



# JavaOne™

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## TAKE SOA TO THE ENTERPRISE LEVEL

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TS-7558



**Understand how enterprise SOA works and  
Learn how to compose service based  
applications by consuming business entities**

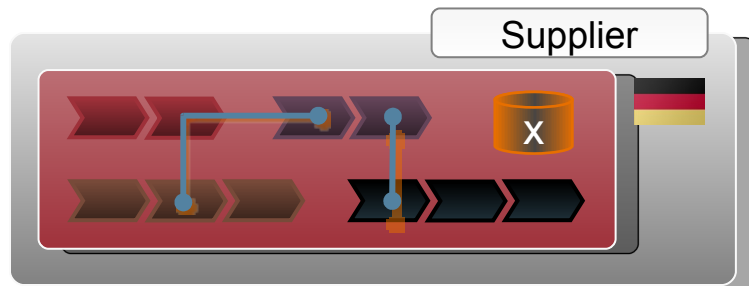
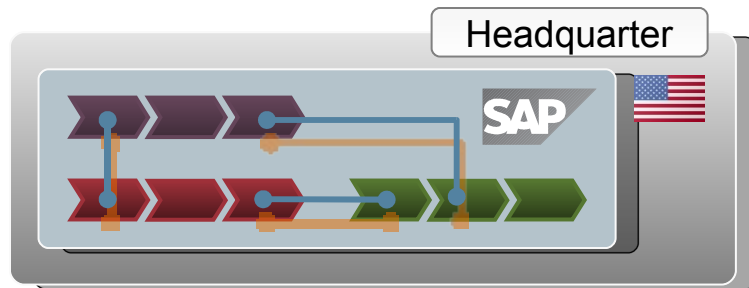


**GOAL**

# Agenda

- **Enterprise SOA in a Nutshell**
- **Define Enterprise Services**
- **Explore Enterprise Services**
- **Develop Composite Applications**

# IT follows Business Requirements



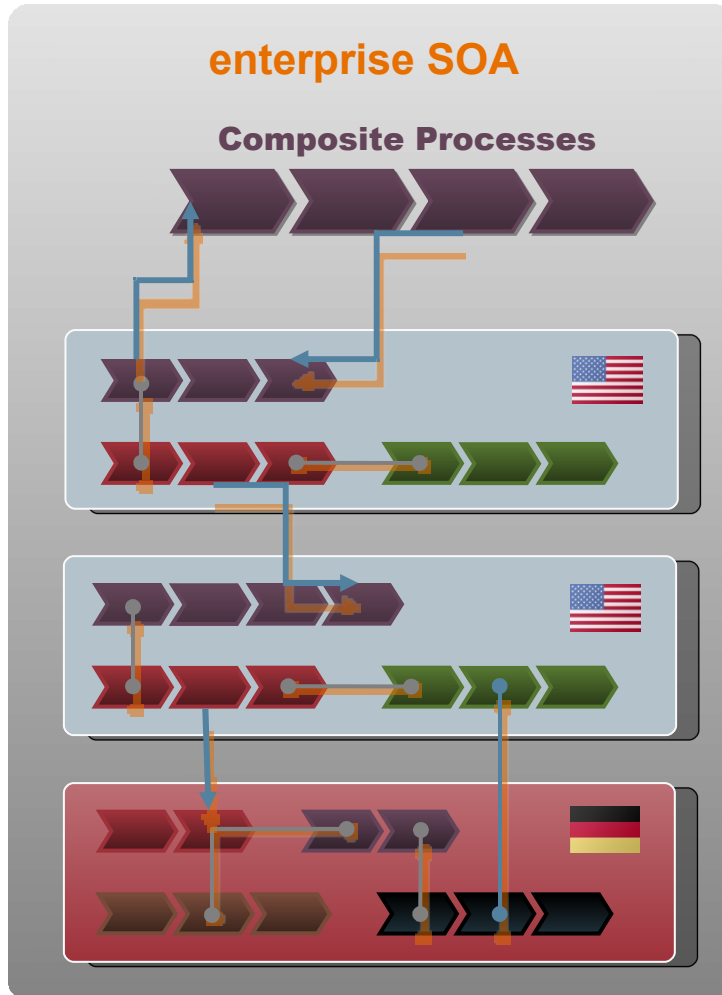
## > Business Driver

- Globalization and internationalization
- Differentiation through innovation
- Collective intelligence

## > “Classical” Enterprise Applications

- Integrated enterprise applications provide core business processes for operational excellence
- Integrated but self-contained data models
- Flexibility limited to system boundaries

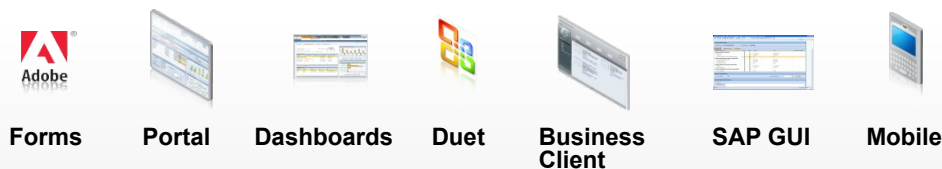
# IT follows Business Requirements



## > Enterprise SOA

- Provides needed flexibility to follow business requirements
- End-to-end processes with common semantics
- Harmonized data model and message based integration
- Leverages existing investments
- Technical interoperability based on open internet standards

## User Interface



## Enterprise SOA Consumption

**Business Process Composition & Management (BPM)**

**UI Composition**

**Service & Event Composition**

**Information Composition**

**SOA Design Governance**



**Enterprise Services**

## SOA Middleware

**SOA Management**

**Service Bus**

## Enterprise SOA Provisioning

**Service & Event Enablement**

**Connectivity & Integration**

## Service-enabled Applications

**Process Components**

Order Mgmt.

**SAP Applications**

**Platform Components**

MDM

BI

**SAP NetWeaver**

**Customer & Partner Applications**

**Non SAP & Legacy**

**Business Partner**

# Investment Approval Process

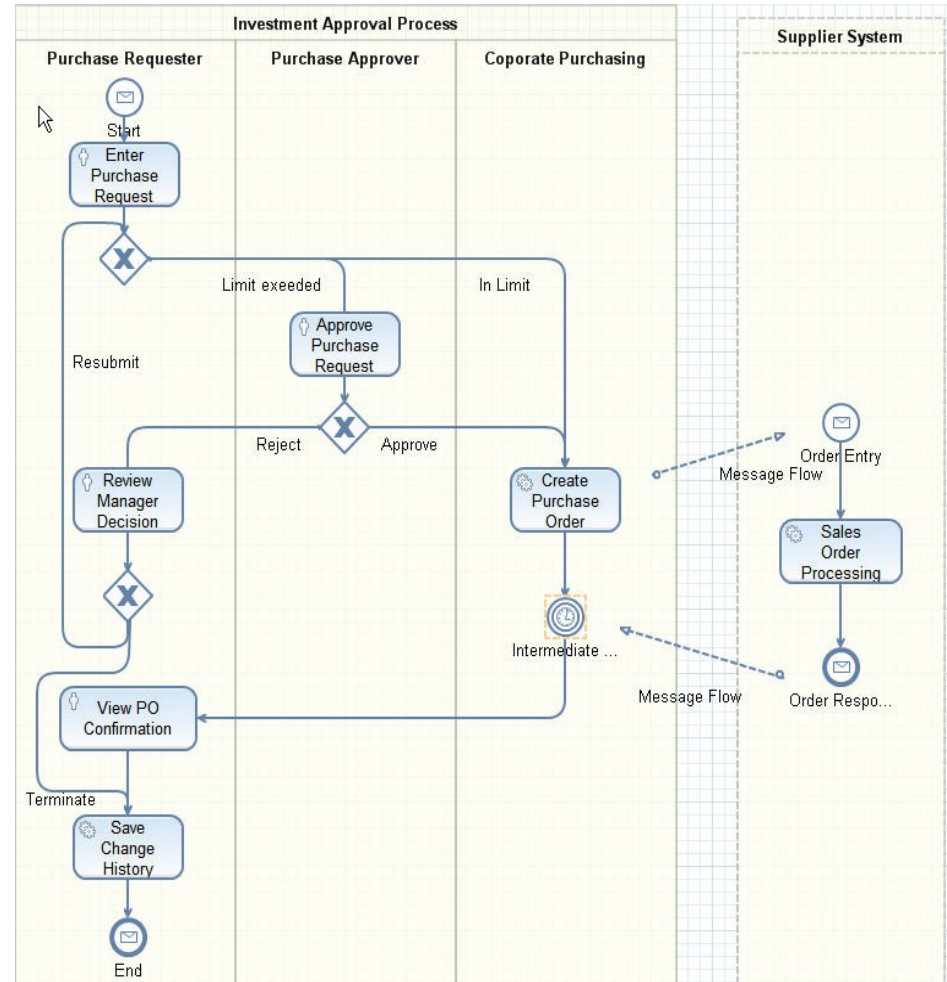
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DEMO

# Composite Application Example

## Investment Approval Process

- Purchase Requester
  - Enters purchase request
- Business Rule
  - Derives manager for approval based on investment volume, exchange rate, and country
  - Ensures company policies
- Purchase Approver
  - Review order, approve or reject and in case of rejection add reason and propose acceptable solution
- Purchase Requester
  - Update purchase order or terminate process
- Corporate Purchasing
  - Create PO in ERP including supplier integration
- Eventing for PO release
  - Improves process transparency

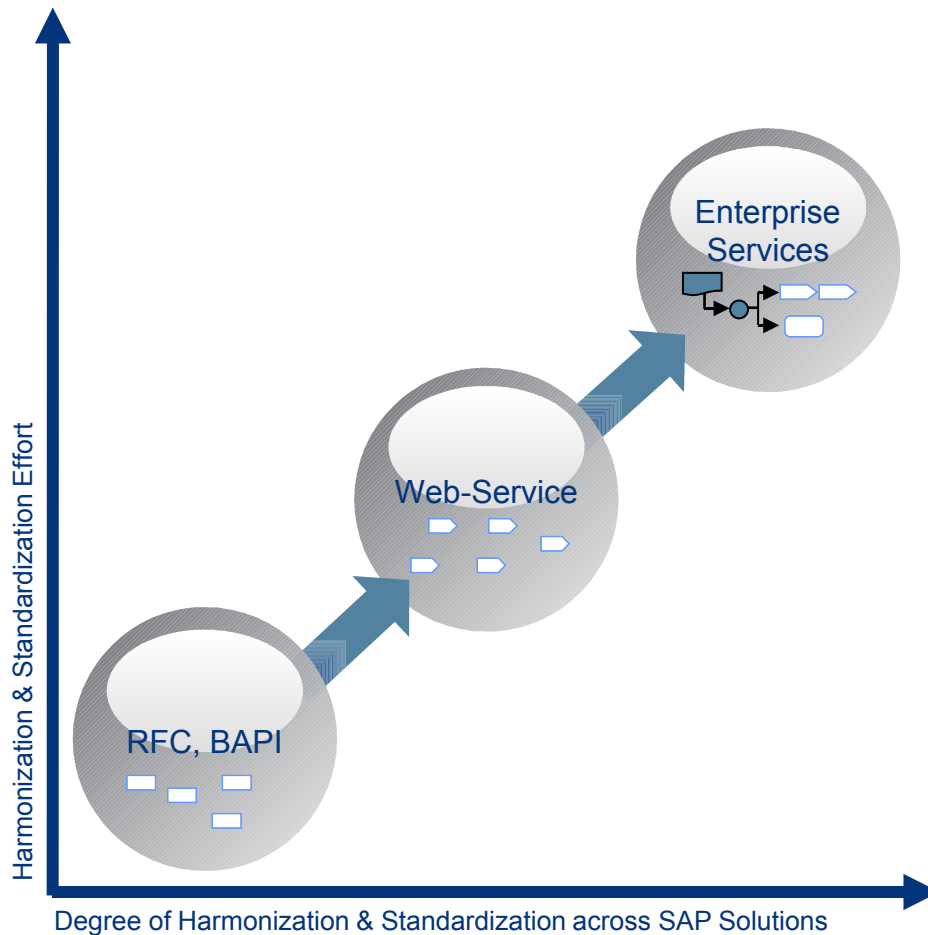




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# Definition of Enterprise Services



## Characteristics of Enterprise Services

Business functionality

Enterprise Model, GDTs

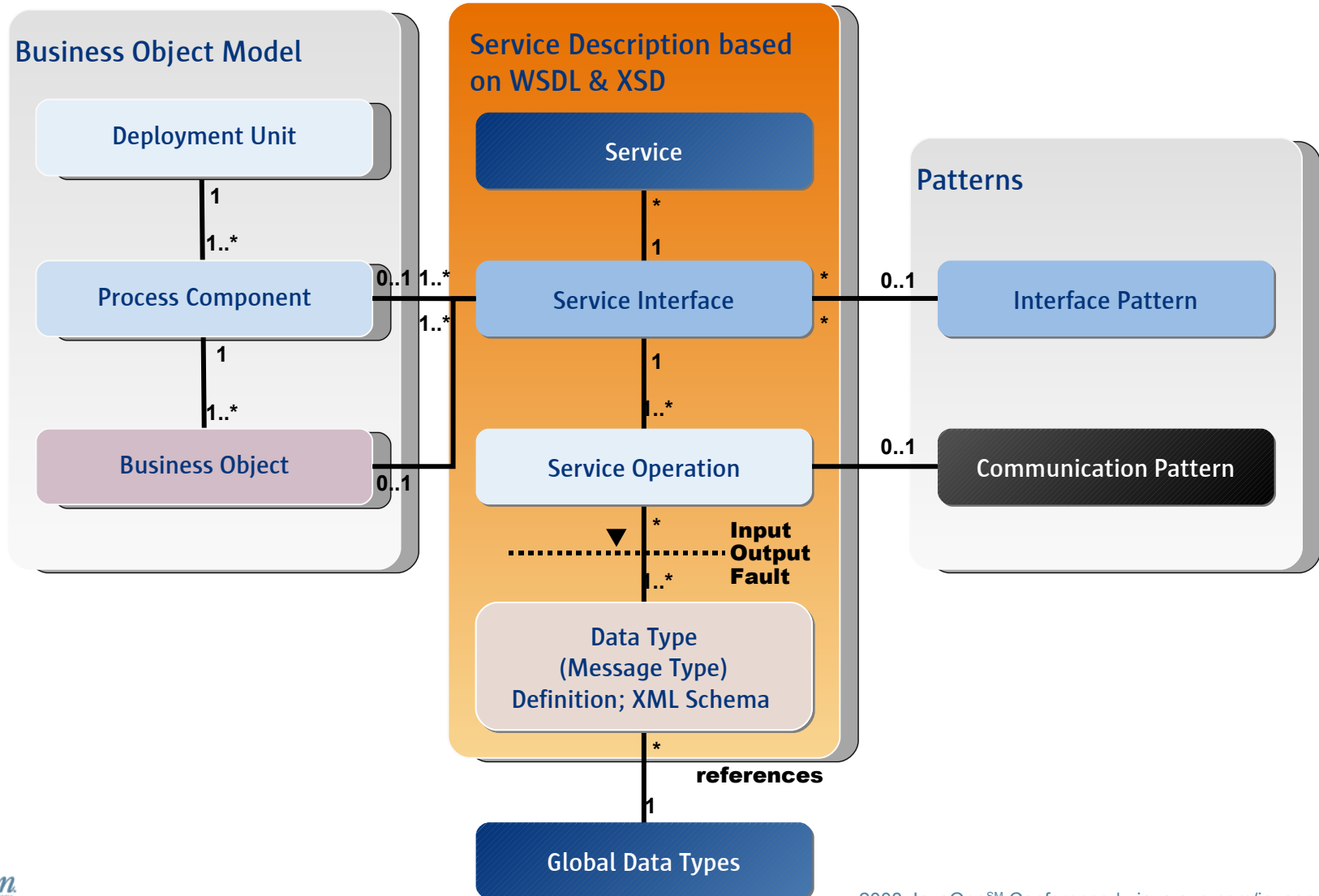
ESR

Interface Stability

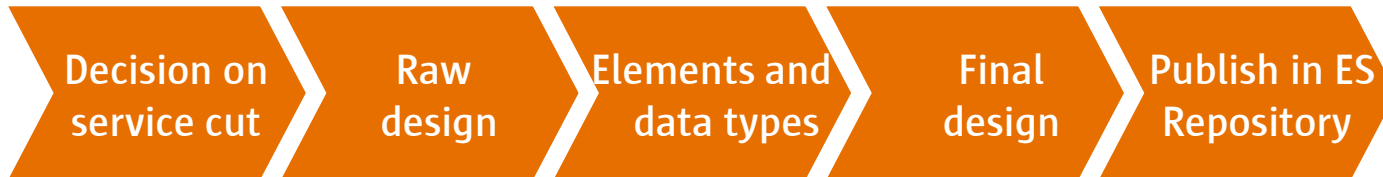
Documentation

Open standards

# Enterprise Service Meta Model



# Enterprise Services Definition Process

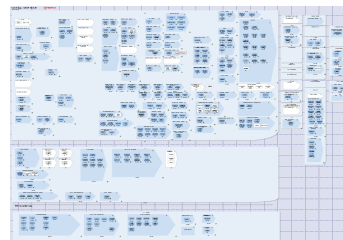


## ➤ Semantic and Technical Interoperability

- Harmonized enterprise model: same understanding between service consumers and service providers
- Standard transport protocols (e.g. TCP/IP), security standards (e.g. web services security), standardized formats (e.g. XML, SOAP)

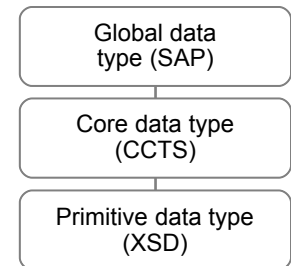
## ➤ Architectural Guidelines and Standards

- Common modeling and implementation guidelines are the basis for every (new) service development



## ➤ Global Data Types

- Company-wide defined data types based on international standards ISO 15000-5 and UN/CEFACT CCTS
- Semantic building blocks for interfaces

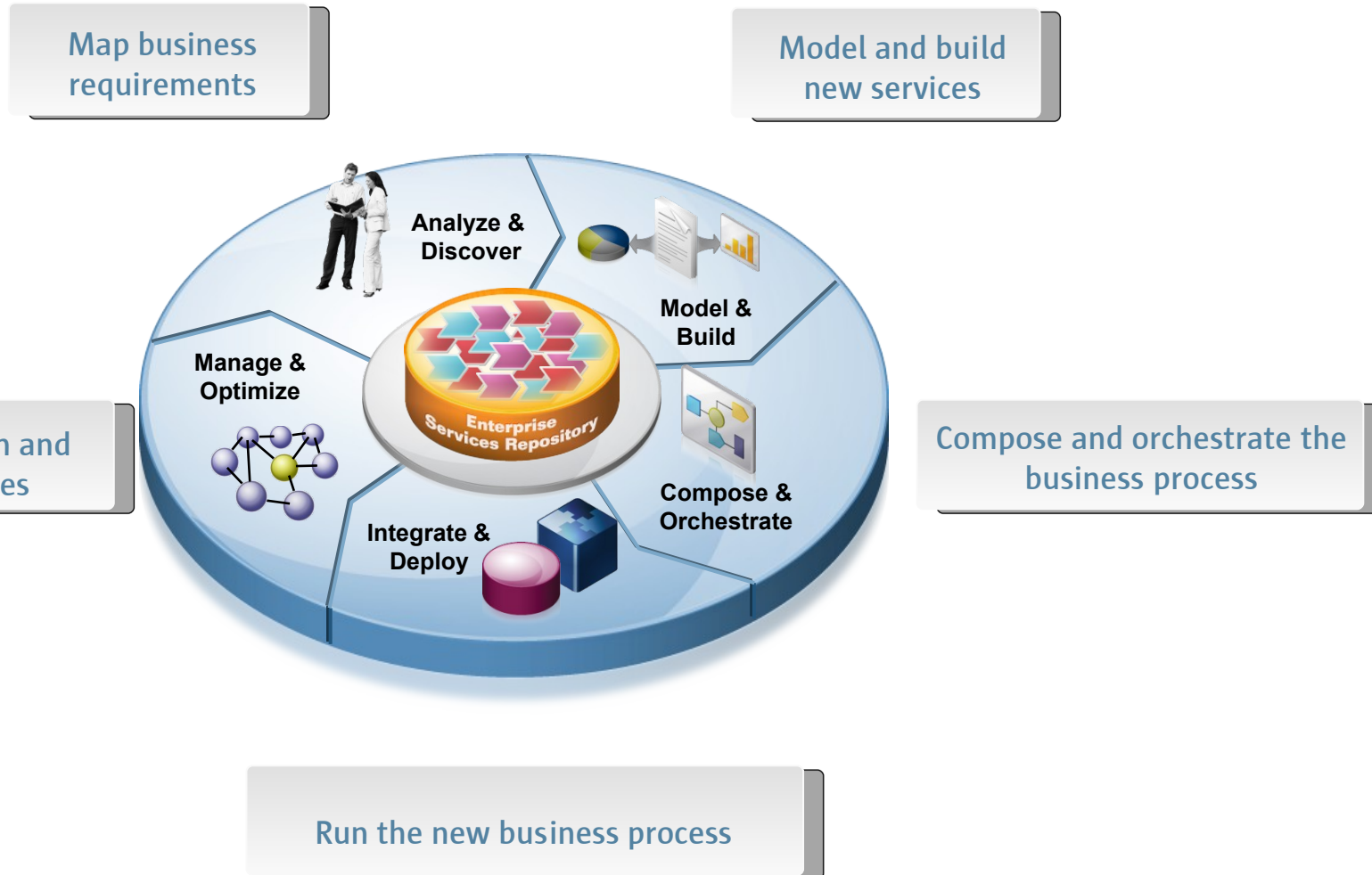


## ➤ Enterprise Services Repository

- Central repository in which service interfaces and enterprise services are modeled and their metadata is stored and managed throughout the life cycle



# Enterprise SOA Development Lifecycle



# Enterprise Services Repository

DEMO

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# Find and Discover Enterprise Services

Browse on ES workplace  
and search in Services  
Registry

Test-drive with access to SAP  
backend test systems



## ENTERPRISE SERVICES INDEX

### Process Components

- [Process Components in ESM CRM 6.0](#)
- [Process Components in ESM ERP 6.03](#)
- [Process Components in ESM FS 200](#)
- [Process Components in ESM SCM 5.0](#)
- [Process Components in ESM SCM 5.1](#)
- [Process Components in ESM SRM 6.00](#)

**Services Registry**

Search:  Browse

**Browse Services**

Select Classifications:  System:  [X]

Views	Type
• ECC	DeploymentUnit
• SAP Applications without HCM	DeploymentUnit
• SAP Foundation	DeploymentUnit
• Business Partner Data Management	ProcessComponent
• Customer	BusinessComponent
• CustomerBasicDataQueryResponse_in	ServiceDefinition
• CustomerEPCAddressBasicDataNameAddressQueryResponse_in	ServiceDefinition
• CustomerEPCAddressQueryResponse_in	ServiceDefinition
• CustomerEPCQueryResponse_in	ServiceDefinition
• CustomerSimpleNameAddressQueryResponse_in	ServiceDefinition
• CustomerSimpleNameQueryResponse_in	ServiceDefinition
• CustomerSimpleNameAddressQueryResponse_in	ServiceDefinition
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• CustomerSimpleNameAddressQueryResponse_in	ServiceDefinition
• CustomerSimpleNameQueryResponse_in	ServiceDefinition

**Details About CustomerBasicDataQueryResponse\_in**

WSDL Not Type Name: CustomerBasicDataQueryResponse\_in

Internal Name: ECC\_CUSTOM00000100

Namespace: http://sap.com/xi/APL/SE/Global

Logon ref: No data is available

WSDL: http://sap.com/xi/APL/SE/Global

Documentation URL: http://sap.com/xi/APL/SE/Global

Description: Read customer basic data by ID

**SAP NetWeaver™ WS Navigator**

Service Test | Test Scenario

1 Service | 2 Operation | 3 Input Parameters | 4 Result

4 Previous | Next

**Service Information**

Interface Name: http://sap.com/xi/APL/SE/Global/CustomerBasicDataQueryResponse\_in

Operation: CustomerBasicDataQueryResponse\_in

WSDL URL: http://sap.com/xi/APL/SE/Global/CustomerBasicDataQueryResponse\_in

Port Name: CustomerBasicDataQueryResponse\_inSoapBinding

Timeout: 60

Execution Parameters

**Parameters**

Reset

- CustomerBasicDataQuery\_sync
- CustomerBasicDataSelectionBy:
  - CustomerID:
  - schemaID:
  - schemaAgencyID:
  - schemaAgencySchemeID:
  - schemaAgencySchemeAgencyID:
  - SampleContent:

Evaluate Web Service Definition  
and technical documentation



# ES Workplace and Services Registry

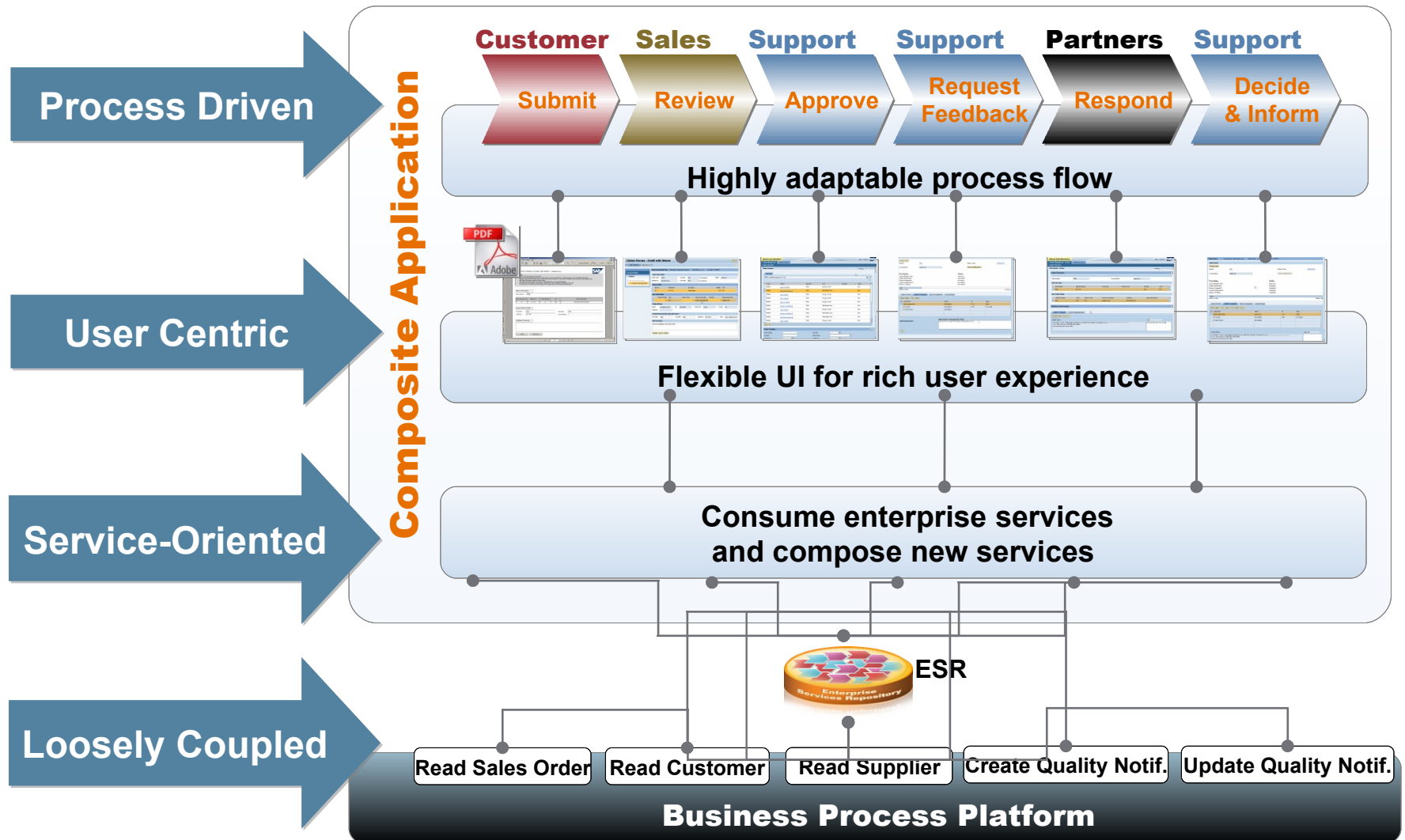
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# Composite Design Principles



# Composition of Enterprise Services

## ➤ Consumer-driven Service Consumption

- Enterprise services are not aware of the context of their usage
- Transformation into the domain of the client

## ➤ Decoupling of Consumer From Service Providers

- Abstracting from backend systems, WSDL as contract
- Loosely coupled, non invasive
- Relying on service enablement, own lifecycle

## ➤ Model-driven Development

- Rapid development of client and service consumption
- Reuse and componentization
- Enterprise service discovery, consumption and management

# UI and Service Composition

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# DEMO

# Service Enablement and Composite Applications

- Composition enables innovation across service enabled business systems
- Rapid modeling of composite applications and consumer specific consumption of enterprise services
- Simple discovery and governance of composition-ready services
- Productized enterprise services expose the functionality of the business process platform



# Summary

Enterprise SOA is reality

- Based on SOA standards
- Business semantics to realize end-to-end business processes
- Rich content provided by service enabled backends
- Composition of service based applications

# For More Information

## ➤ Related Sessions

- TS-5748 Composite Application Design Patterns

## ➤ Meet the experts at the SAP Booth in the JavaOne Pavilion

## ➤ Explore SAP's enterprise service portfolio at <https://www.sdn.sap.com/irj/sdn/esworkplace>

## ➤ SAP Developer Network (SDN) <https://www.sdn.sap.com/irj/sdn/ce>





# THANK YOU

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