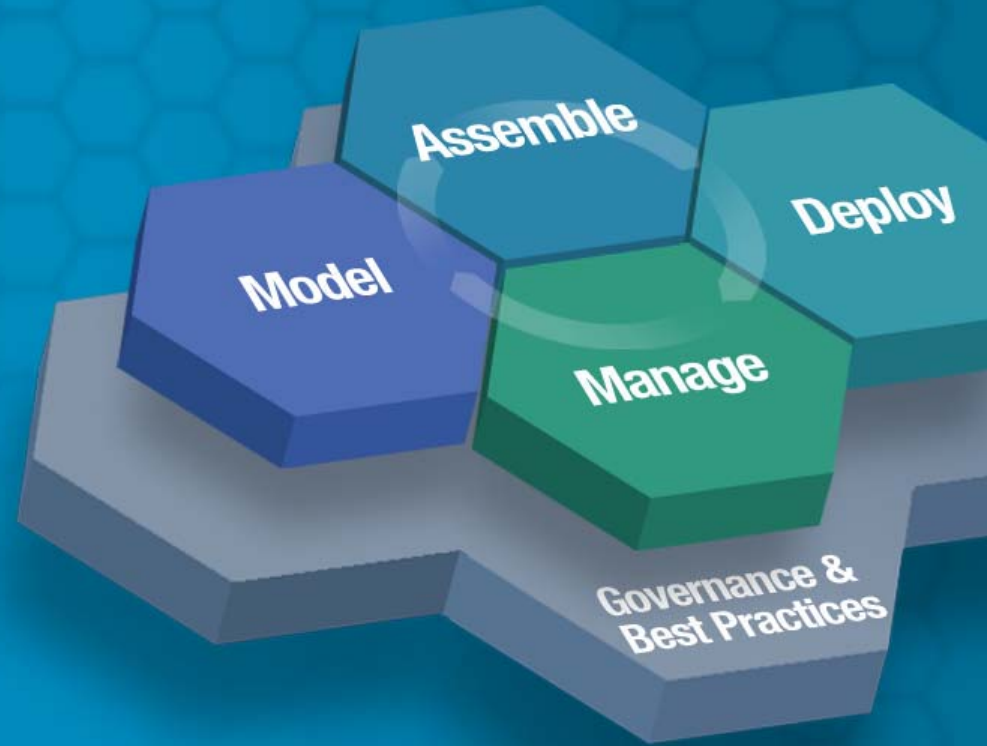
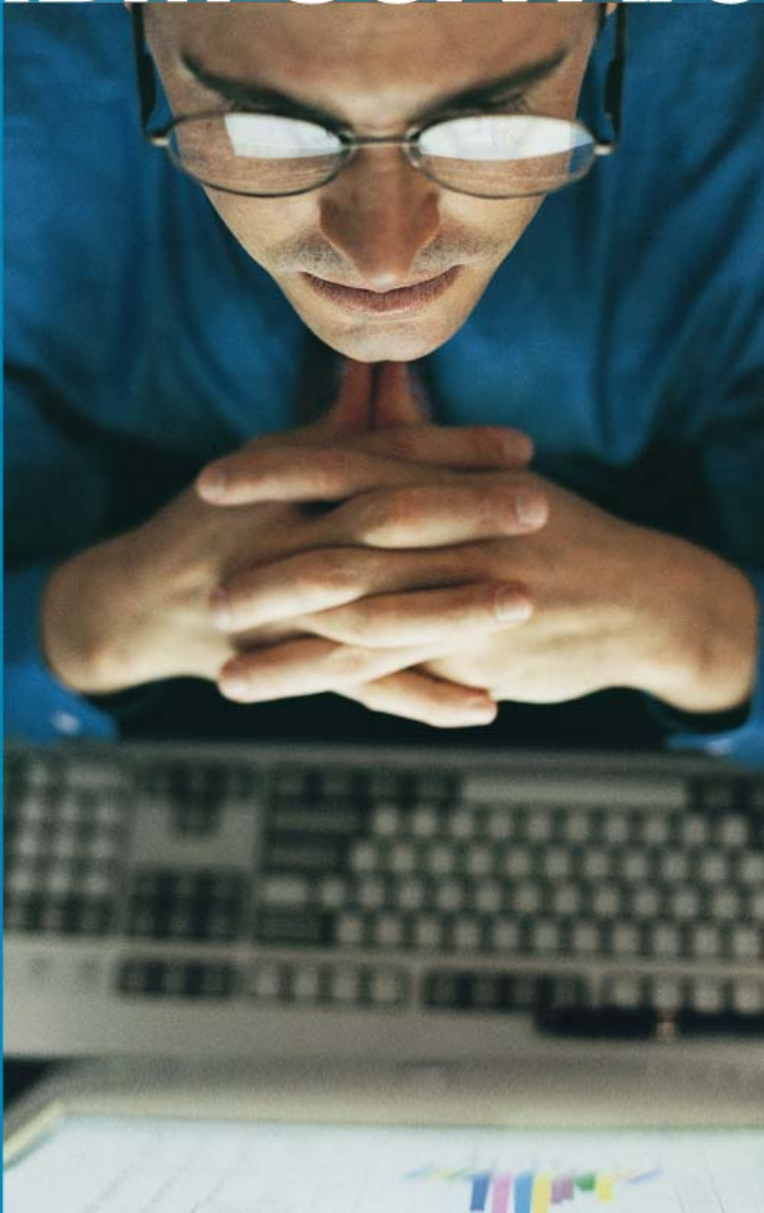


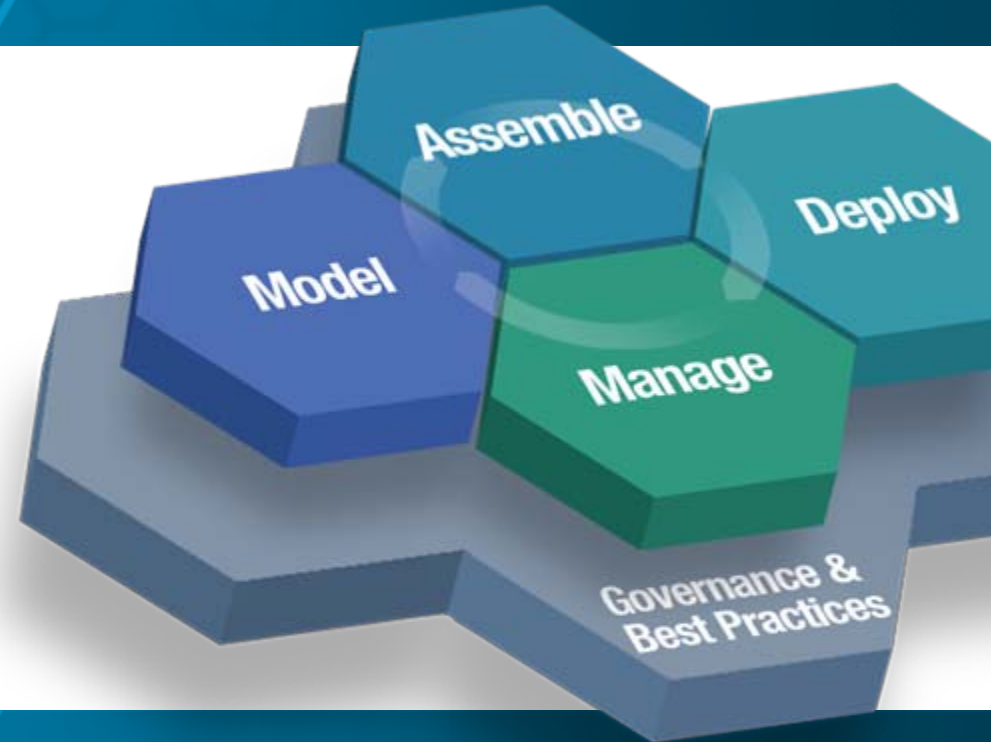
# IBM SOA Architect Summit



SOA on your terms and our expertise

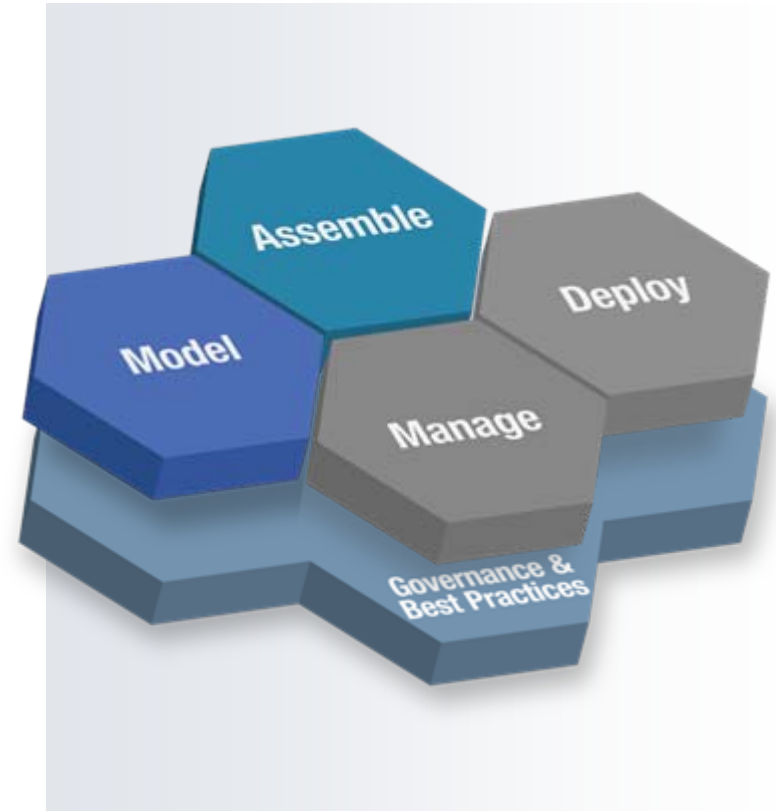
# Model and Assemble: Business Driven Development

**A Presentation for the  
Enterprise Architect**

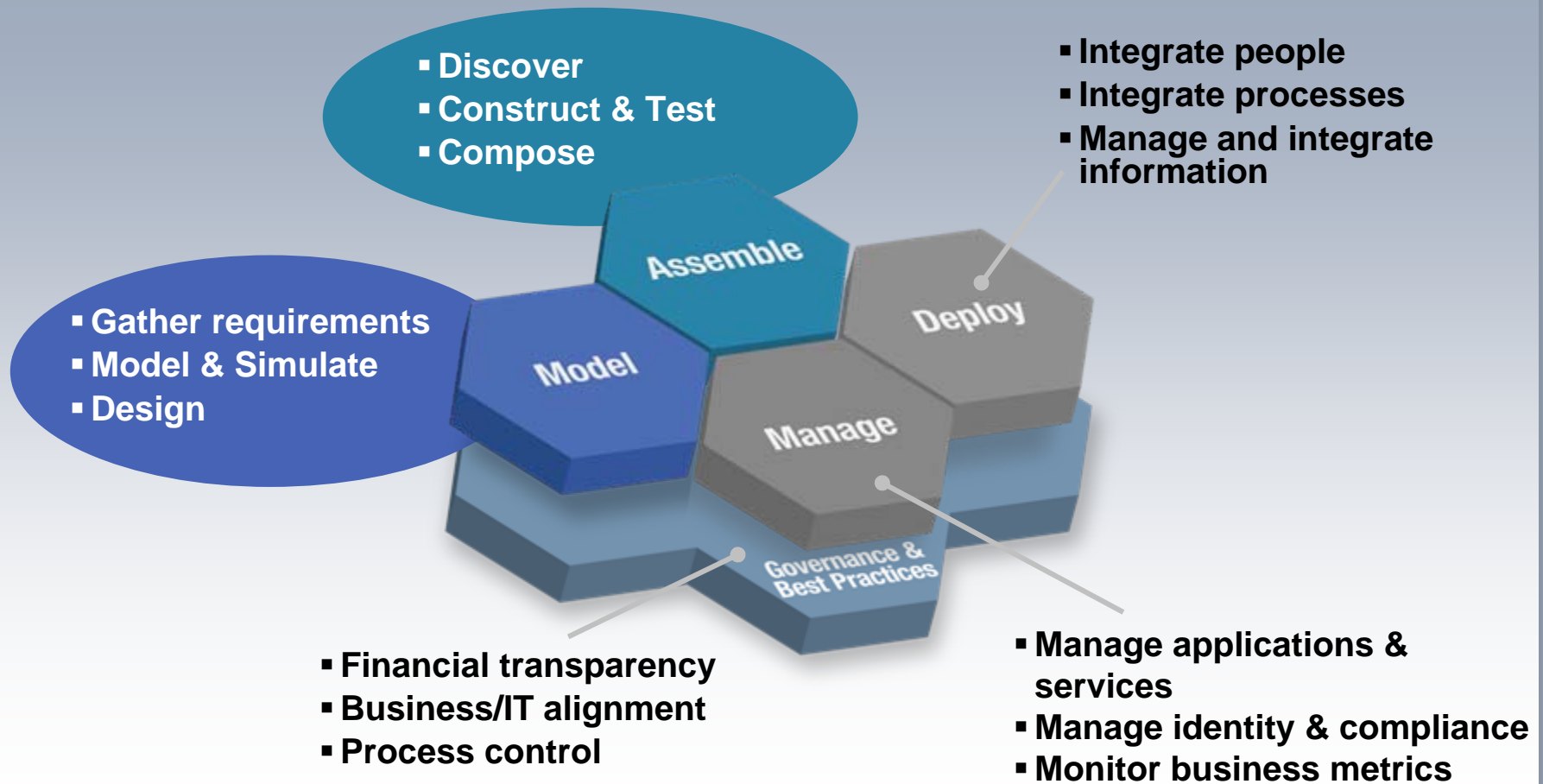


# Agenda

- Business Driven Development for SOA
- Software Development Platform for Business Driven Development and SOA
- Summary



# The SOA Lifecycle

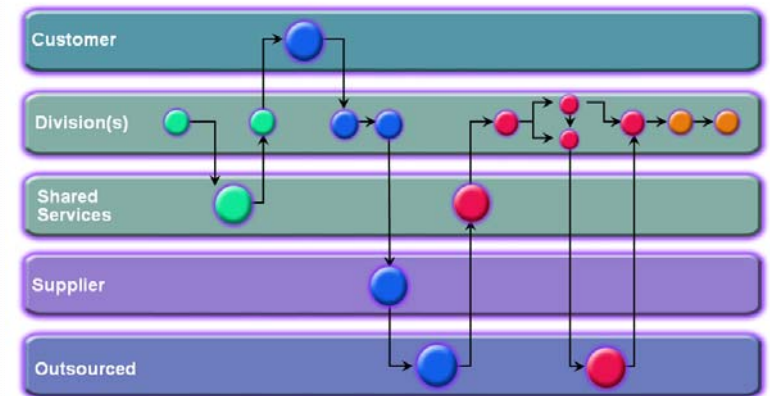




# But ... Tools & Technology Applied Correctly *Can Pave the Way for Successful Business Innovation*

- Standards (including open source) for interoperability
- Self-defined, loosely coupled interfaces
- Tools to visualize and integrate existing assets
- Model Driven Architecture (MDA)
- Declarative specifications and languages
- **Architecture is the key to successful business innovation**

## Case Study: Procure to Pay Process



# What is Business Driven Development?

## *Development as a Business Process*

An integrated approach to software development that aligns line-of-business, development and operations teams to improve business performance

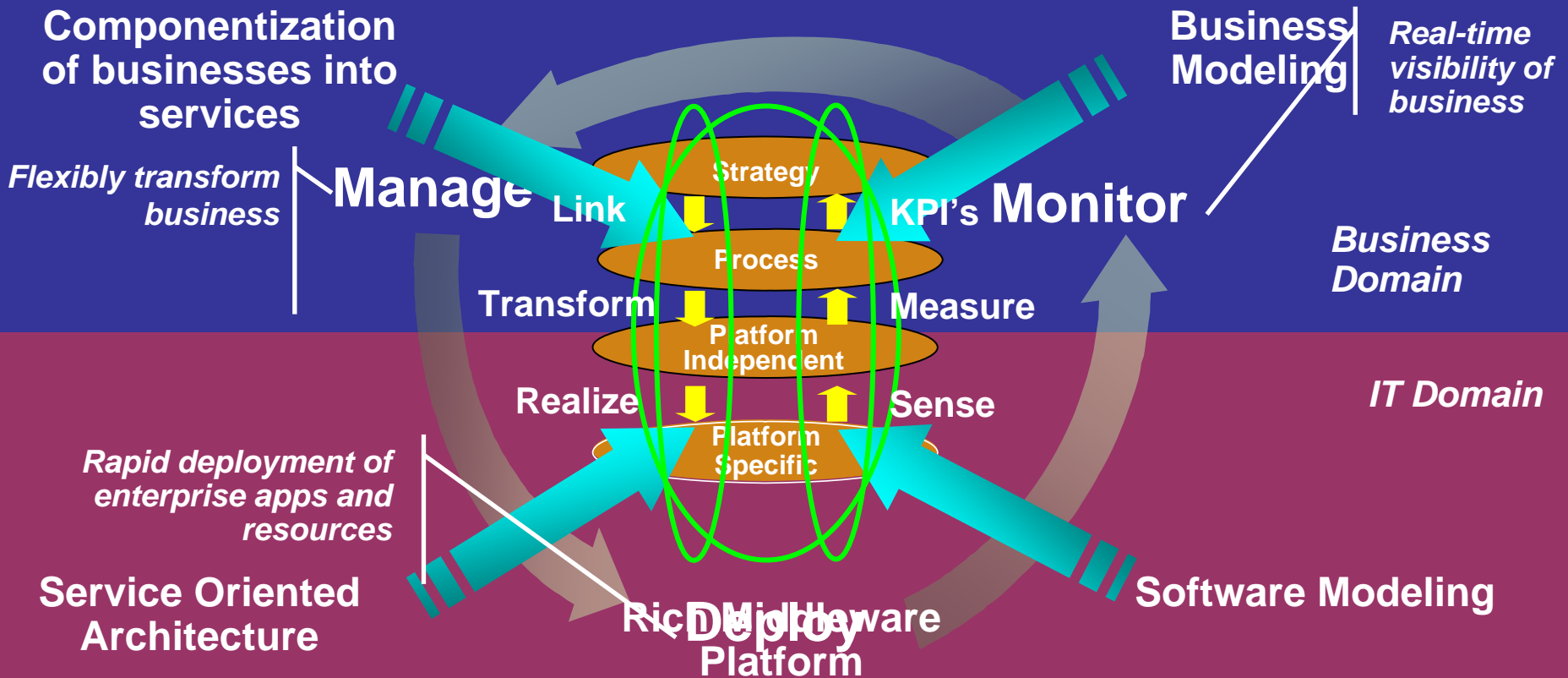
- Align Technology and Business priorities
- Improve efficiency and responsiveness
- Address Governance and Compliance requirements



**Software development becomes a driver of competitive advantage**

# The IBM Vision for Business Driven Development

***Business applications will be deployed, monitored and managed through the manipulation of multi-level models***



**Value: Accurately and reliably capture and translate business intent into IT solutions**



# Three Key Concepts

*To Adapt for Business Driven Development*

## Service Oriented Architecture

### *Focus on Flexibility and Reuse*

- *An approach for designing and implementing distributed systems that allows a tight correlation between the business model and the IT implementation*

## Model Driven Architecture

### *Focus on Efficiency and Quality*

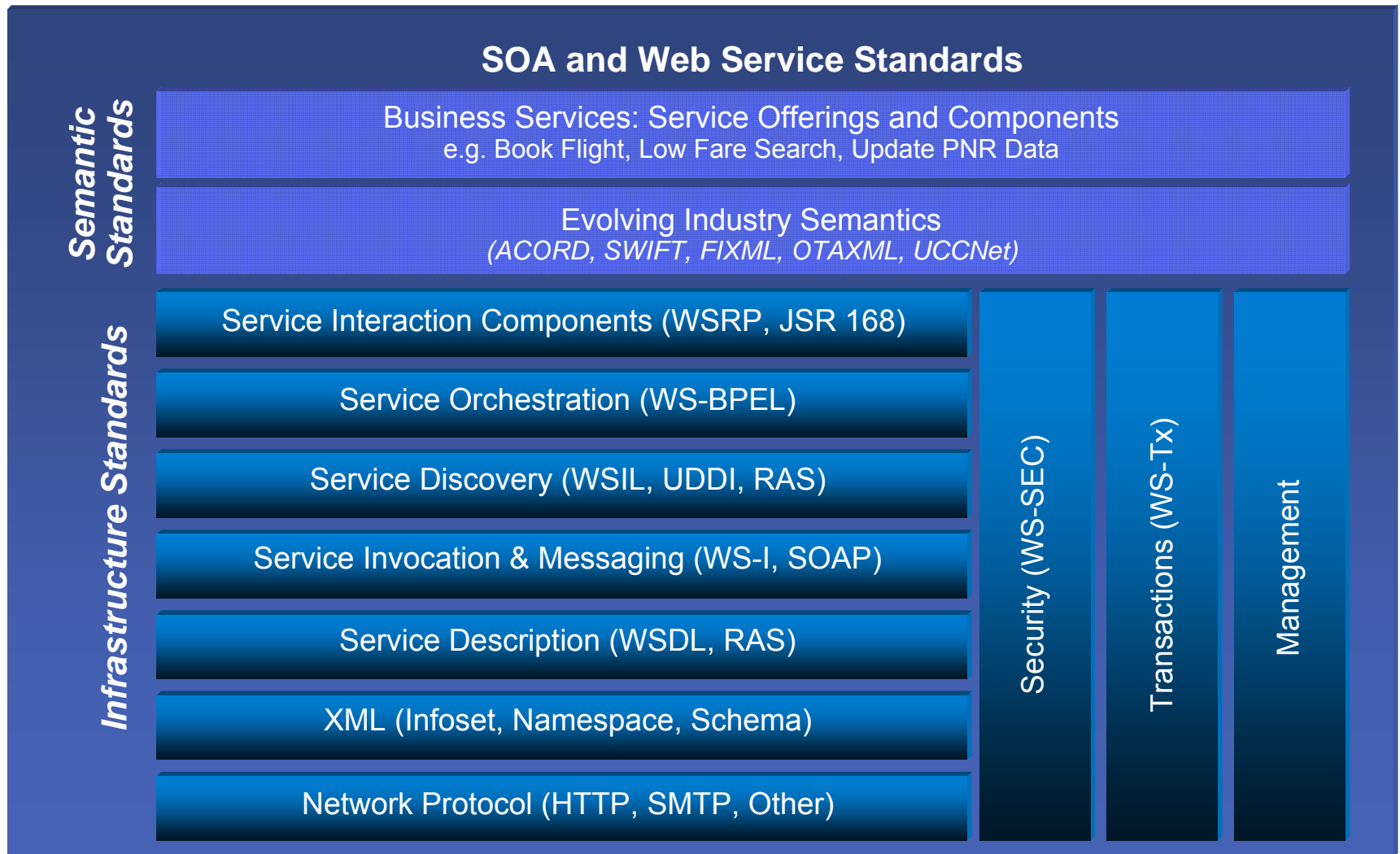
- *A style of enterprise application development and integration based on using automated tools to build system independent models and transform them into efficient implementations*

## Business Innovation and Optimization

### *Focus on Responsiveness and Optimization*

- *A monitoring and management approach that leverages integrated resources to achieve aligned, accountable, and action-oriented business operations*

# Key Standards for SOA



# Business Driven Development

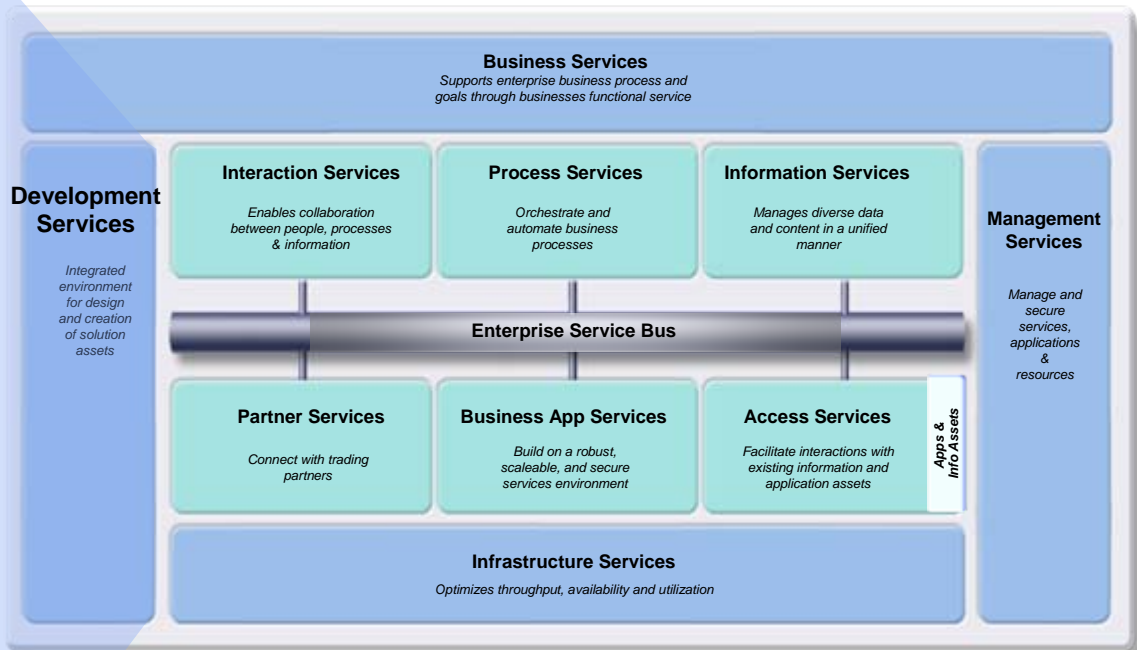
## Key Development Phases

### Model

- Business Level Modeling
- Service Oriented Modeling and Design

### Assemble

- Construction of Services
- Assembly of Services (new and existing)
- Choreography of Services



# SOA Programming Model

## ■ Design

- Focus on business design modeling, simplification, and role-based collaboration
- Use of declarative policy to control execution behavior and relationships

## ■ Invocation

- Loosely-coupled call-style and event-driven interconnection of services with built-in support for topology transparency, mediation, and brokering featuring standards-based interoperability

## ■ User Interaction

- Dynamic support for people integration into the business design

## ■ Composition of Business-level Applications

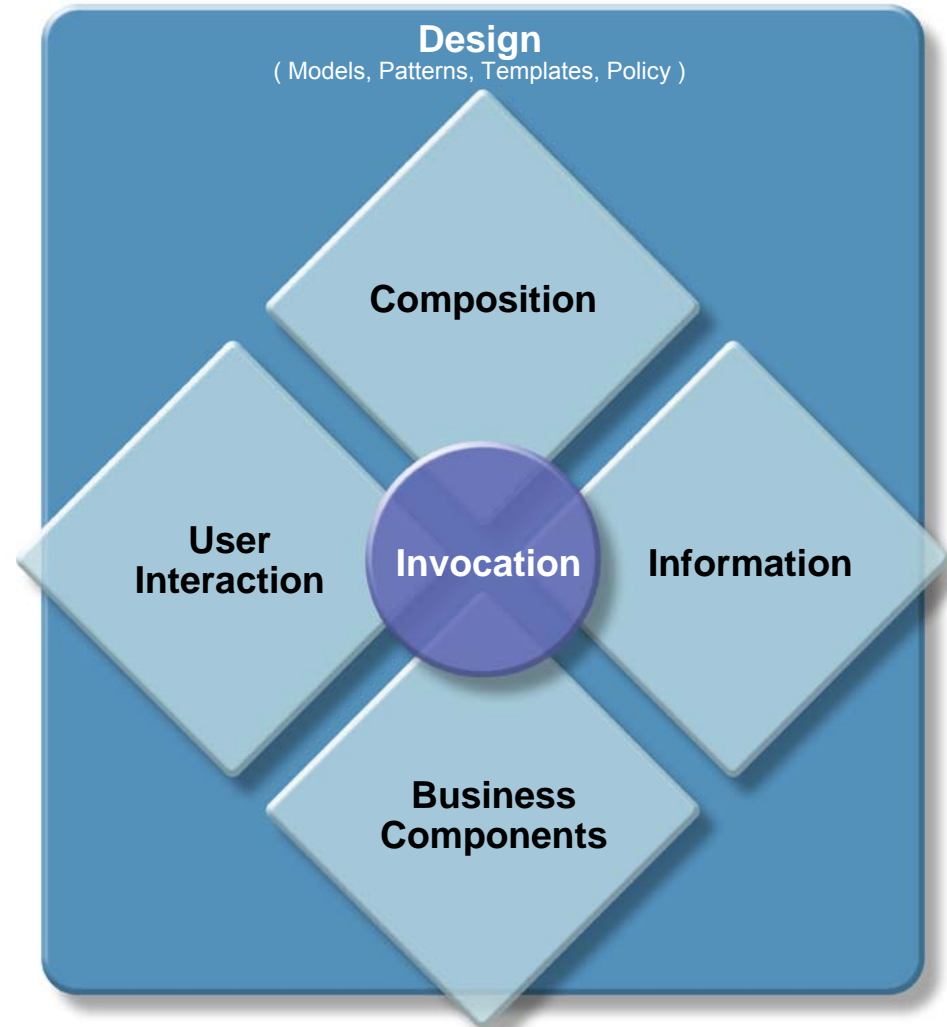
- Wired assembly of services to form business-level applications, workflows, and business orchestration

## ■ Information

- Built-in access to service state, disconnected service-data exchange, information composition and transformation

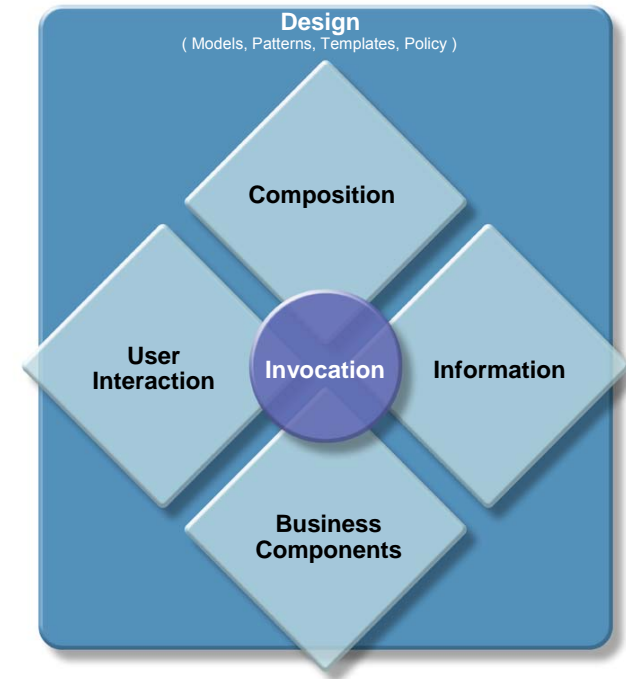
## ■ Business Components

- Composable and reusable services



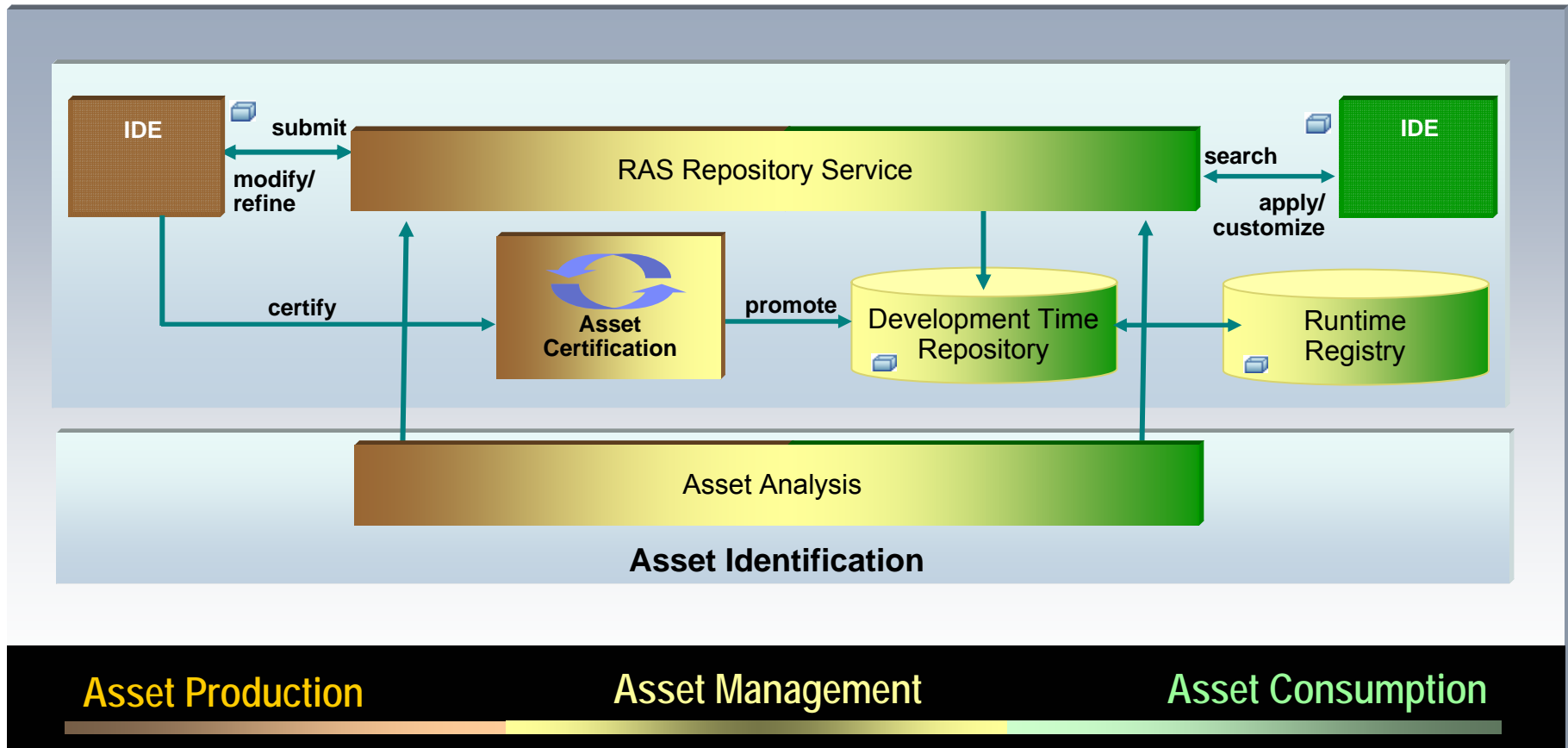
# SOA Programming Model Supported by Key Standards

- **JavaServer Faces**
  - Standard way to construct user interfaces for web applications, JSR 168 portlets, etc.
  - MVC based User Interaction Framework
- **Service Component Architecture (SCA)**
  - Component services programming model which provides a consistent framework for assembling solutions
  - Jointly developed/endorsed by IBM, BEA, IONA, Oracle, SAP, and Sybase
  - Apache Open Source Incubator Project
    - <http://incubator.apache.org/tuscany/>
- **Service Data Objects (SDO)**
  - Uniform (technology independent) way to represent data
  - Provides *Single abstraction* (common API) across JDBC ResultSet, JCA Record, XML DOM, JAXB, Entity EJB, CMI (for MQ messages), and so on
  - Co-developed by IBM and BEA
- **Business Process Execution Language (WS-BPEL)**
  - Standard way to choreograph business processes
  - Standardization through OASIS



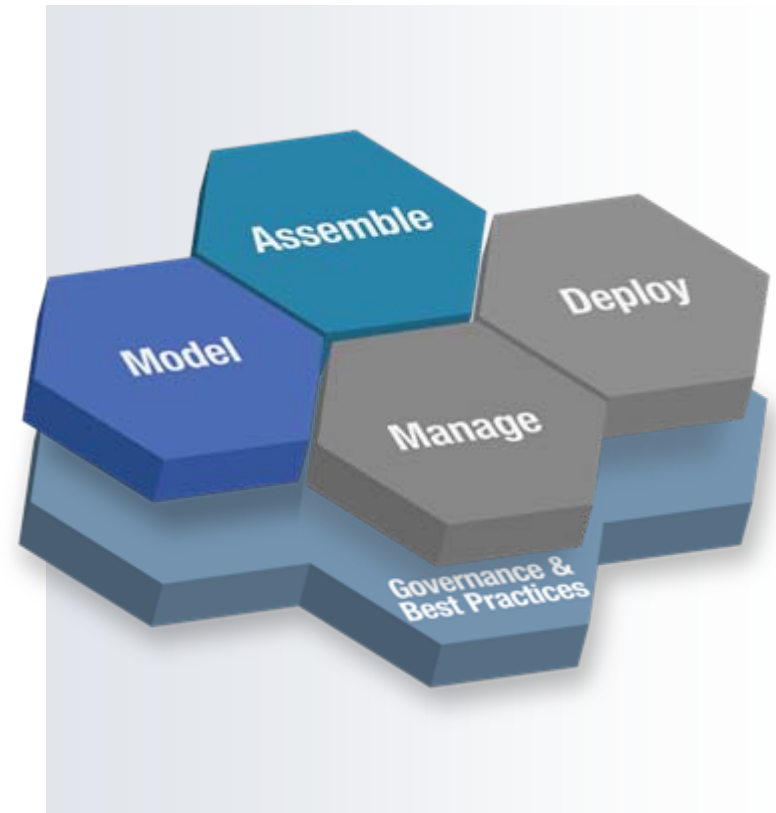
# Development-time Service Lifecycle

- At development time services are:
  - Identified, Produced, Consumed, and Managed

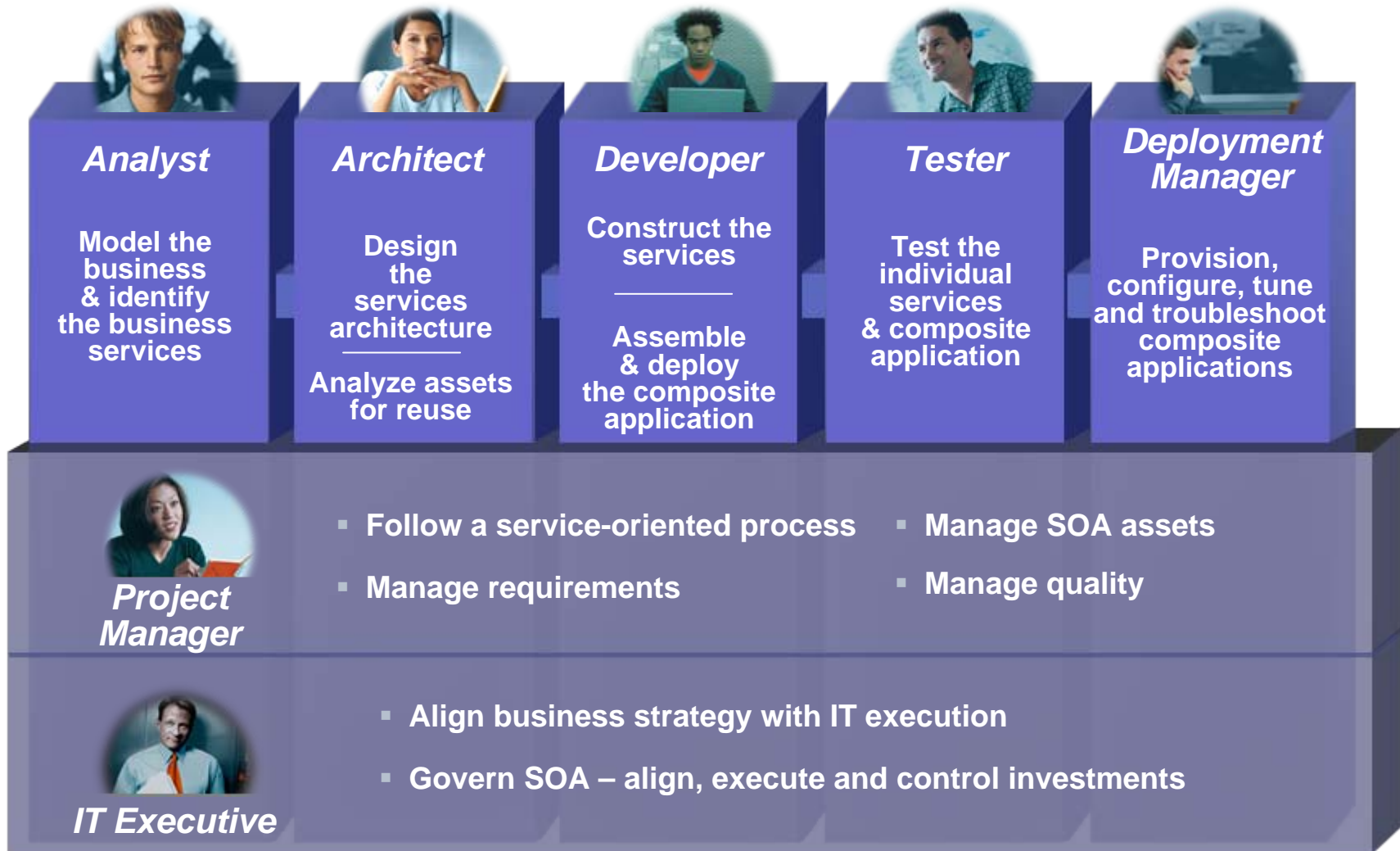


# Agenda

- Business Driven Development for SOA
- Software Development Platform for Business Driven Development and SOA
- Summary

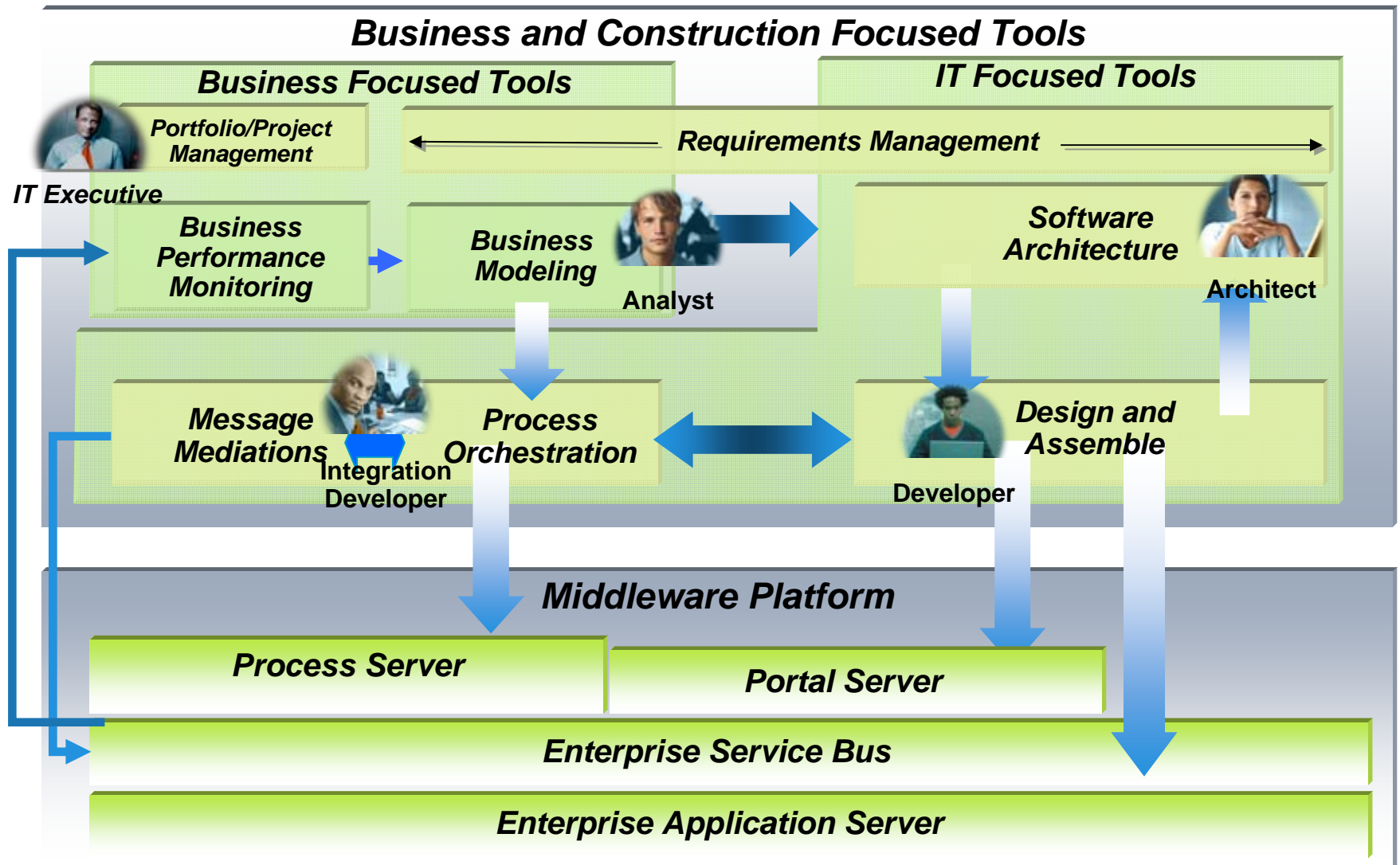


# The IBM Rational Software Development Platform





# Business Driven Development Scenario

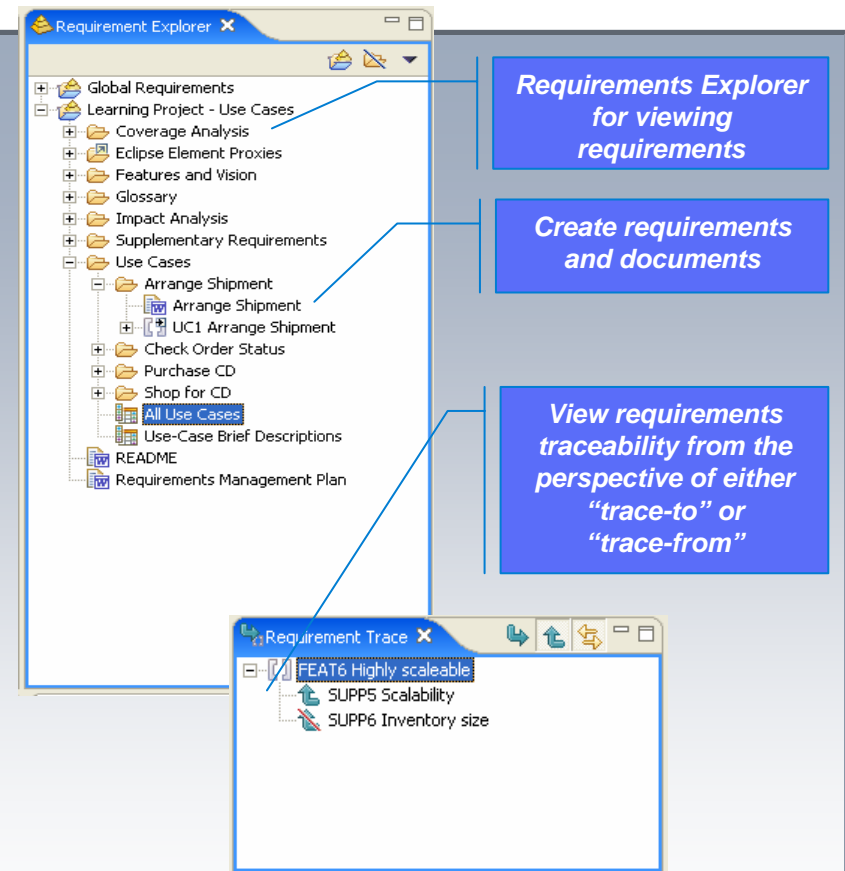


# Requirements Management

- Create Business Vision Documents
- Create Business Use Case Specifications
- Define/Document Business Rule, Business Goal Requirements
- Define detailed system requirements (use cases and supplementary requirements)
- Trace enterprise requirements to business processes and service implementations

## Customer Benefit:

- Document and capture business requirements
- Capture traceability relationships between elements in the application

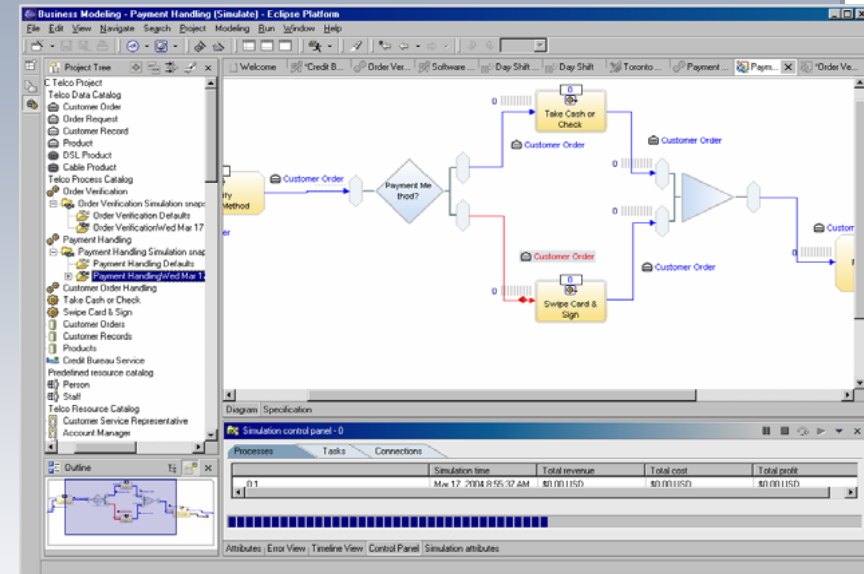


# Business Process Modeling and Analysis



Analyst

- Business analyst analyzes, designs, and simulates business process
- Model from a Business perspective
  - As is and to be modeling
  - Business service identification
  - Specification of business KPI's
    - e.g. Average time to open an account should be <18 hours
    - 80% or more of the total account opening requests should be approved
- Business-level simulation
  - Used to optimize business process by understanding Process Duration, Costing, ROI, etc.



## Customer Benefit:

- Business-level tools for modeling and simulation
- Describe business-level services in context of business improvement

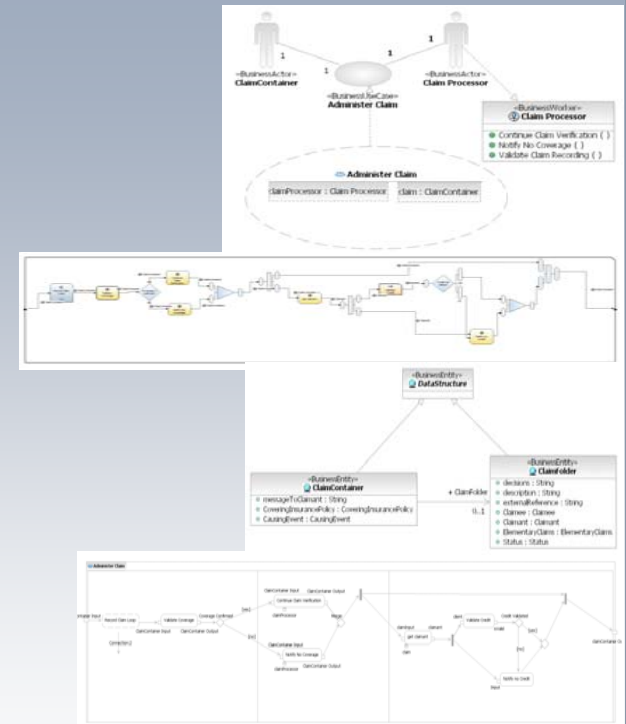


Architect

# Service Oriented Analysis, Modeling, and Design

- Business Process Model can be transformed and visualized as a UML model
  - Create the design model from the business process model
  - Understand the business intent
- IT service identification
  - Create design model for new services (top-down)
  - Identify existing components for reuse (bottom-up)
  - Meet in the middle (most common)
  - UML Profile for Software Services aids in designing software services
- Artifacts in Design Models can be transformed into service implementations

## Process



## Customer Benefit:

- Architecture and design for service implementations
- Automate application of design patterns
- Build transformations from analysis and design to implementation

# Business Process Choreography & Mediation

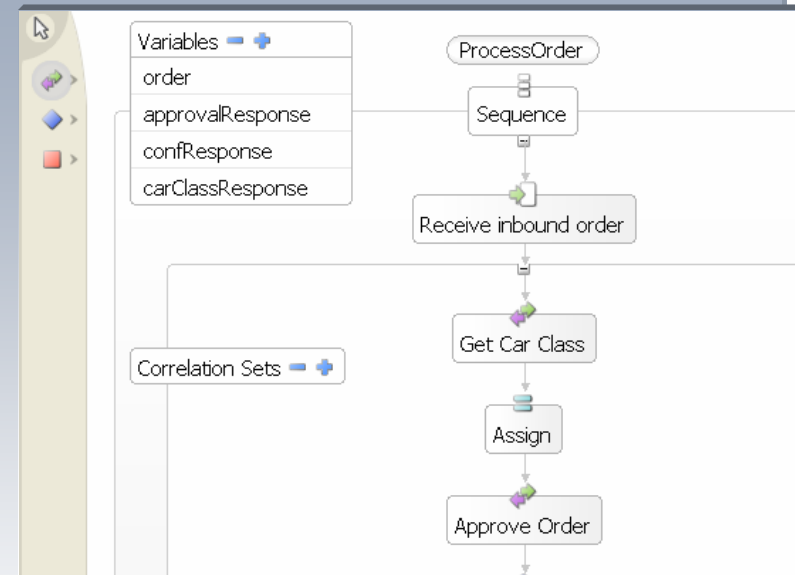


- Business Process Choreography is linking services together to form *deployable* business processes:
  - Deployable process model based on WS-BPEL
  - Both Flow and Event based Business Process can be modeled
    - *BPEL Editor (Flow based)*
    - *Business State Machine Editor (Event based)*
  - Choreography includes automated and human based services

- Mediation creation to transform/route service requests and responses

## Customer Benefit:

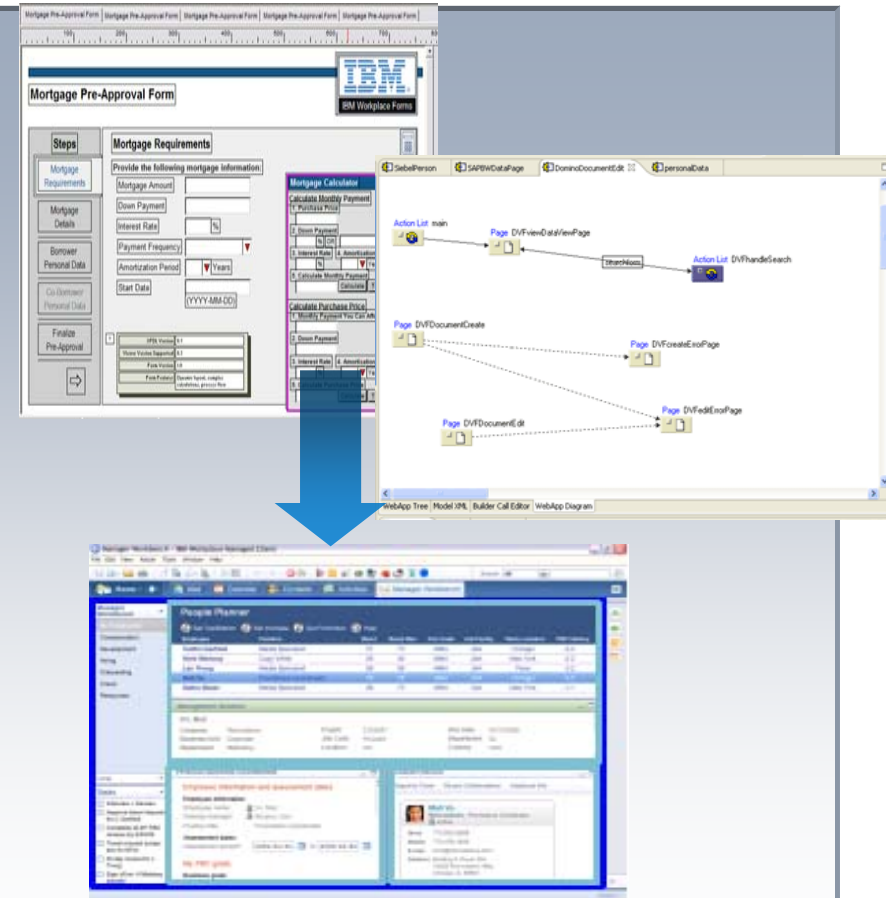
- Simplified, standards-based business process development
- Easily create mediations for routing/transforming requests between services





# User Interface Development

- Use automated tools to build portlets that expose business capabilities (services)
  - Portlet wizards to face J2EE applications with portal UI
  - eForms to extend user interactions beyond the Enterprise and offline
  - Custom-built “situational” applications to fill in missing capabilities
  
- Configure portlets into user interface compositions with role dependent access

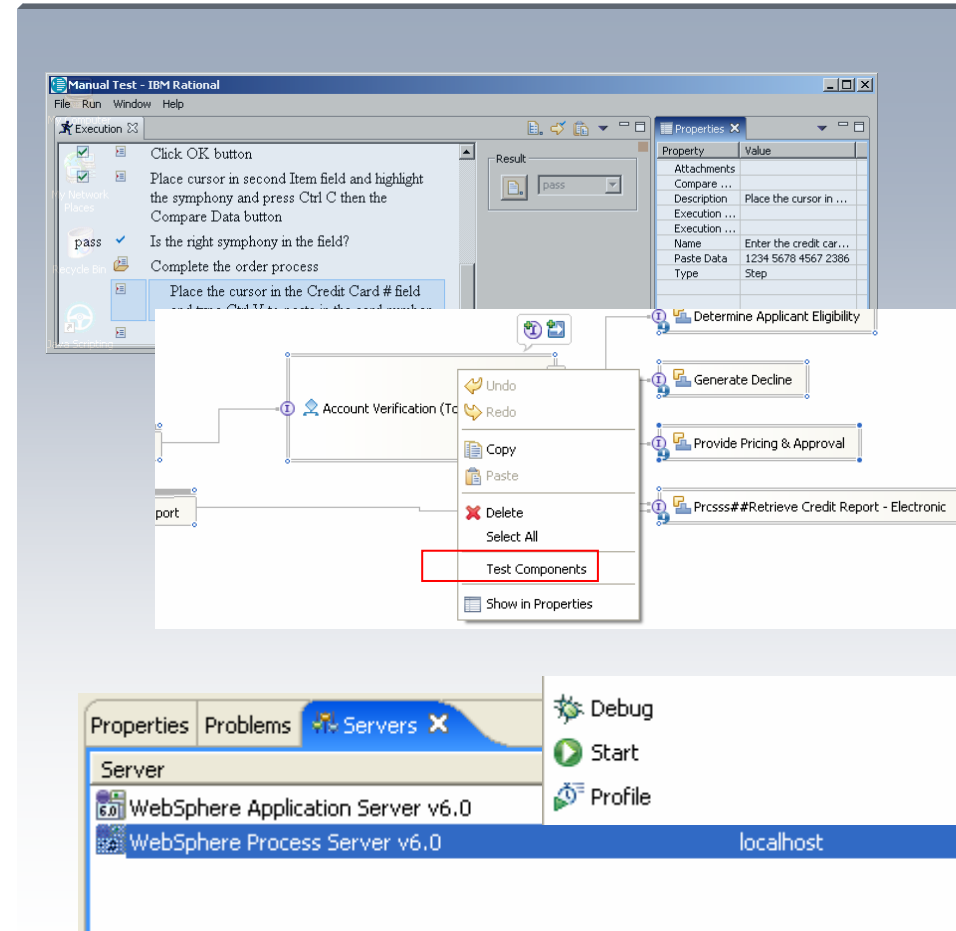


## Customer Benefit:

- Role appropriate user interface
- Only relevant portions of applications or services are exposed
- Rapid time to value

# Test Early, Test Often

- Testing needs to occur across Business Driven Development:
  - Component
  - Service
  - Business Process
  - Composite Application
  - Functional
  - User Interface
  - Performance
  - Regression
  - System
  
- Integrated set of test tools (that support SOA) and an integrated test environment is important



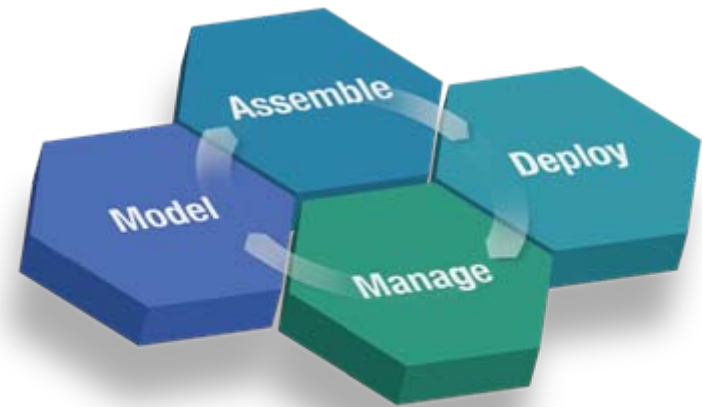
# SOA Governance for Business Driven Development

*A Governed Lifecycle End-to-end*

## Development Process

An approach and tools that effectively enable organizations to

- Determine the business priorities
- Execute development against those priorities
- Measure their effectiveness



## Development Infrastructure

In the context of a secure / governed infrastructure

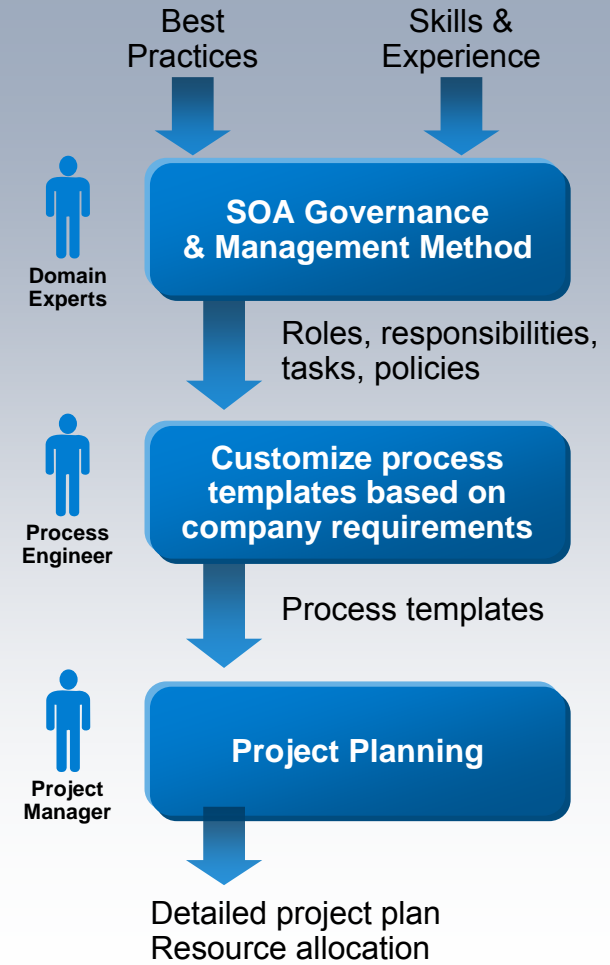
- Supports complex sourcing models (including geographically disperse)
- Provides development compliance (audit trails and security that is transparent to the developers)





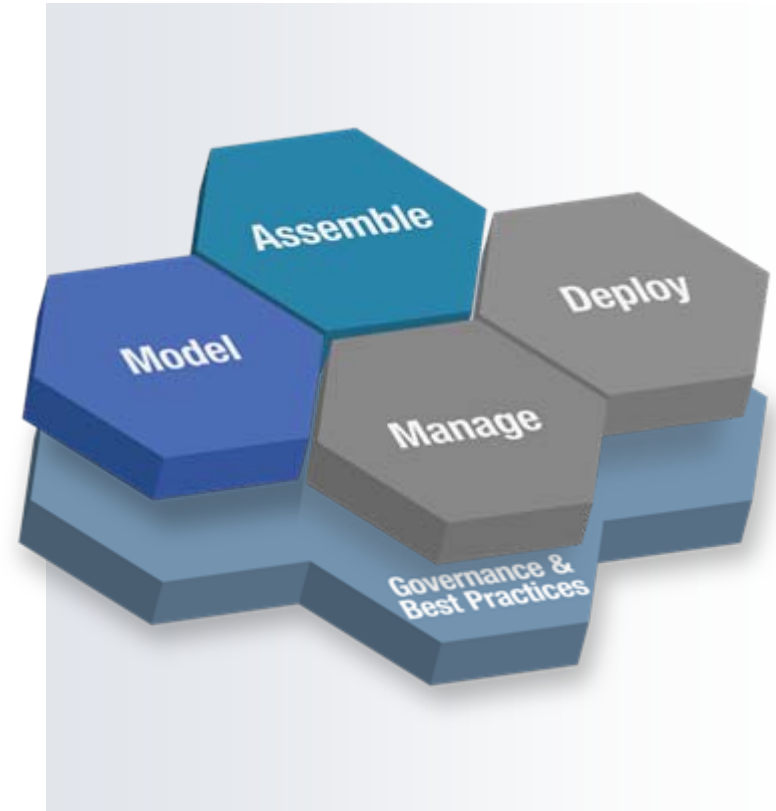
# SOA Governance for Business Driven Development

- IBM SOA Governance & Management Method
  - Defines Roles, Responsibilities, Tasks, and
  - Policies for SOA governance based on best practices and real-world experience
- Tools can be used to help automate the governance process
  - Method content can be customized content based customer requirements
- Manage SOA projects
  - Build project plans and allocate resources

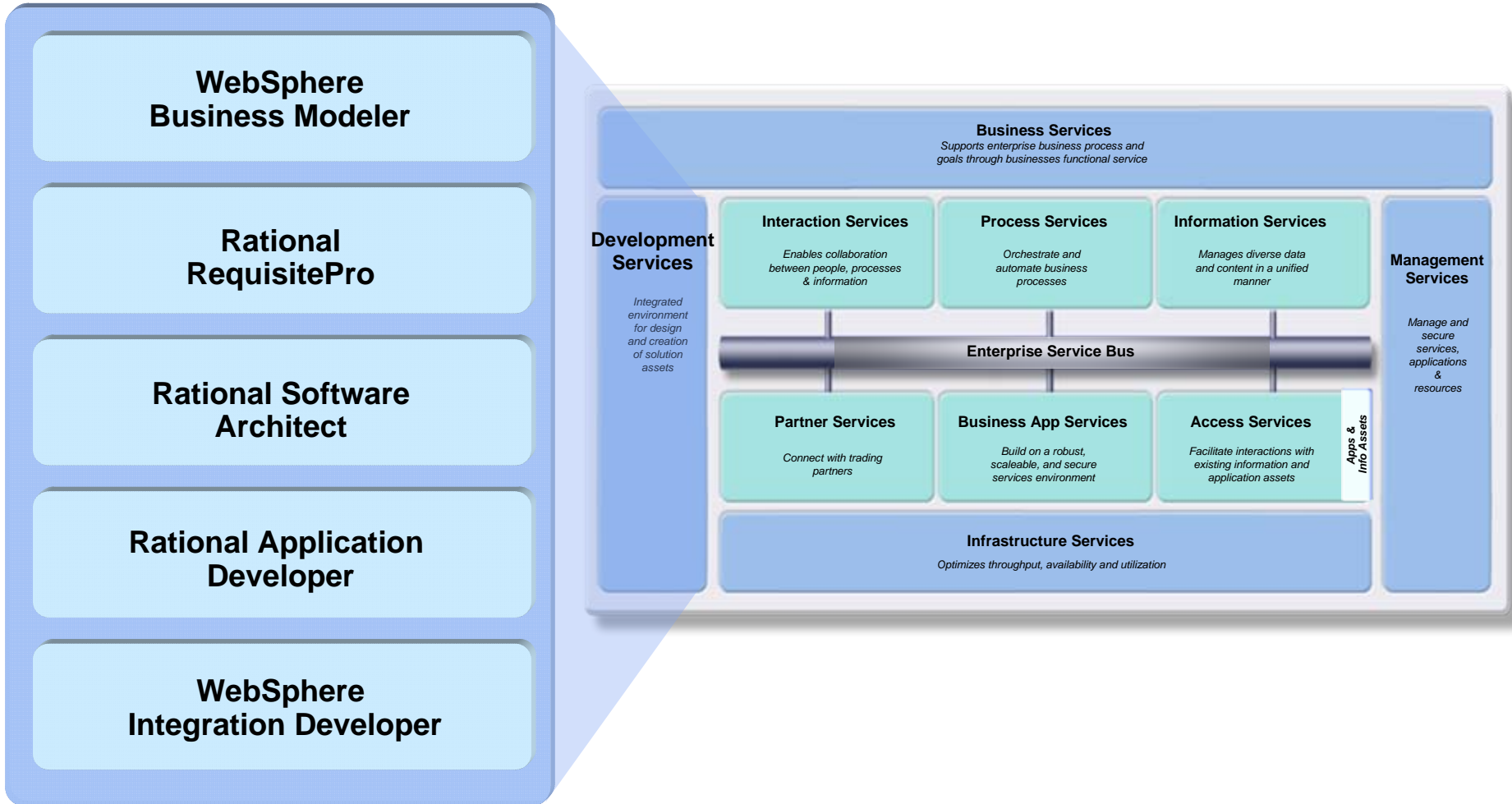


# Agenda

- Business Driven Development for SOA
- Software Development Platform for Business Driven Development and SOA
- **Summary**
  - Mapping to the IBM Products



# Key Products - Business Driven Development



धन्यवाद

Hindi

多謝

Traditional Chinese

Teşekkür ederim

Turkish

Спасибо

Russian

Gracias

Spanish

شكراً

Arabic

Thank You

Mange tak

Danish

Grazie

Italian

Danke

German

Merci

French

நன்றி

Tamil

多谢

Simplified Chinese

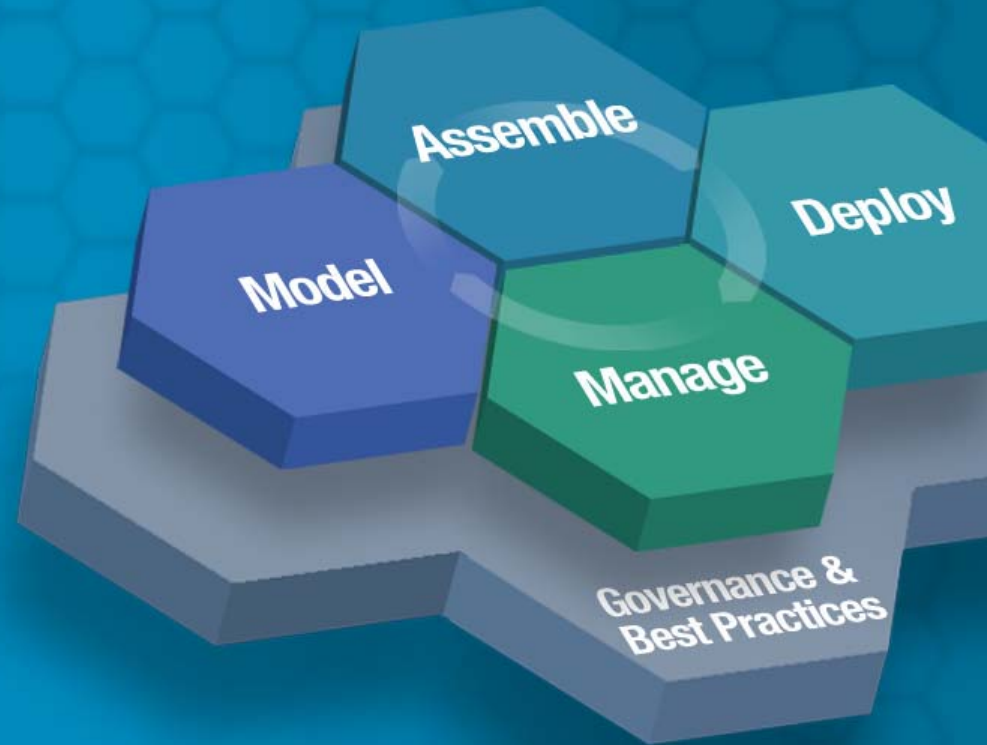
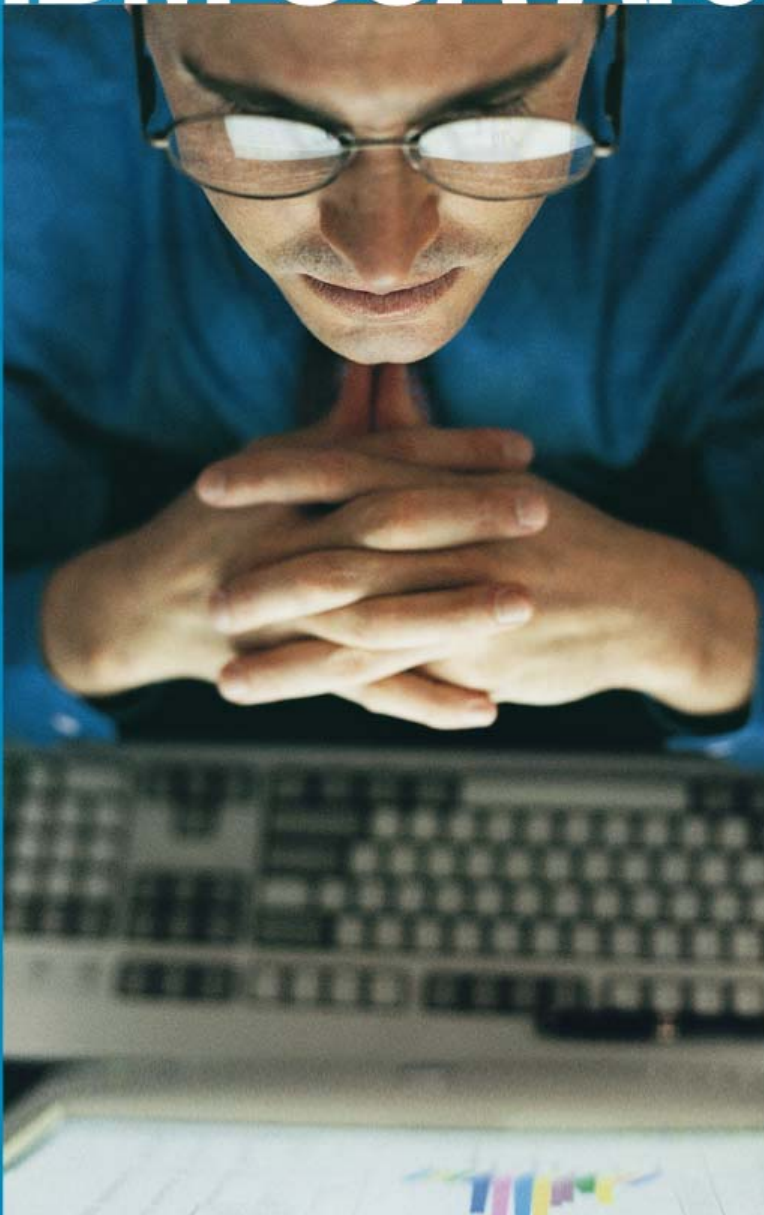
감사합니다

Korean

ありがとうございました

Japanese

# IBM SOA Architect Summit



SOA on your terms and our expertise