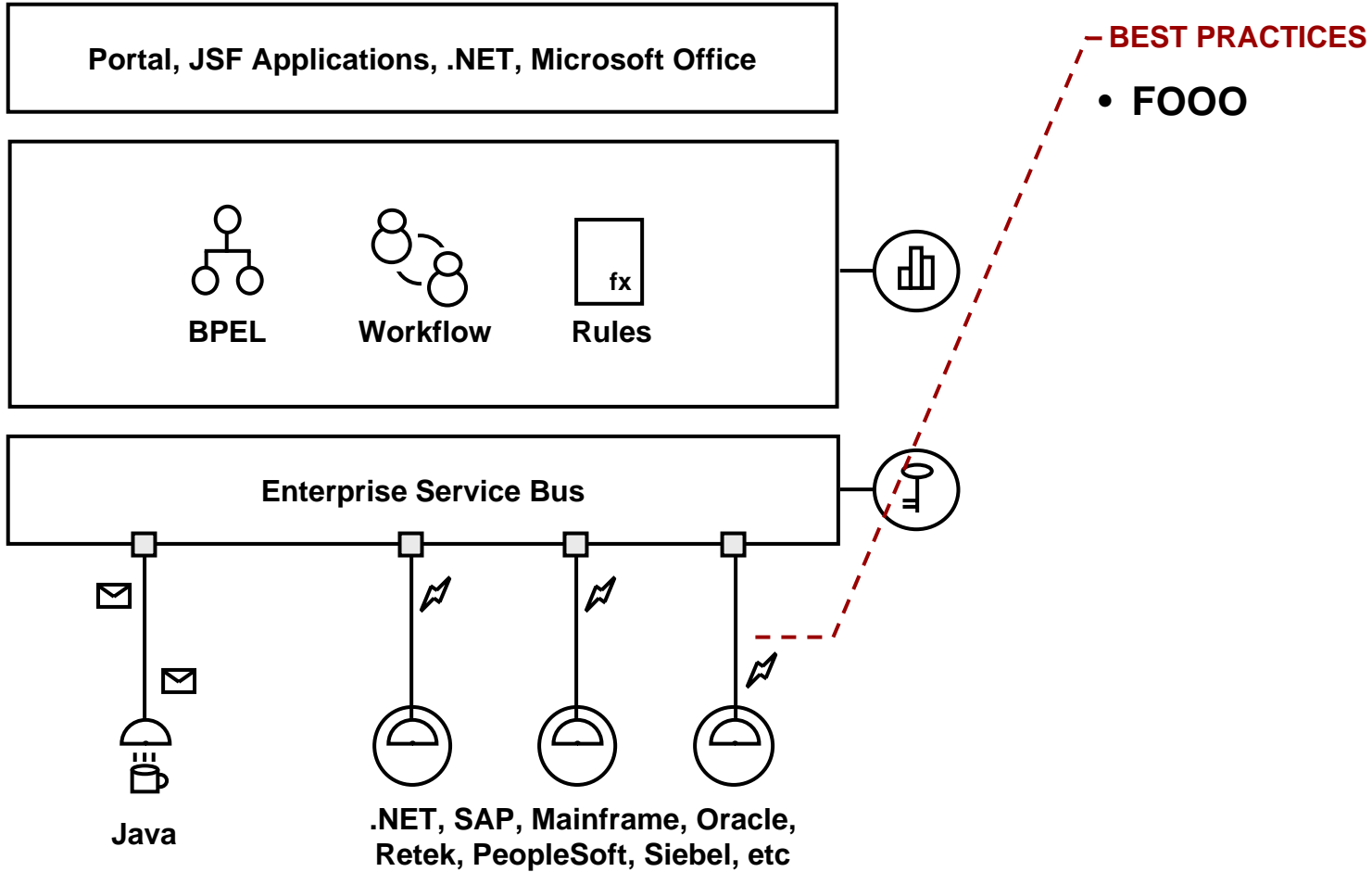


Java



.NET, SAP, Mainframe, Oracle,
Retek, PeopleSoft, Siebel, etc

Template



Electronics Store Demo



**Order Battery
(Customer)**



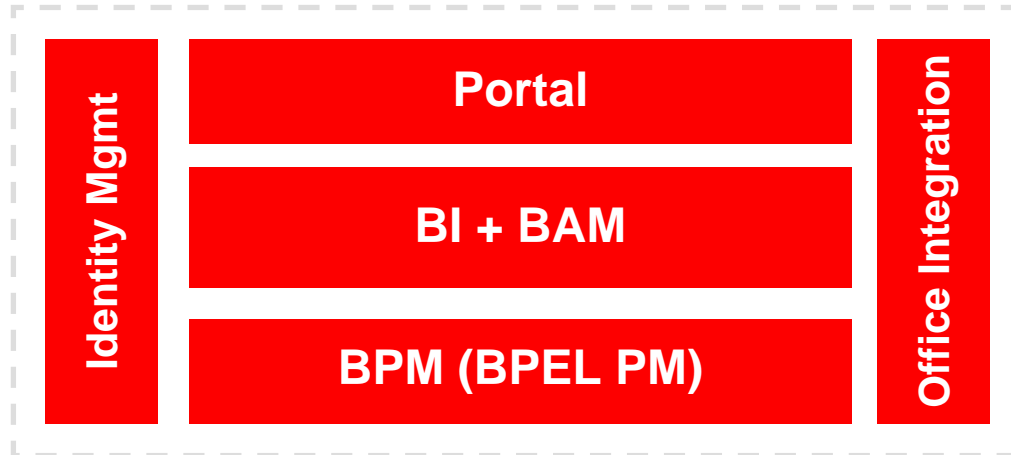
**Book Order
(CSR)**



**Fulfill Order
(FR)**



**Manage Supplier Relations
(Executive)**



PeopleSoft



Oracle EBS

SOA Infrastructure Stack

