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Integrating Database Native Web Services Into Oracle's SOA Architecture

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OOW, October 2009



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Topics

- Why a SOA
- The database in a SOA
- Choices in exposing database as services
- Designing the services
- Resources



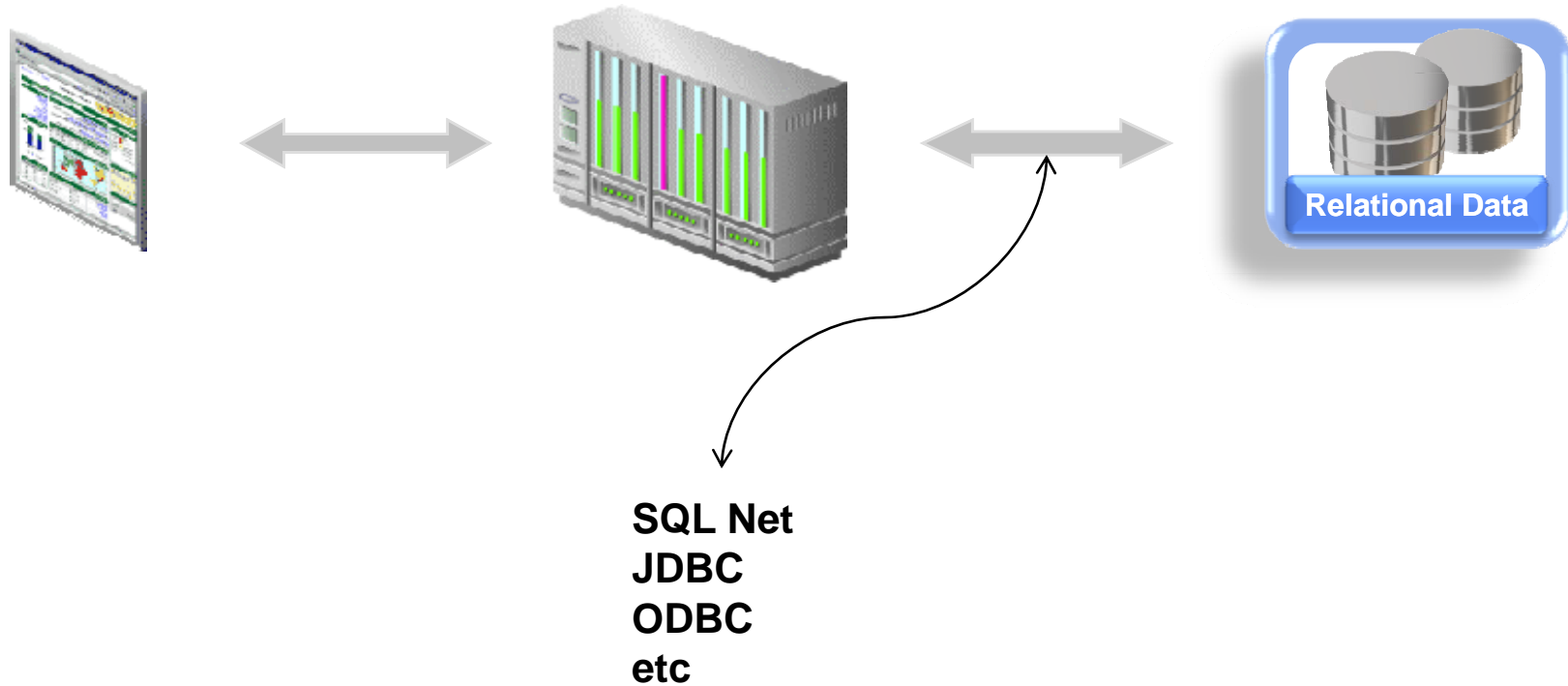
Why a Service Oriented Architecture?

- It's the new buzzword
- It's a must-have for the resume

- To integrate applications
- To build flexible processes
- To modernize applications

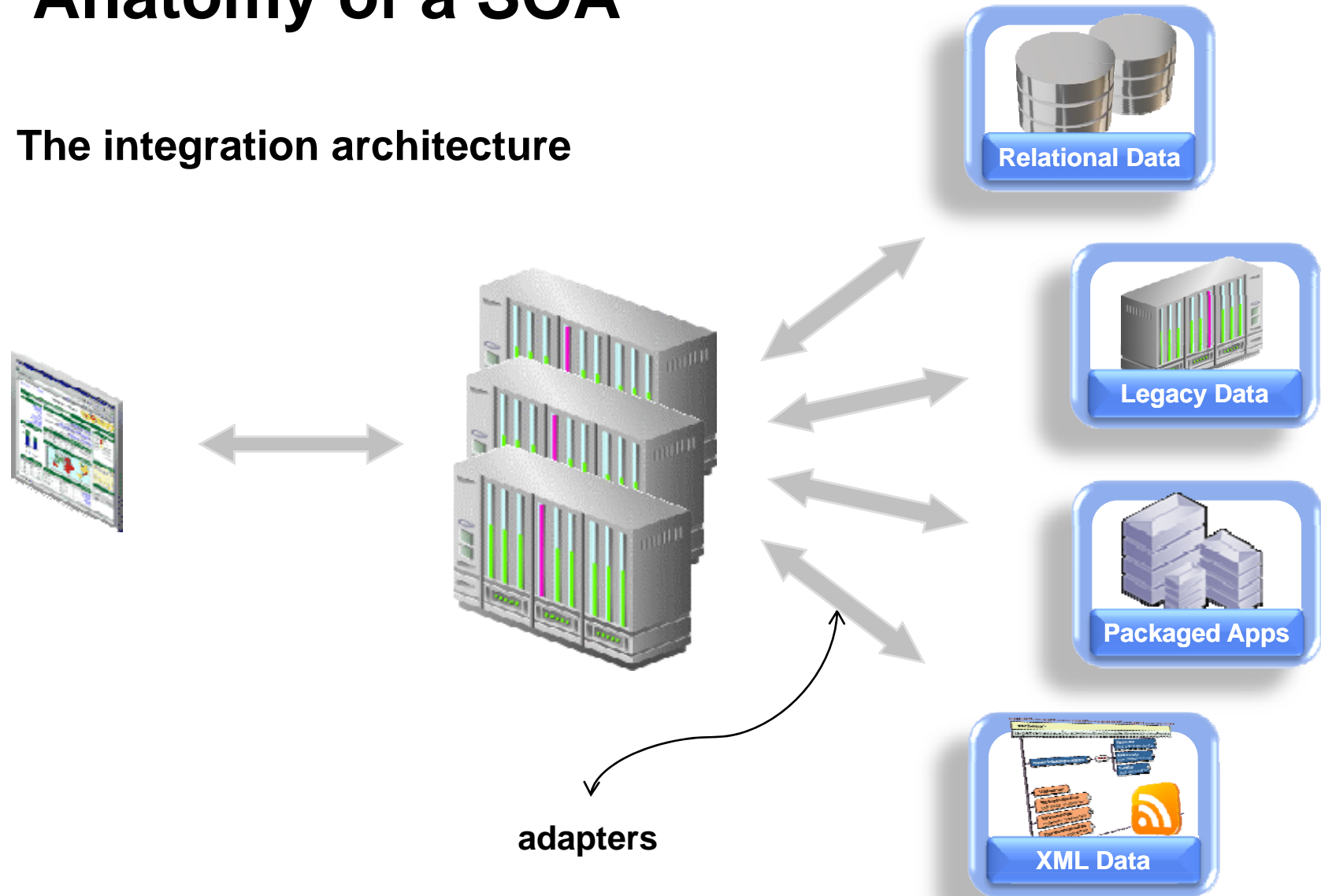
Anatomy of a SOA

The 3 tier architecture



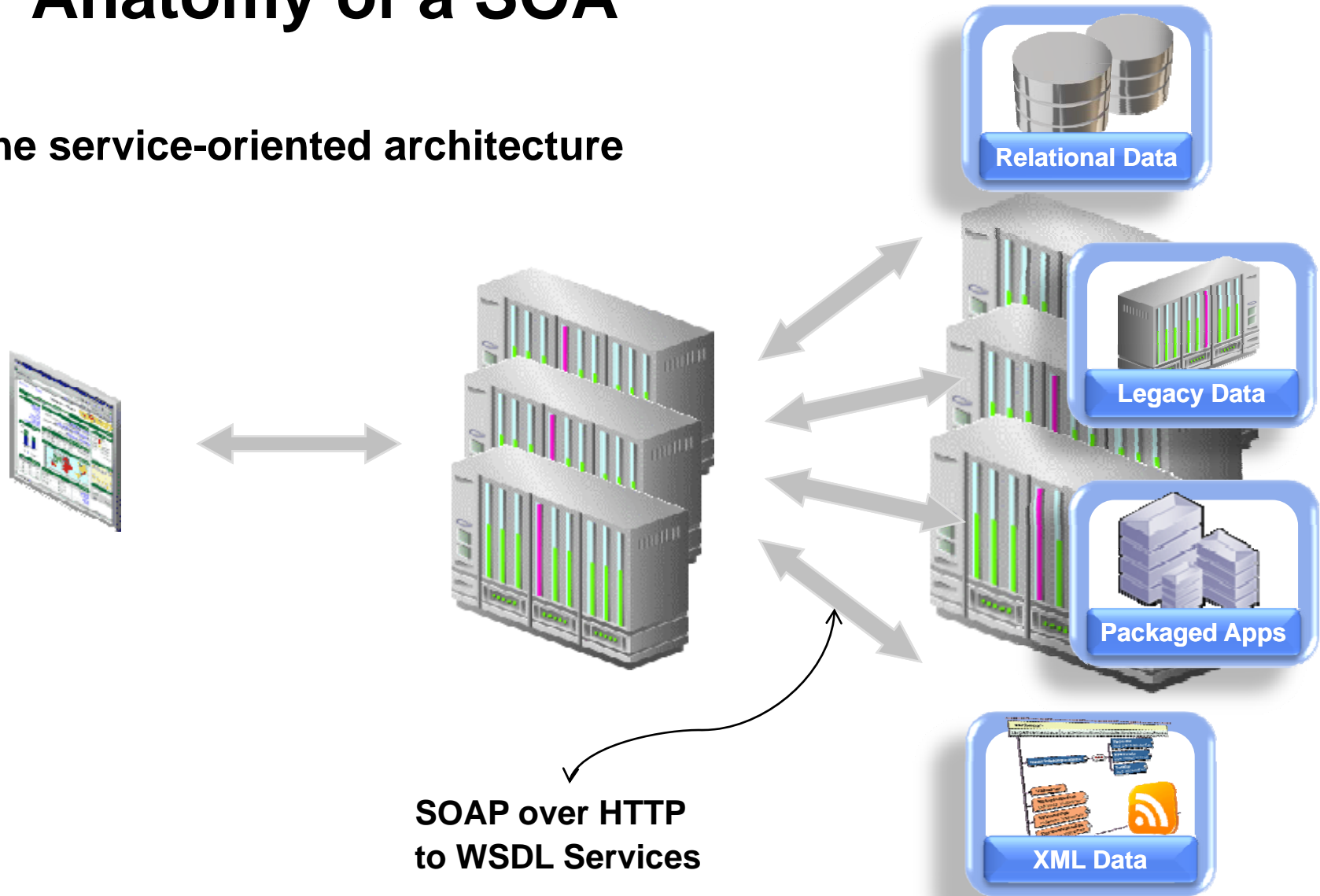
Anatomy of a SOA

The integration architecture

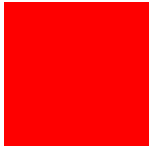


Anatomy of a SOA

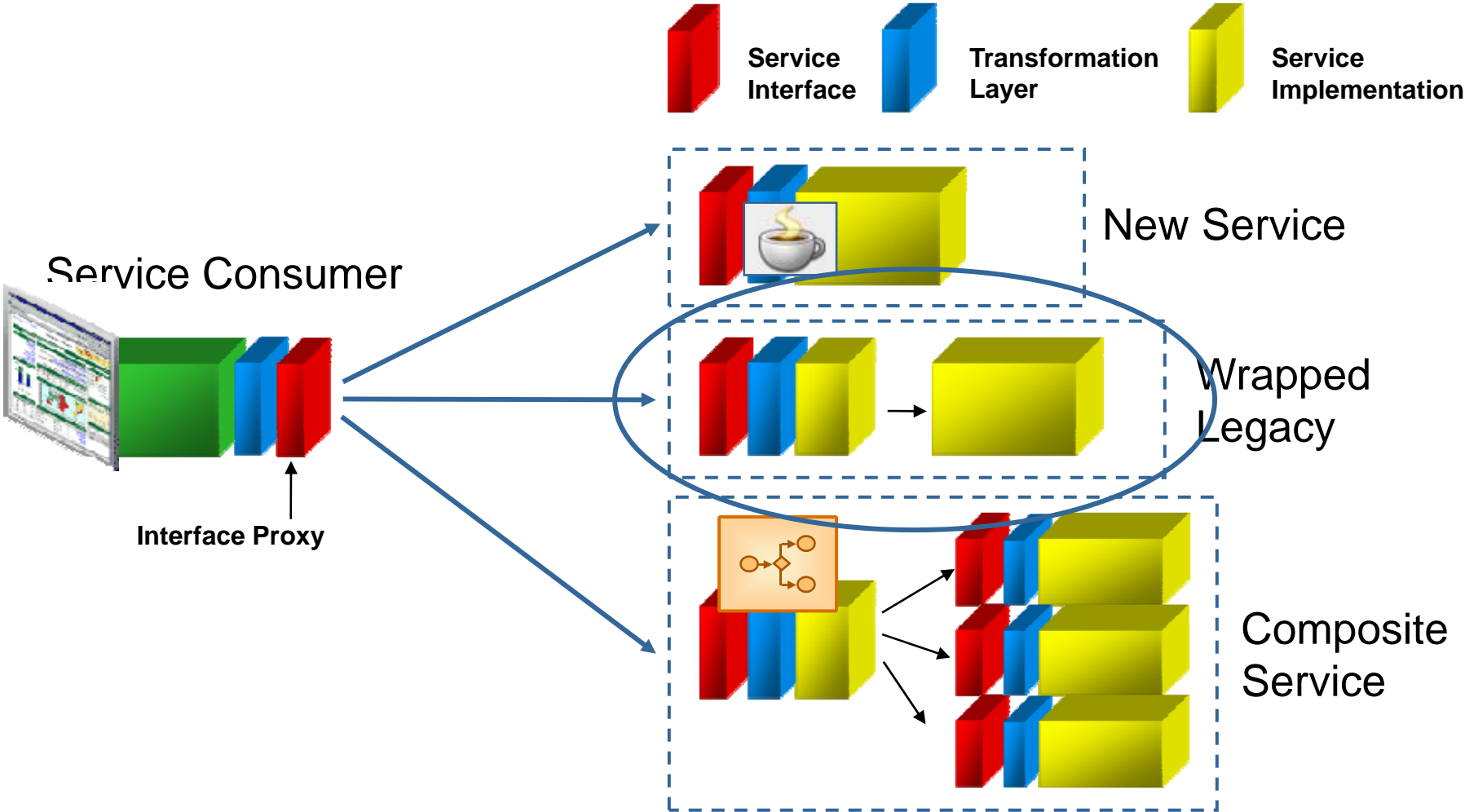
The service-oriented architecture



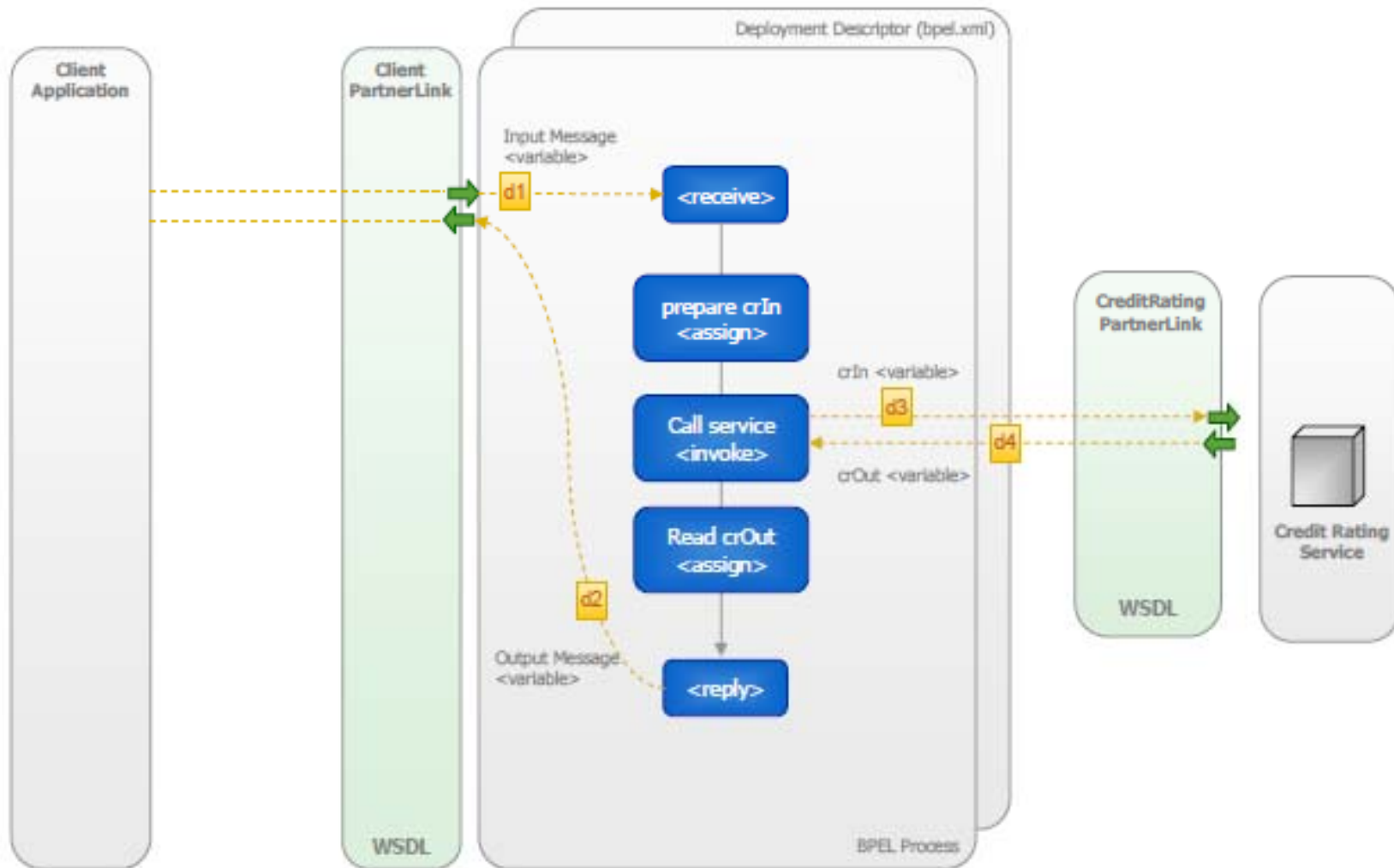
SOAP over HTTP
to WSDL Services

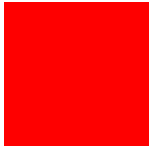


Anatomy of a Service



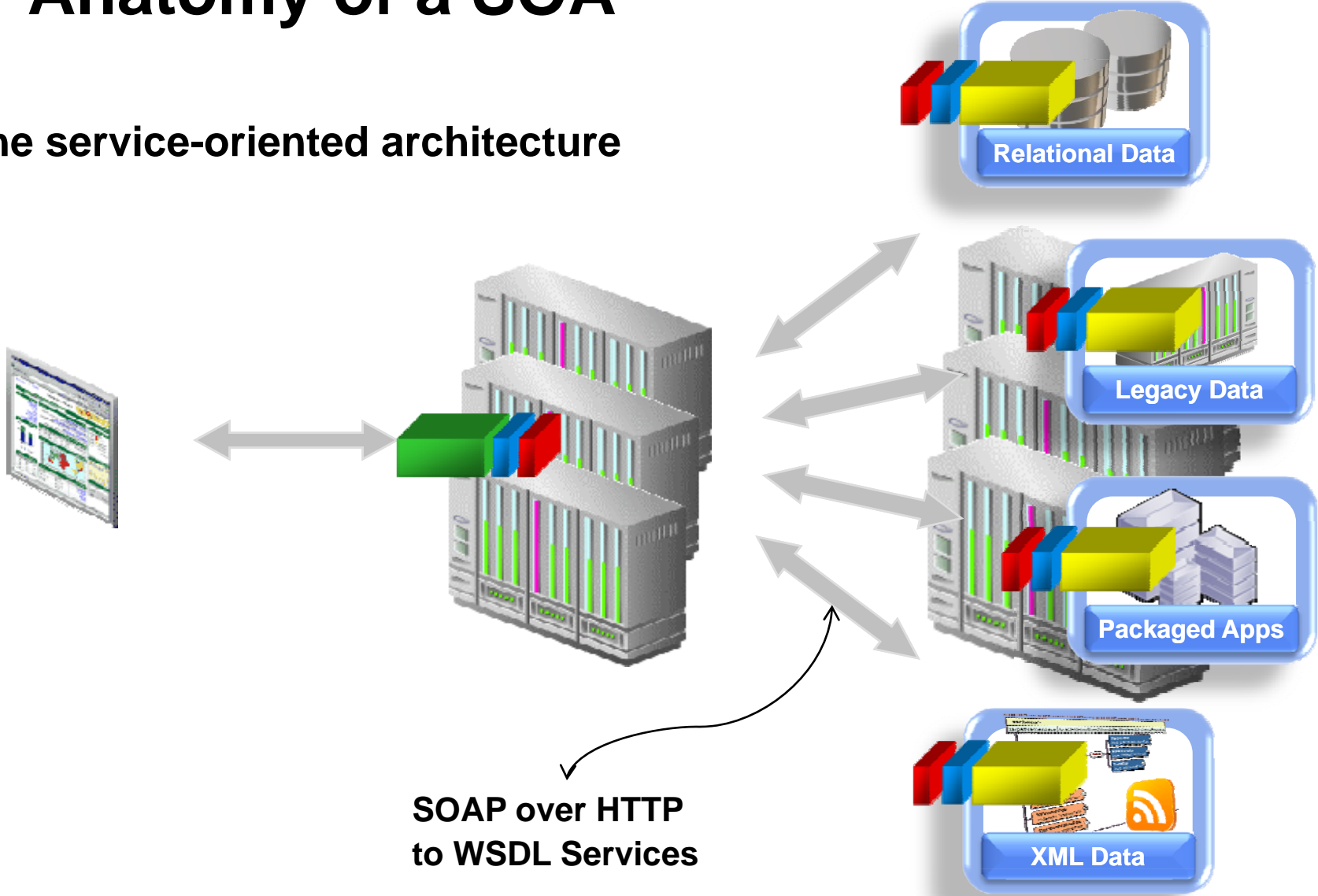
A Composite (BPEL) Service





Anatomy of a SOA

The service-oriented architecture





Anatomy of a SOA – summary

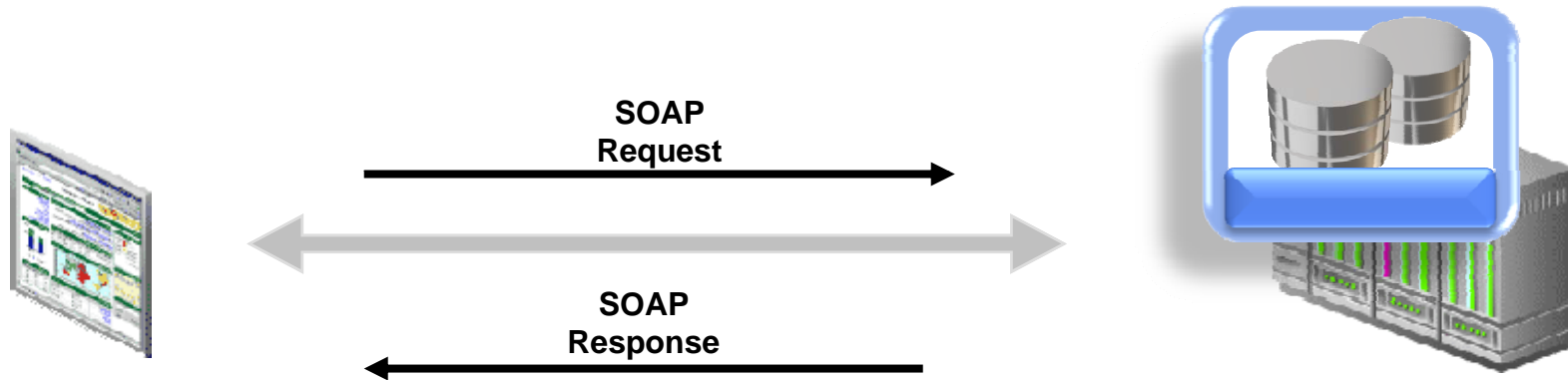
- To run a web service you need a server
 - J2EE, .Net or other (e.g. Oracle Database)
- Once you have it deployed it has a URL
 - So it can be reached from anywhere accessible
- WSDL describes the messages it expects & returns
 - So a consumer/client can know how to interact
- A service can be implemented in any technology
 - As can the consumer
- A service can consume other services
 - E.g. BPEL



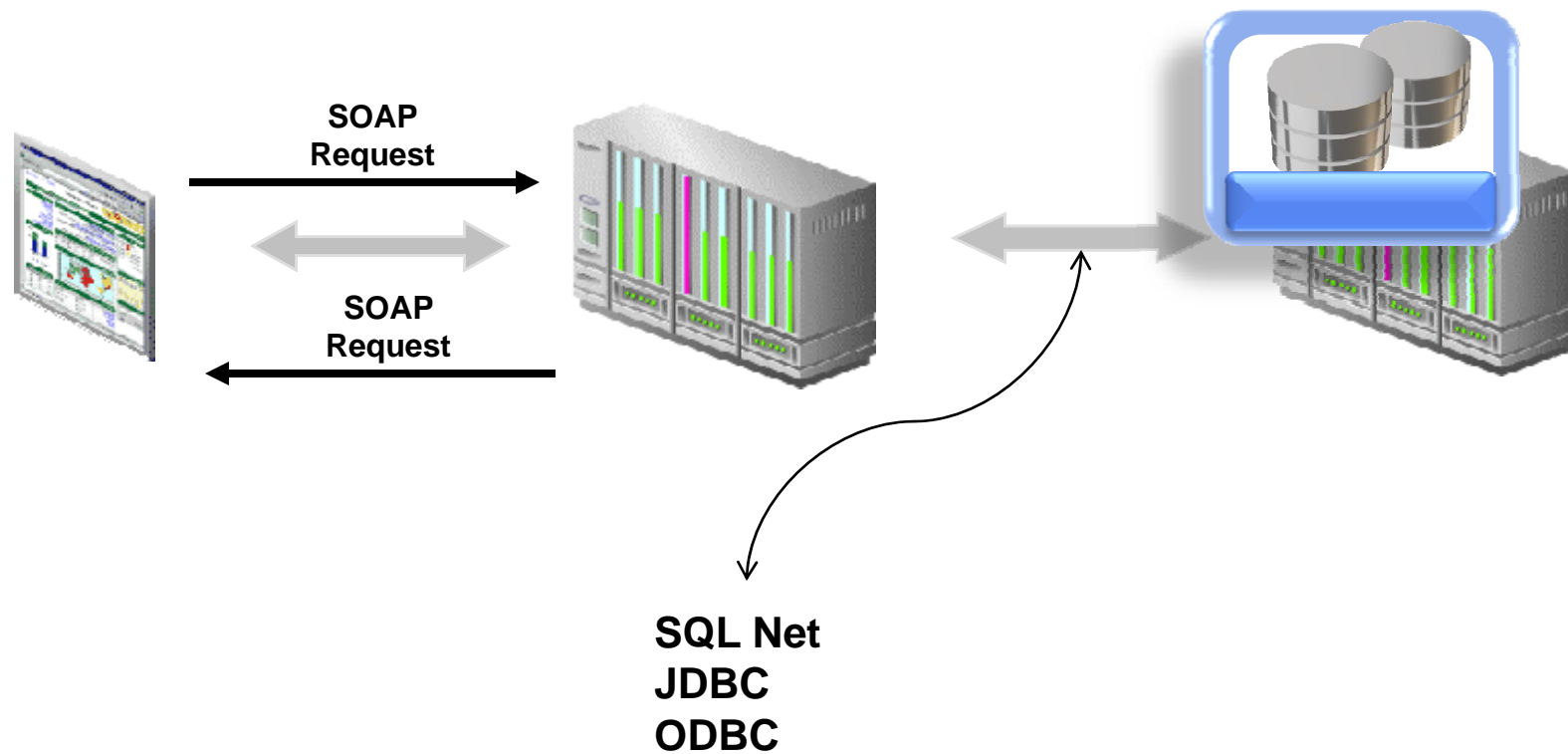
How Do Database Services Play?

- Four (count them) ways
 - Native Database Web Services
 - Database (11g)
 - ADF Application Module
 - Middle tier ADFm AM as a Service
 - JPublisher
 - Middle tier POJO with JPub mappings
 - TopLink DBWS
 - Middle tier POJO with JAXB mappings (coming)

Database-native Web Services



Middle-tier Data Service





When Do Native Services Play?

- When we prefer to use SOAP/HTTP to connect
- When we want to avoid adding another server
 - Zero deploy services

- Less moving parts



When Do Native Services Play?

- a word of caution

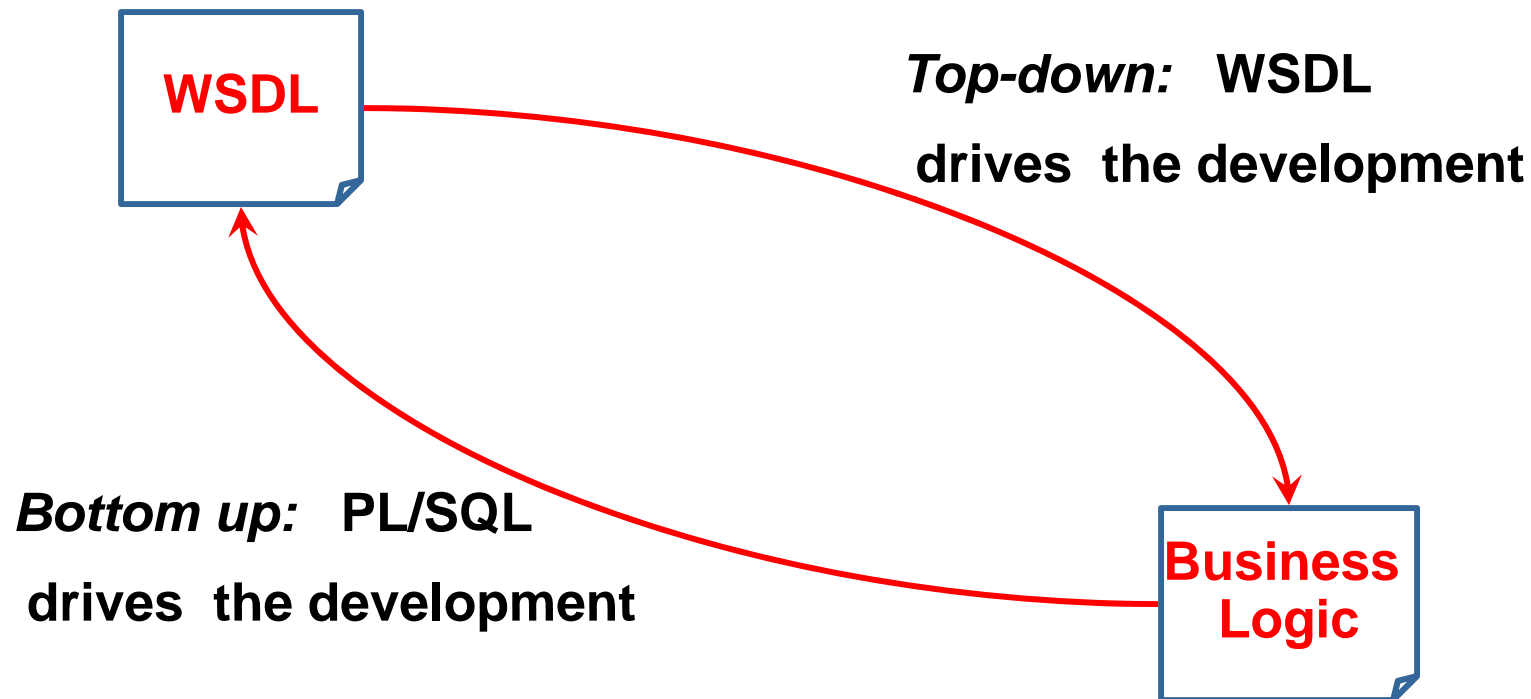
- Less moving parts ✓
- Less integration into the SOA infrastructure 📁
 - Where are my services?
 - Application Server management console (EM)
 - Service registry
 - How are my services protected?
 - Policy manager



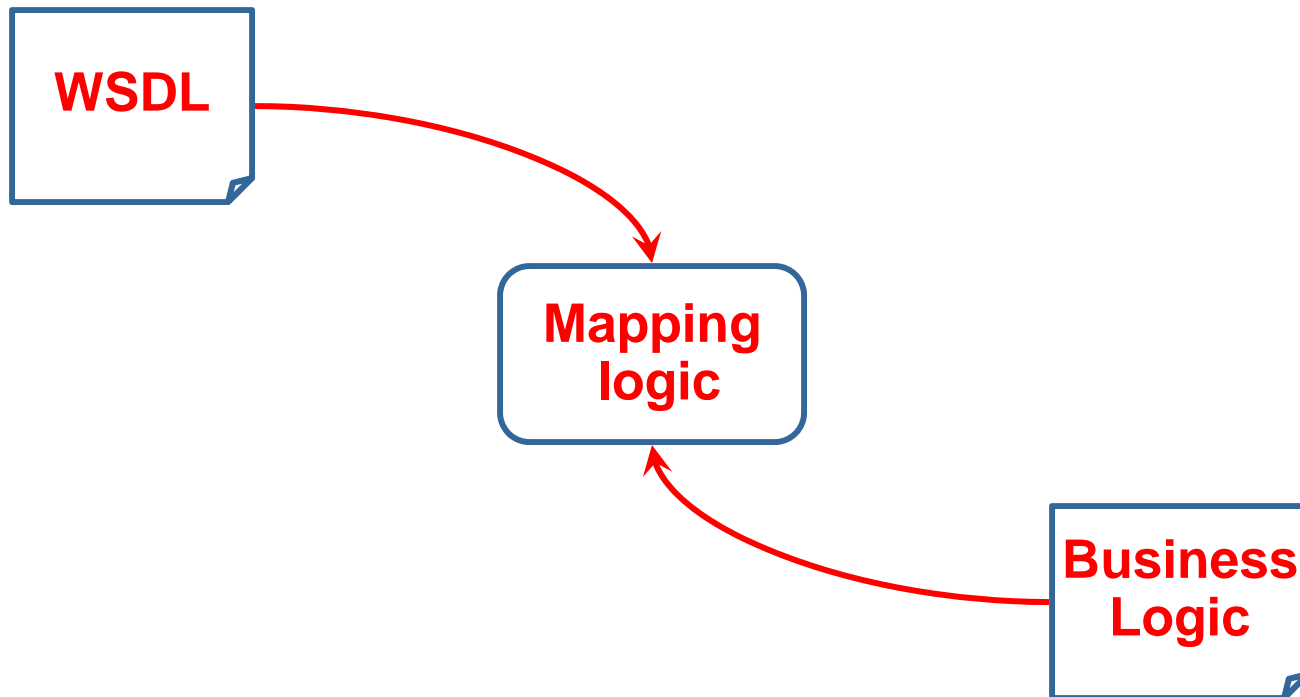
Demonstration summary

- Database tier
 - Native Web Services
- Middle tier
 - JPublisher Web Services
- Finding my services

Top Down & Bottom Up Service Development



Meet in the Middle Service Development





Designing business services top-down

- processes
 - usually event driven
 - Customers
 - Suppliers
 - Partners
 - Employees
- ‘business algorithms’
 - Building up a result from multiple systems



Publishing the legacy bottom-up

- Stick with existing interfaces
 - Business-oriented?
 - Technology-oriented?
 - Design for re-use
- Protect the data
 - Thoughtful interface design
 - Tight input validation
 - Good error & exception reporting



Choices in exposing PL/SQL services

- Platform
 - DB native
 - Middleware
 - ADF, JPub, Toplink DBWS
 - Bottom up or meet in the middle
 - ...or meet in the database
 - Consider wrapping packages in service-oriented way



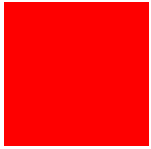
How to Choose

- Mix & Match or pick a platform?
- Factors
 - Skills
 - Architecture
 - Database business logic vs middle tier business logic
 - Re-usable business logic vs re-developed business logic
 - Management
 - Unified catalog
 - Unified governance



Resources

- Mastering SOA White Paper Series
 - <http://www.oracle.com/technology/tech/soa/mastering-soa-series/index.html>
- Chris Muir's web services paper at ODTUG 2009
 - <http://one-size-doesnt-fit-all.blogspot.com/2008/06/events-and-publications.html>
- Gerard Davison's blog
 - <http://kingsfleet.blogspot.com/>



**QUESTIONS
& ANSWERS**