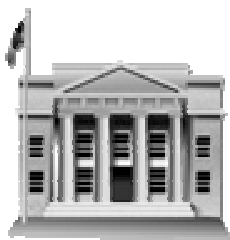Discovering the Value of SOA for WebSphere Business Process Management

ProcessArt

BPM – Business Process Management –
Value of Modeling and WebSphere Business Modeler v6

SOA on your terms and our expertise

Roland Peisl

IBM SWG WebSphere Process Integration
Business Process Management Competency Center
IBM Corporation, Boeblingen Lab, Germany
eMail: *psl @ de.ibm.com*

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Agenda

- **What is Business Process Management (BPM)?**

- **BPM with IBM WebSphere**

- **Value of IBM WebSphere Business Modeler**

- **Generic Modeling Approach**

- **WB Modeler and Software Engineering**

- **Summary**

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What is Business Process Management?

Starting with modeling
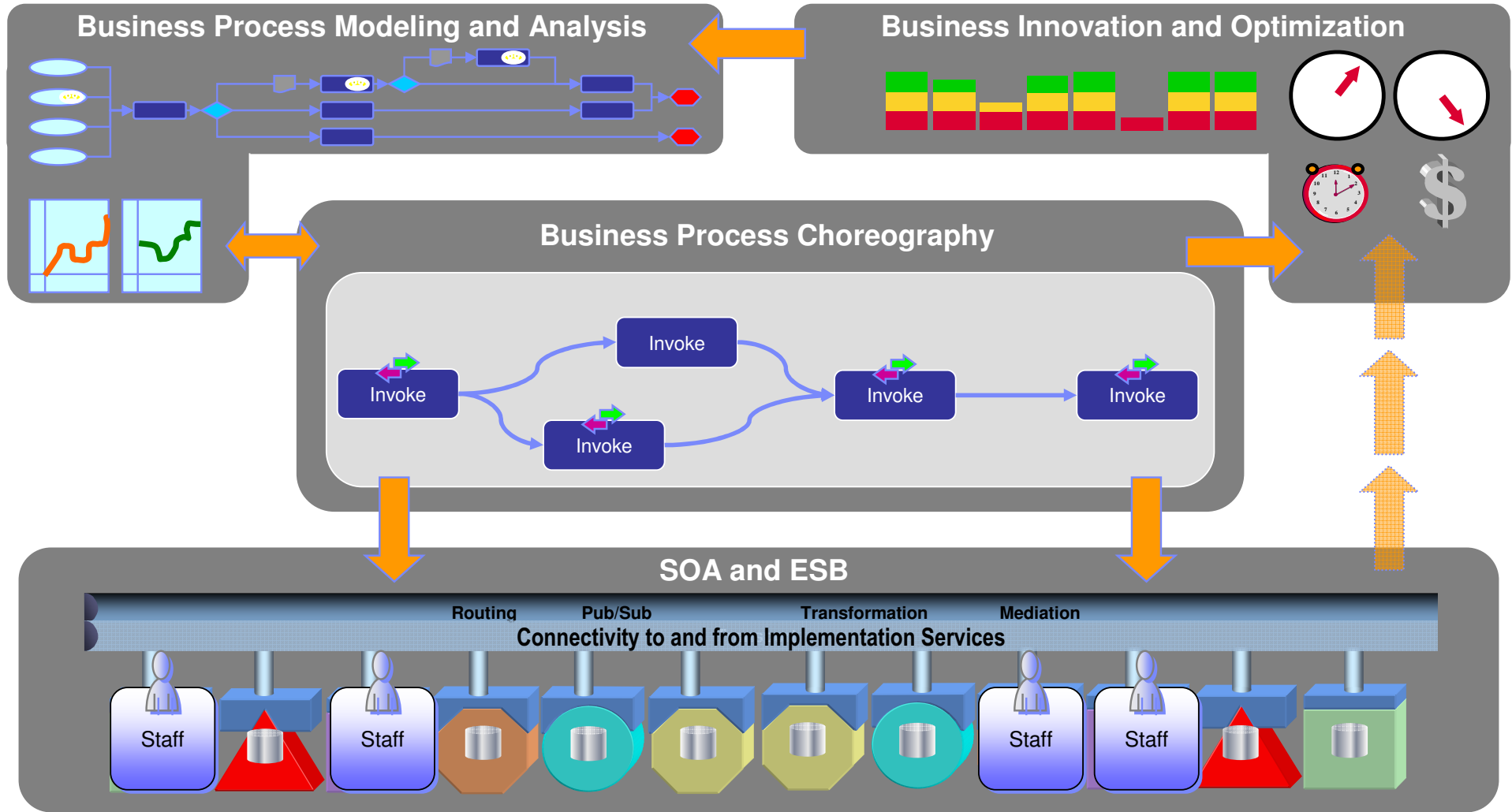
What is Business Process Management – Gartner definition

"**BPM is a general term describing a set of services and tools that provide for** **explicit** **process management** (e.g. process modeling, analysis, simulation, execution, monitoring and administration), **ideally including support for human and application-level interaction.**"

Source: Gartner
May 2001

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Disciplines of Business Process Management

Business Process Modeling and Analysis

Business Innovation and Optimization

Business Process Choreography

Invoke

Invoke

Invoke

Invoke

Invoke

SOA and ESB

Routing   Pub/Sub   Transformation   Mediation

Connectivity to and from Implementation Services

Staff   Staff   Staff   Staff

What is process? Process is:

end-to-en

- **Understand what you do end-to-end**

- **Understand what you don't need to do (anymo**

- **Identify business strengths for sustainable co advantage**

- **Identify business weaknesses and seek for improvements**

- **Simulate business change before running the change**

- **Measure and monitor your business performance**

Our clients ask four questions:

1. How much does it **Cost**?

2. How much **Time** does it take?

3. How many & what **Resources** are required

4. Where are my **Problems**?
   - Bottlenecks
   - Analysis for root cause
   - Return on Investment
   - Anything else.....

The process centric company: "...thinks of the company as being made up of a set of processes and those processes can be used to organize everything else in the company", Paul Harmon in "The process-centric company".

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What is Service-Oriented Architecture (SOA)?

How does it link to SOA?

# BPM drives the SOA implementation, orchestrating business services conform to business processes

An SOA is composed of multiple layers. At the heart of the SOA are the business processes that define the Services and Components required that realize them.

SOA on your terms and our expertise
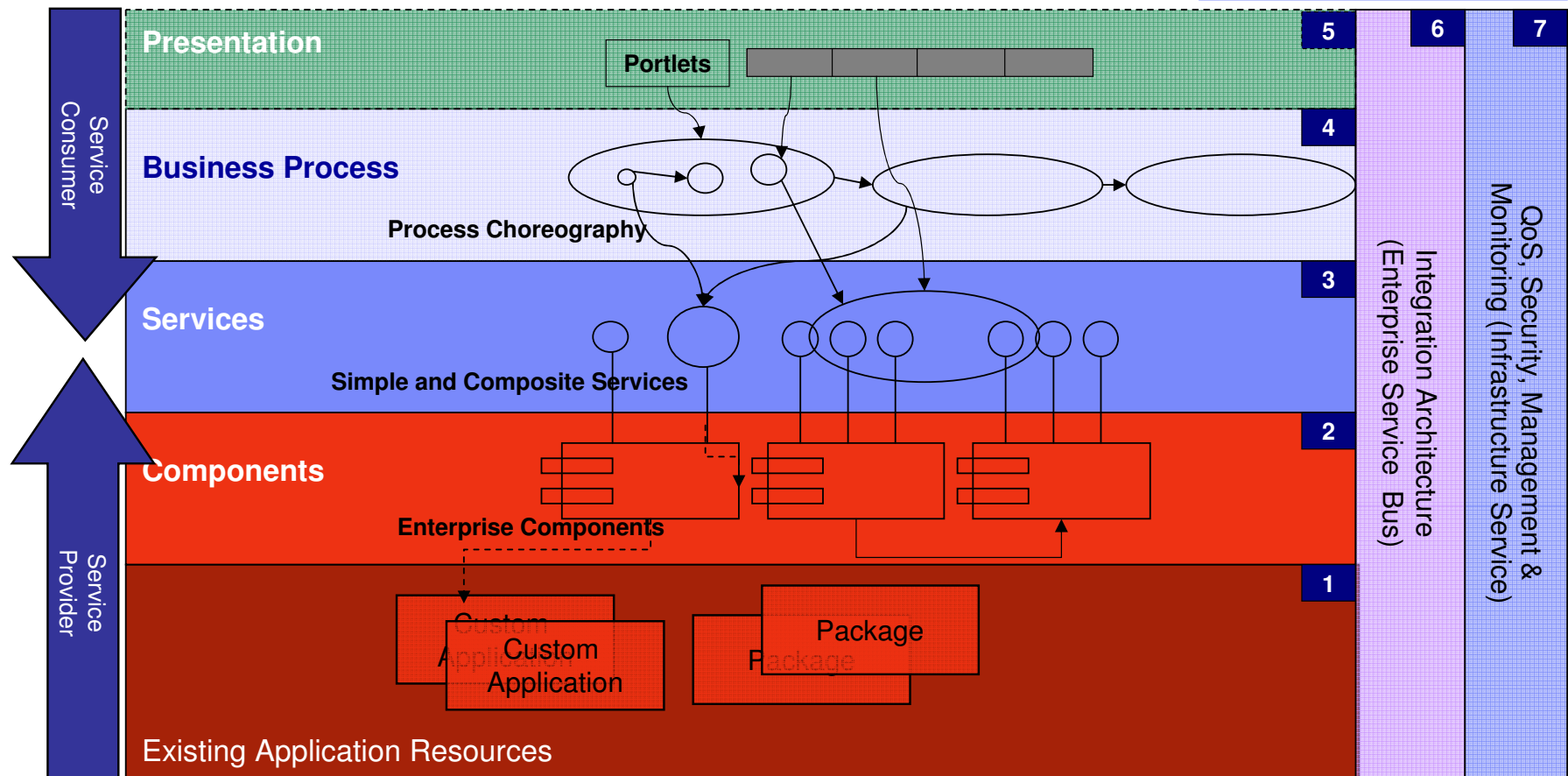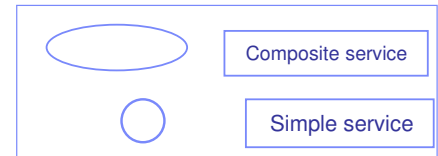
IT Enablement – Business processes exploiting business services – Separation of Concerns, and **Flexibility**
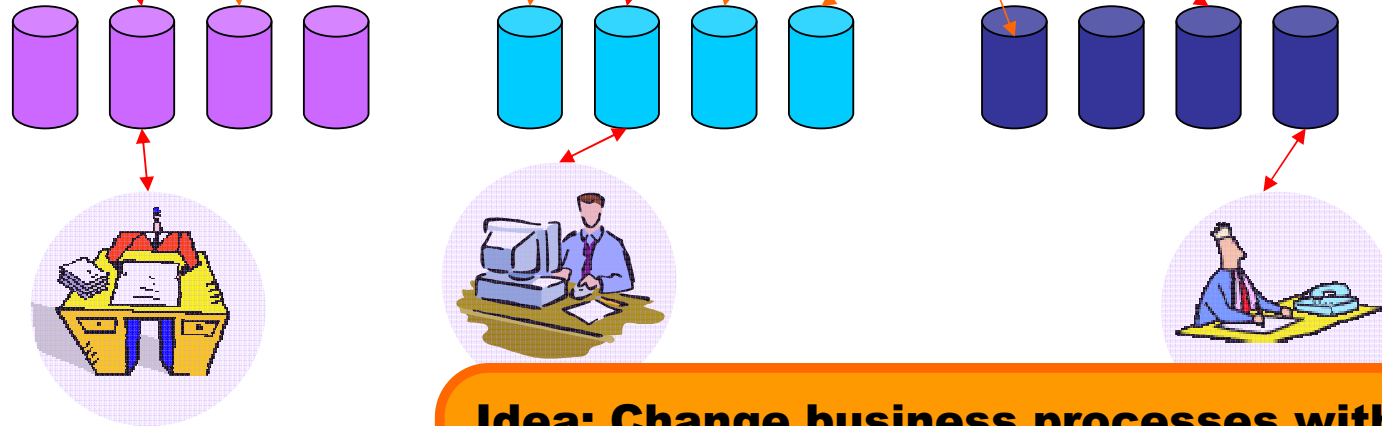
Business Process:
Development across people, information, applications and enterprises
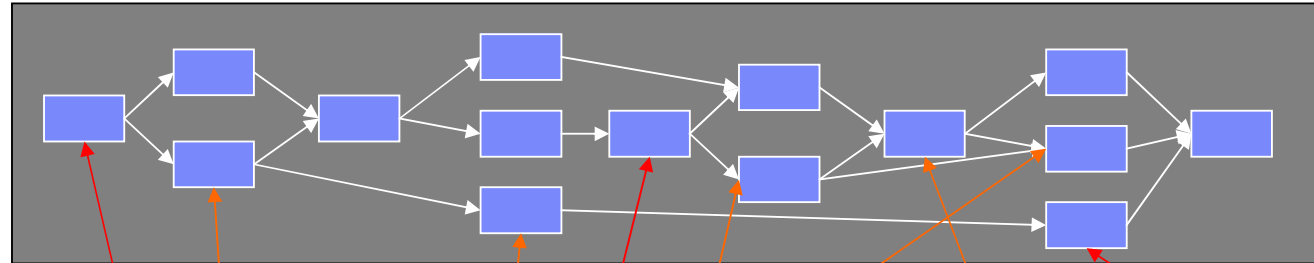
Business Services:
Development and/or identification of required software components, as required from business

Services may be composed of other services again, including rocesses!

Idea: Change business processes without affecting service implementations, and change service implementations without affecting business processes...
(not possible for all required process/services changes, but for many...)

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BPM with IBM WebSphere

V6 Offering

Disciplines of Business Process Management

WebSphere Business Modeler

WebSphere Business Monitor

and Analysis

Business Inn

WebSphere Integration Developer

Invoke

Invoke

WebSphere Process Server

Service

Service

Service

Service

Service

Service

WebSphere ESB

Connectivity to and from Implementation Services

Staff

Staff

Staff

Staff

SOA on your terms and our expertise

IBM
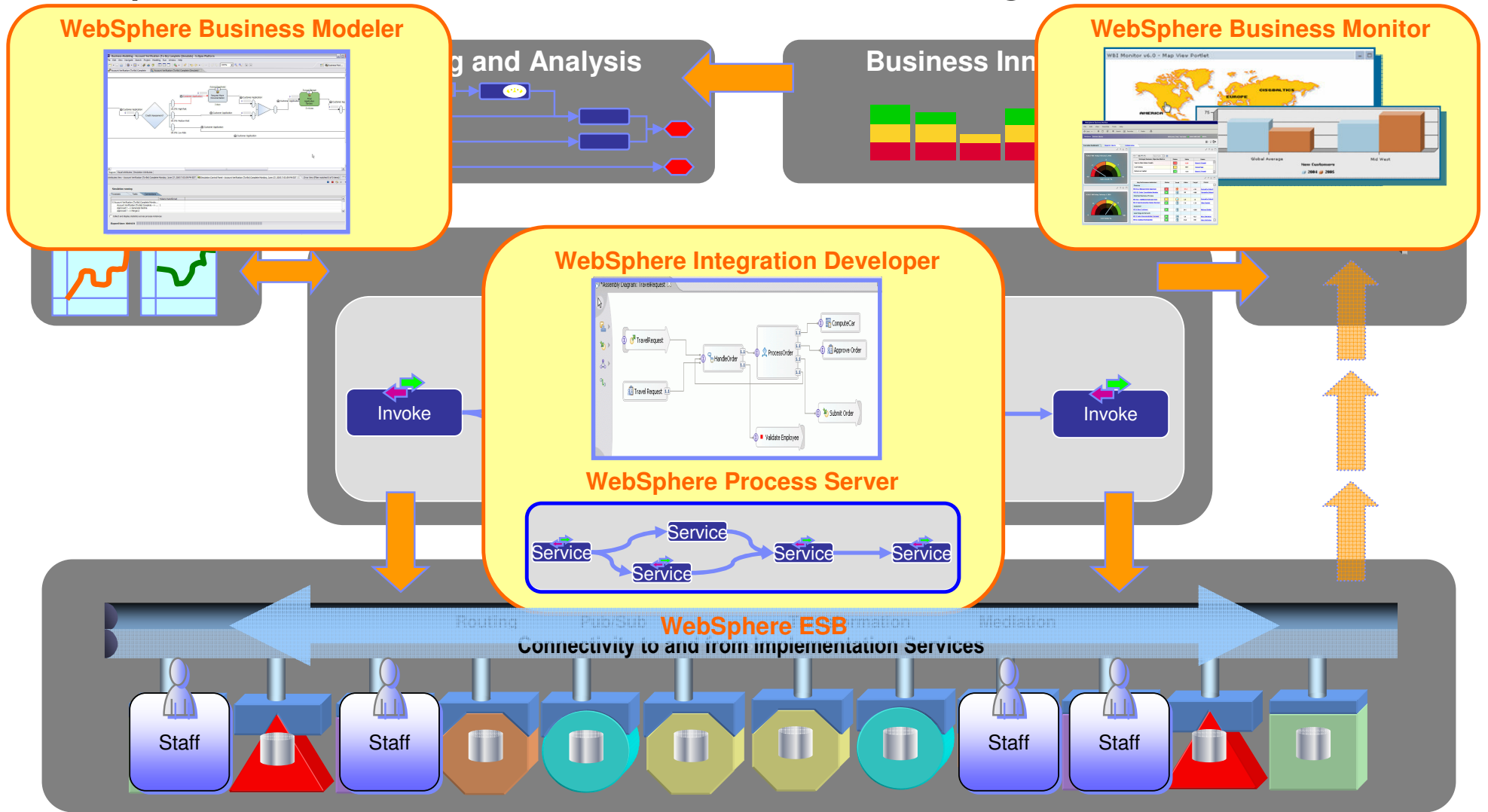
Feedback for Continuous Improvement

- **Leverage real information about your business**
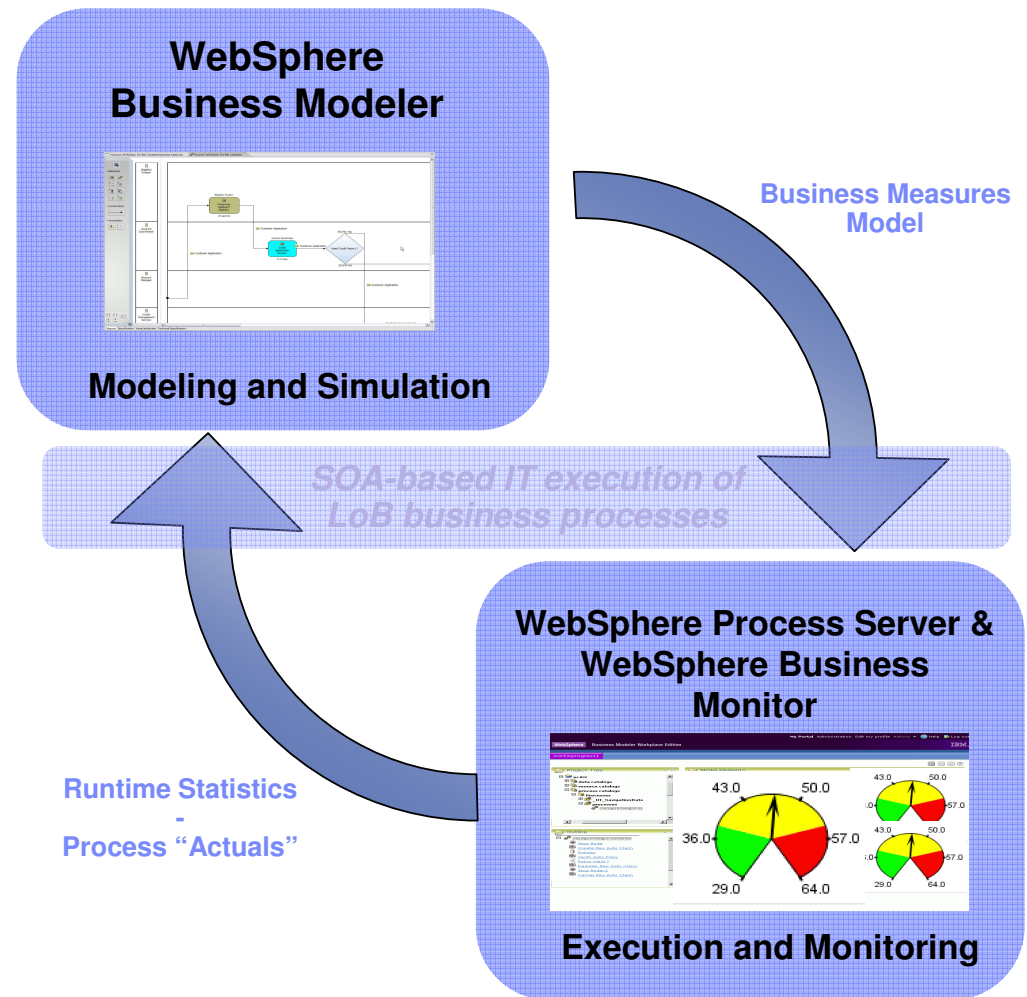 - Better decisions, quicker
  - Core business facts (runtime statistics) from monitor are passed back into modeler for simulation, analysis, diagnosis, and action

- **Improve your business**
  - Business process improvement
  - Discover true process behaviors
  - Fact based simulation leading to improved process design for the next solution deployment

WebSphere Business Modeler

Modeling and Simulation

Business Measures Model

SOA-based IT execution of LoB business processes

WebSphere Process Server & WebSphere Business Monitor

Execution and Monitoring

Runtime Statistics
-
Process "Actuals"

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WB Modeler – Simulation for Sophisticated "What If" Analysis and Optimization *before* Development

- Predict your business operation outcomes by running "what if" scenarios

- Help determine and justify projects that will generate the greatest returns on investments, and help build your business case

- Generate comprehensive data around cost, time, and resource savings

- Optimize by looking at bottlenecks and workload imbalances before moving any changes into production

BPM on SOA – Lifecycle

WebSphere Integration Developer

- **Discover**
- **Construct & Test**
- **Compose**

- **Integrate people**
- **Integrate processes**
- **Manage and integrate information**

WebSphere Business Modeler

- **Gather requirements**
- **Model & Simulate**
- **Design**

Assemble

Deploy

Model

Manage

WebSphere Process Server

Governance & Best Practices

WebSphere Service Registry and Repository

WebSphere Business Monitor

- **Financial transparency**
- **Business/IT alignment**
- **Process control**

- **Manage applications & services**
- **Manage identity & compliance**
- **Monitor business metrics**

WB Modeler – Business services import support

Modeler

- Ability to import business services (WSDL) and business objects (XSD):

  ▶ Provide the capability to import multiple wsdl/xsd files from different file directories or well-known service registry (WSRR)

  ▶ Preserves the contents of the wsdl and xsd files (annotations, port types, bindings, service endpoints, etc) at export time (same structure as import files)

New in v602
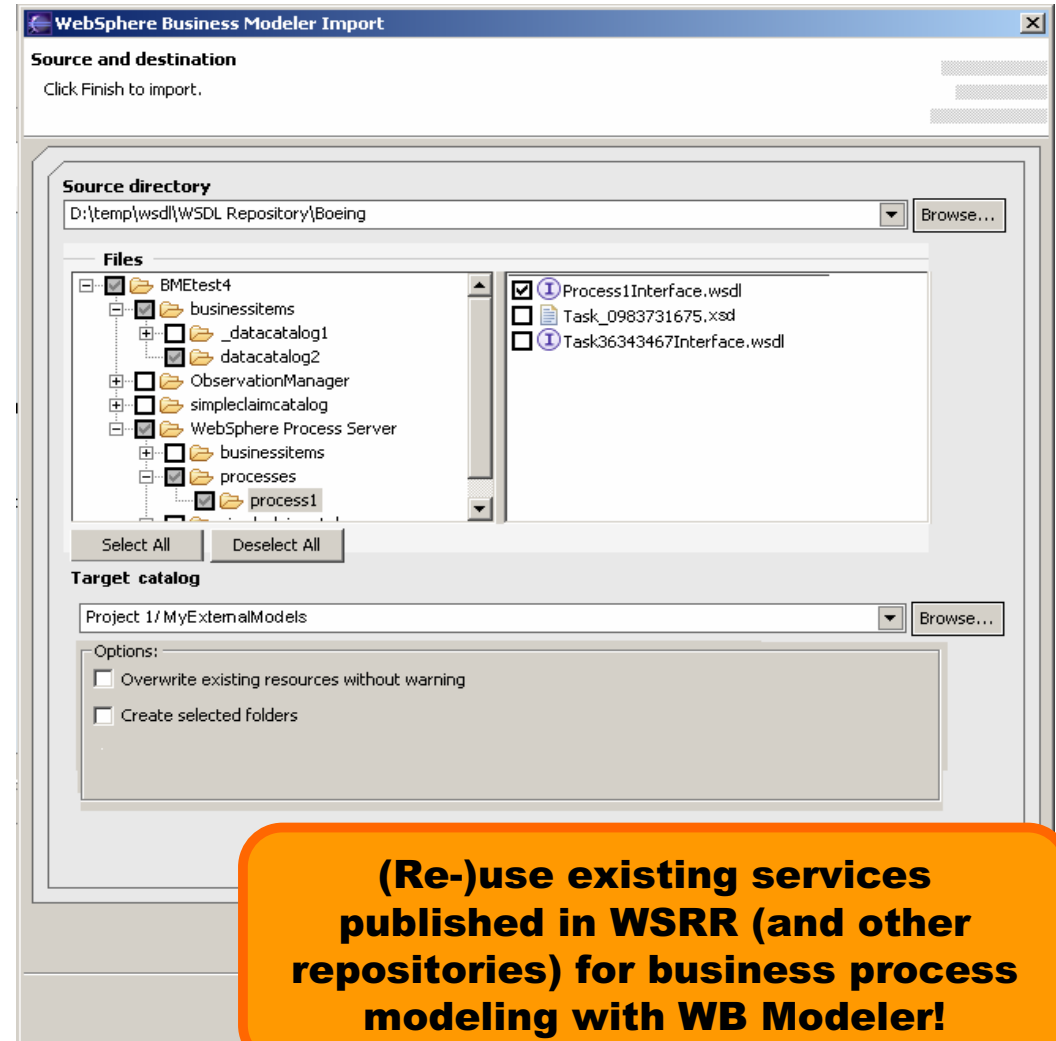
(Re-)use existing services published in WSRR (and other repositories) for business process modeling with WB Modeler!

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Value of WebSphere Business Modeler

For ISVs and SIs

SOA on your terms and our expertise

Applying governance principles to business process change

...leading into Business Transformation...

Governance

1. Establishing **chains of responsibility** (e.g. process owners), authority and communication

2. **Executing measurement and control mechanisms** to enable people to carry out their roles and responsibilities

3. **Implementing standardized rules** how business operations can be quickly adapted to change
   - Reporting guidelines
   - Review boards
   - Decision boards

Governing process change

Manage value
- Align business and IT
- At organizational and project levels
  - Balance risk and return
  - Provide communication material
  - Provide clarity and accountability

Adapt to change quickly and flexibly
- Leverage resources anywhere
- Enable agile sourcing choices
- Use iterative processes to reduce risk

Control risk and change
- Continuously measure to reduce risk
- Control change management
- Monitor process execution, service level agreements and user satisfaction

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Governance – Describing guidelines and principles how 'things' should be done

GOVERNANCE

Strategic alignment

Chains of responsibility, authority & communication

Measurement & control mechanisms

Question: How to help decision makers to make the right decisions in order to improve business operations?

ON DEMAND BUSINESS

Governance – Governing process change

GOVERNANCE DASHBOARD

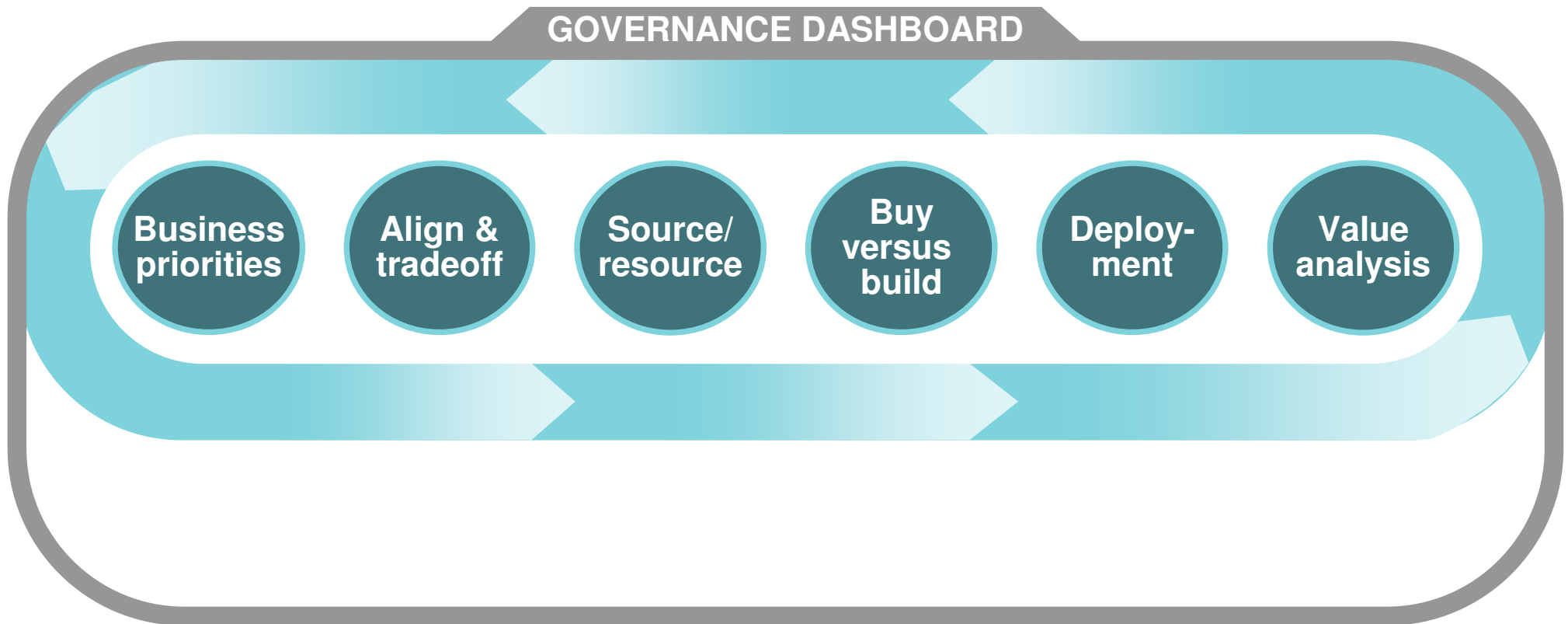**How to improve business efficiency by improving current business processes?**

GOVERNANCE

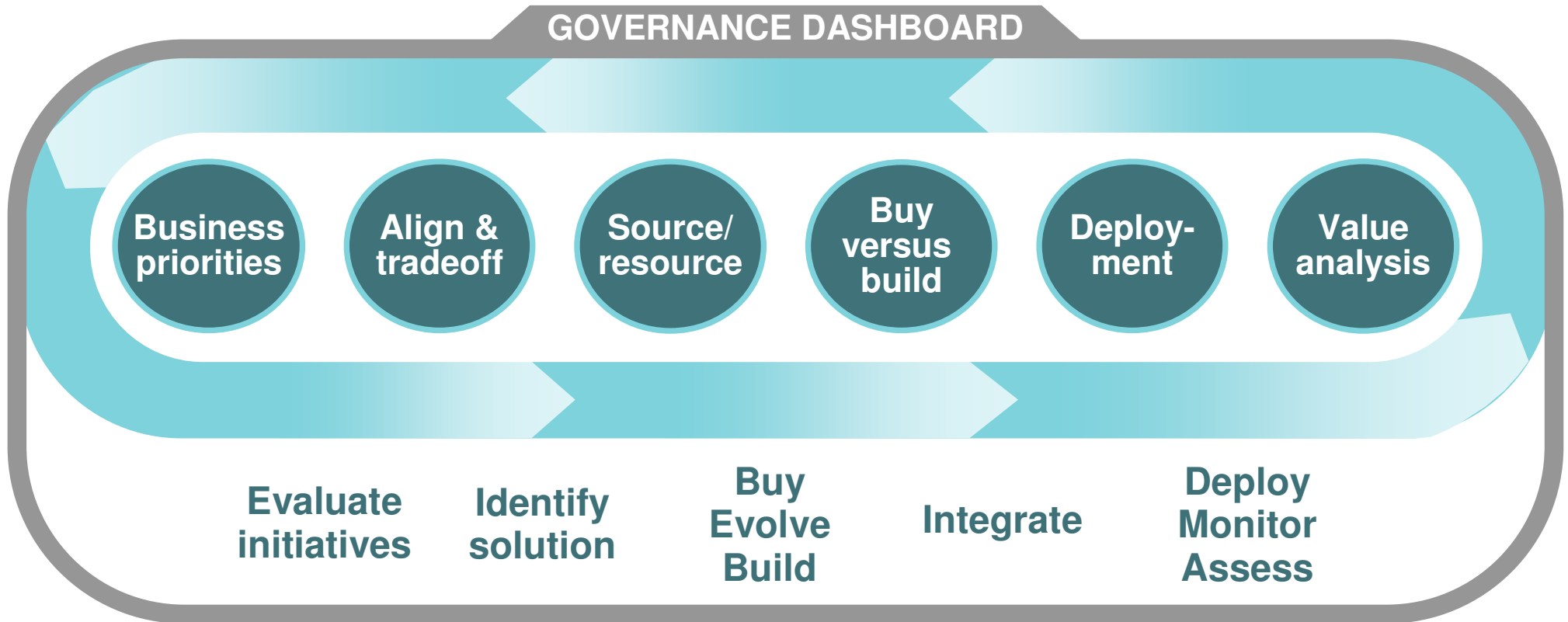| Strategic alignment | Chains of responsibility, authority & communication | Measurement & control mechanisms |

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Business Driven Development – Business processes describe how business operations are implemented

GOVERNANCE DASHBOARD

| Business priorities | Align & tradeoff | Source/ resource | Buy versus build | Deploy-ment | Value analysis |

The Management Executive team must make decisions to **properly balance risk and return of future investments**. None of these decisions are unique – what's unique is their impact on business transformation, therefore to current business processes, and changes to underlying software and systems. As businesses need to transform themselves constantly, there business processes need to be highly flexible, which may require new software (services) and to change existing systems…..

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IBM

Business Driven Development – Business processes describe how business operations are implemented

GOVERNANCE DASHBOARD

Business priorities	Align & tradeoff	Source/ resource	Buy versus build	Deploy-ment	Value analysis

Evaluate initiatives	Identify solution	Buy Evolve Build	Integrate	Deploy Monitor Assess

Informed business decisions drive IT development activities

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Business Driven Development – Business processes describe how business operations are implemented

WebSphere Business Modeler fully describes the business processes and all its dependencies to business data, underlying software systems, human resources, and allows cost calculation and time-based evaluations. Visualization of these dependencies allows business decision makers to select the best investment option with respect to process change, after having run simulations to understand the impact of business transformation alternatives.

Busine... prioriti...

...alue ...alysis

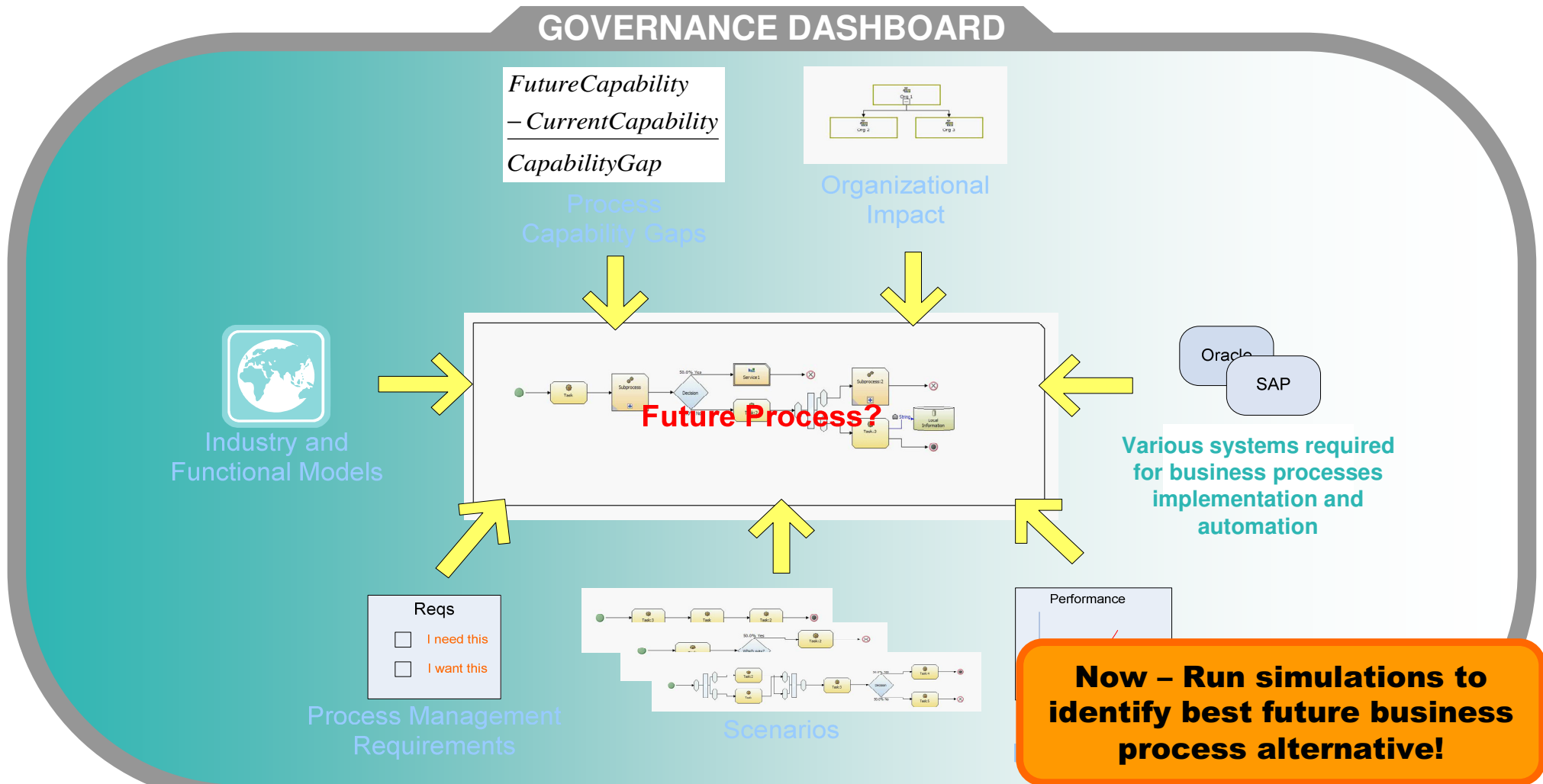## Business Process Management

| How very well do the current business processes support what business goals? | What resources are required? At what cost and availability? | What parts of the business processes do we own? What's outsourced? How do the interfaces look like? How do we deploy and run them? | Now – did we improve? Or – what else can be improved? |

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Business Process Improvements – Common Approach to identify optimization potentials

GOVERNANCE DASHBOARD

$$\frac{FutureCapability - CurrentCapability}{CapabilityGap}$$

Process Capability Gaps

Organizational Impact

Industry and Functional Models

Future Process?

Oracle

SAP

Various systems required for business processes implementation and automation

Reqs
- [ ] I need this
- [ ] I want this

Process Management Requirements

Scenarios

Performance

Now – Run simulations to identify best future business process alternative!

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Role of ISVs and SIs – Using WB Modeler

Helping customers for Business Transformation

1. **Showing customers how they operate today by modeling their business processes on required level of detail - LoB**

2. **Brings in industry expertise to improve current business processes, either based-on**
   1. Already implemented assets based on other engagements
   2. Industry standards (process templates, outsourcing strategies, etc)
   3. Identification of customer-specific sustainable advantages

3. **Recommends business process changes to optimize current business processes**

4. **Presents various future business process alternatives, and runs simulations to qualify best future process depending on customer's business goals and budget – Lob and IT**

5. **Introduces SOA concepts to automate business proces of business process logic and implementation details -**

> **WebSphere Business Modeler opens the door for Business Transformation projects.**

Generic Modeling Approach
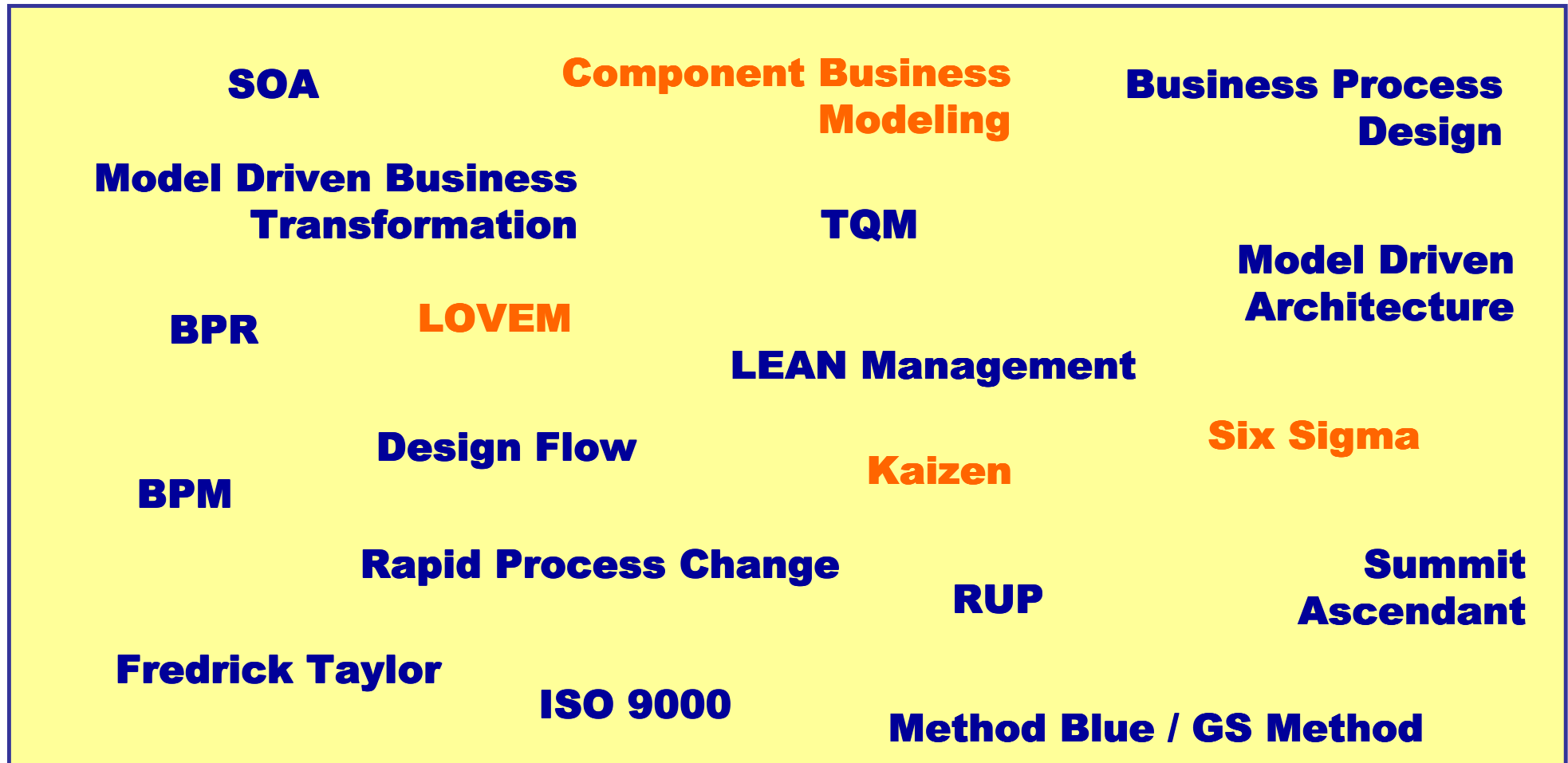
Guidelines for modeling

Modeling analogy – 3D CAD – Revolution for the automotive industrie
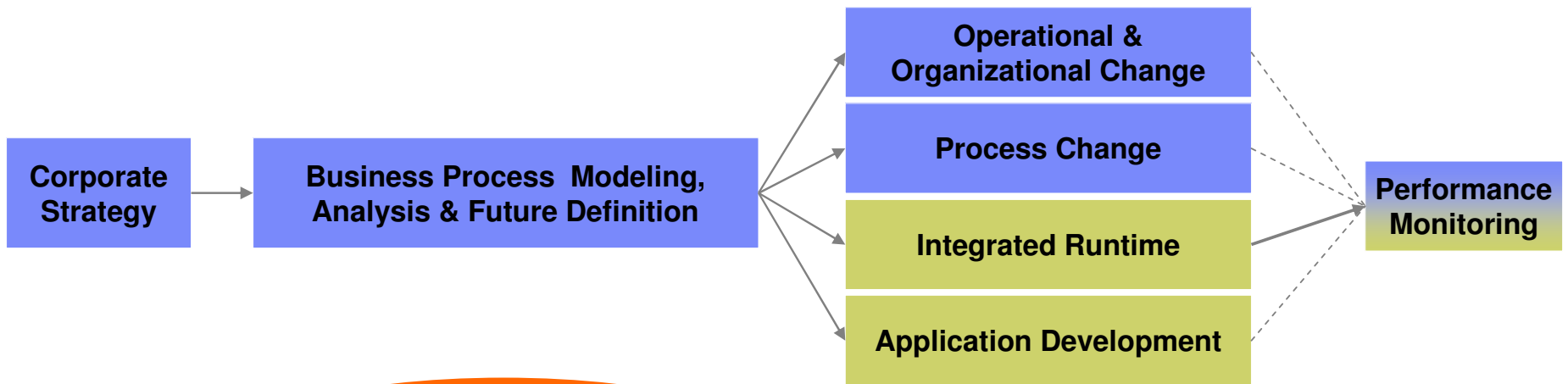
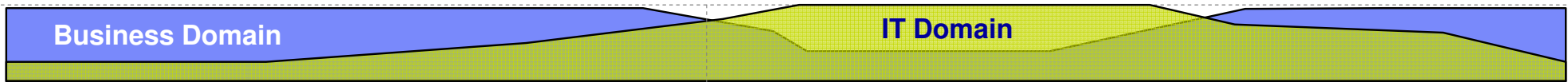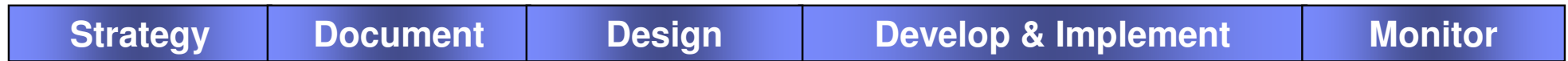**Why using 3D CAD technologies today?**

1. In today's economy, market pressures to respond to ever-changing consumer needs have never been greater. These changes shorten product life cycles and increase the need for customized products.

2. Companies which can respond to these consumer demands will be more successful than others. The potential benefits to companies moving to 3D CAD technology are extensive and meaningful to the bottom line, which is: More profit for the company.

> **All industries today face the same challenges, summarized in the critical need to be able to faster respond to changing markets.... The company's core business processes have to be known and transparent in order to be changed quickly! This can be achieved by following the concepts of BPM and SOA, implemented on IT infrastructures truly supporting these concepts.**

Modeling Methodologies, Approaches, & Models

SOA

Component Business Modeling

Business Process Design

Model Driven Business Transformation

TQM

Model Driven Architecture

BPR

LOVEM

LEAN Management

Six Sigma

Design Flow

Kaizen

BPM

Rapid Process Change

RUP

Summit Ascendant

Fredrick Taylor

ISO 9000

Method Blue / GS Method

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Business Process Modeling – Lifecycle & Required Expertise

Strategy	Document	Design	Develop & Implement	Monitor

Business Domain — **IT Domain**

Corporate Strategy → Business Process Modeling, Analysis & Future Definition →

- Operational & Organizational Change
- Process Change
- Integrated Runtime
- Application Development

→ Performance Monitoring

Component Business Modeling	Business Process Modeling	Business Process Integration Service Oriented Architecture	Business Process Monitoring

SOA on your terms and our expertise

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Business Process Modeling – Sample Lifecycle

Strategy & Planning	Current State Structural Decomposition	Current State	"What if" Analysis	Future State (Business)	Future State (Execution)

P r o j e c t P h a s e

- Strategy – **business strategy is determined and related to business processes**

- Planning – **plans are made to address particular business strategies through business process reengineering**

- Current State Discovery – **the current processes in the enterprise are identified, validated and analyzed**

- Future State Design and Definition – **"what if" scenarios are conducted on current processes to determine potential solutions and the future state is designed and defined, including the future state Execution Model**

- Development – **new and modified applications are designed, developed and tested, including potential automated workflows**

- Rollout – **the new or modified process is rolled out to the business. This consists of all aspects of the process including people, knowledge, and technology**

- Management – **the new or modified process is managed and monitored and business metrics are collected to measure process performance**

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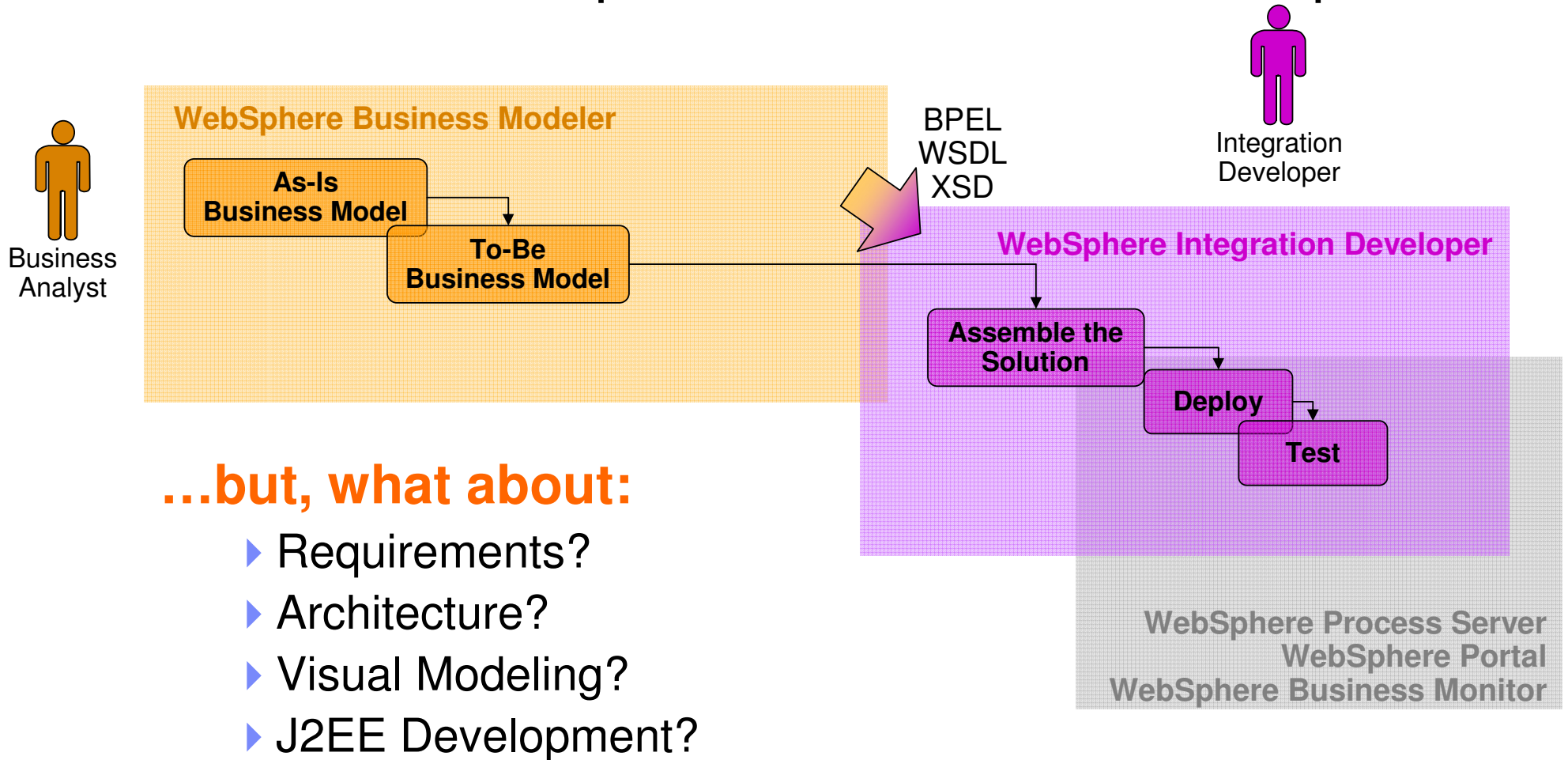# Business Process Models – By phase
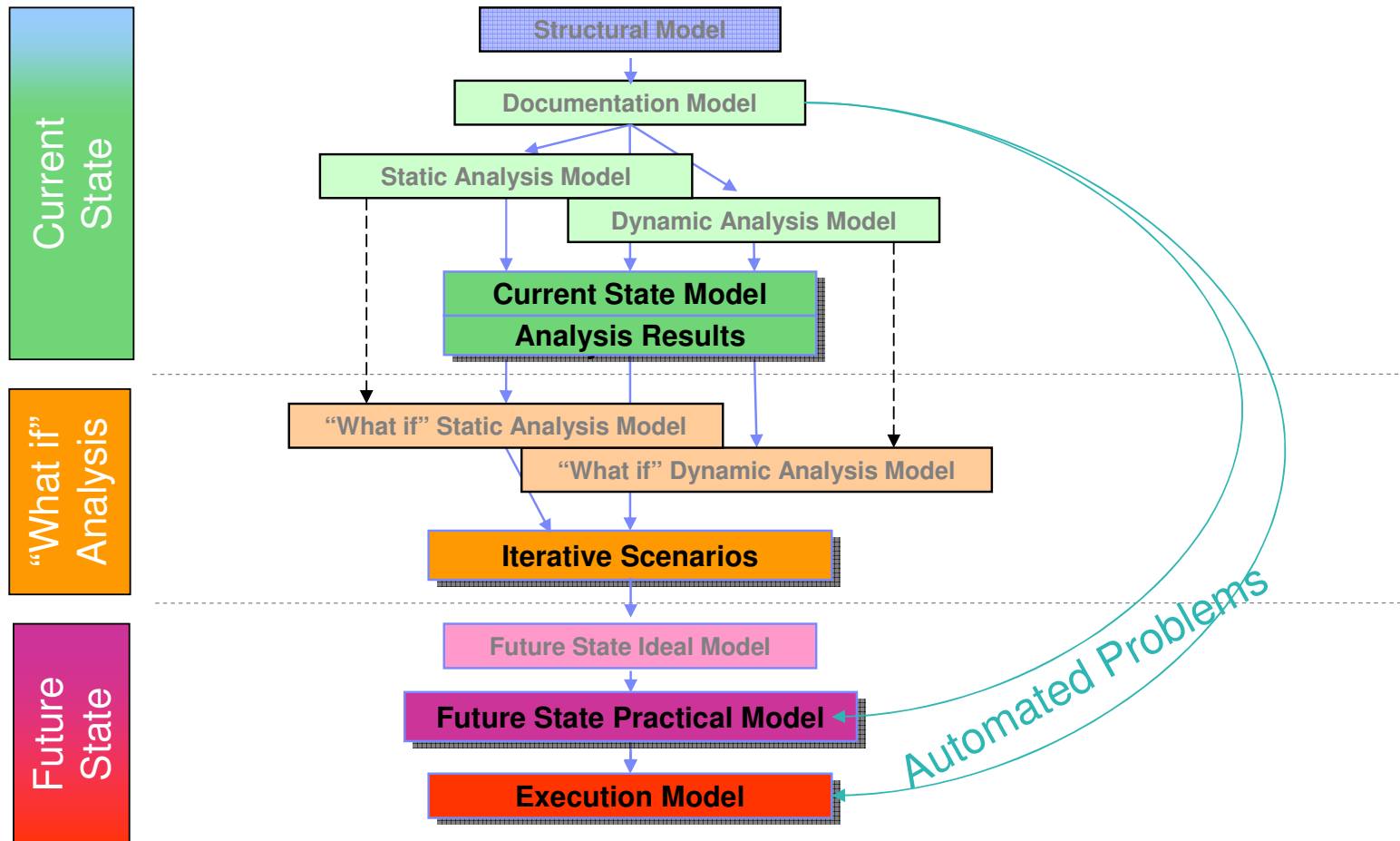
WB Modeler and Software Engineering

Linkage to application/service development

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From WB Modeler to process execution – BPM path

Business Analyst

WebSphere Business Modeler

As-Is Business Model

To-Be Business Model

BPEL
WSDL
XSD

Integration Developer

WebSphere Integration Developer

Assemble the Solution

Deploy

Test

...but, what about:

▶ Requirements?

▶ Architecture?

▶ Visual Modeling?

▶ J2EE Development?

WebSphere Process Server
WebSphere Portal
WebSphere Business Monitor

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Model-Driven Development for Software Engineering

RequisitePro

WebSphere Business Modeler

BPEL
WSDL
XSD

Business Analyst

As-Is Business Model

To-Be Business Model

Integration Developer

UML

WebSphere Integration Developer

Trace Requirements

Identify Architectural Elements

Implement

Deploy & Test

Assemble the Solution

Deploy

Test

WSDL
EAR

Rational Software Architect

WebSphere Process Server
WebSphere Portal
WebSphere Business Monitor

Architect

J2EE Developer

WB Modeler integration with RSA

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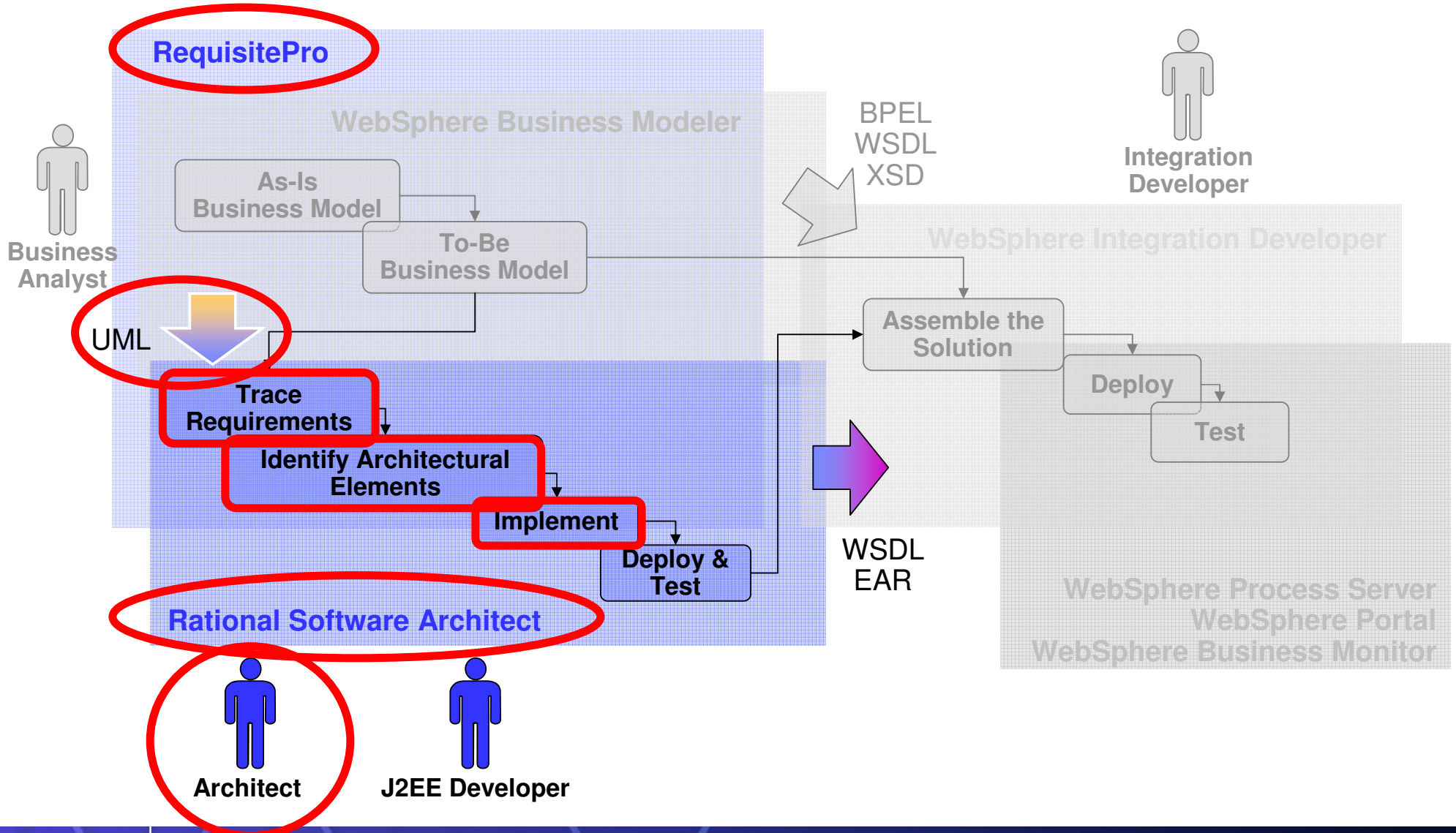
J2EE Development with RAD

RequisitePro

WebSphere Business Modeler

As-Is Business Model

To-Be Business Model

BPEL WSDL XSD

Integration Developer

WebSphere Integration Developer

UML

Trace Requirements

Identify Architectural Elements

Implement

Deploy & Test

Assemble the Solution

Deploy

Test

Rational Application Developer

WSDL EAR

WebSphere Process Server WebSphere Portal

Business Analyst

Architect

J2EE Developer

New services written by J2EE developers in RAD are used by the Integration Specialist in WID to automated business processes modeled in WB Modeler.

Software Engineering – Model Elements
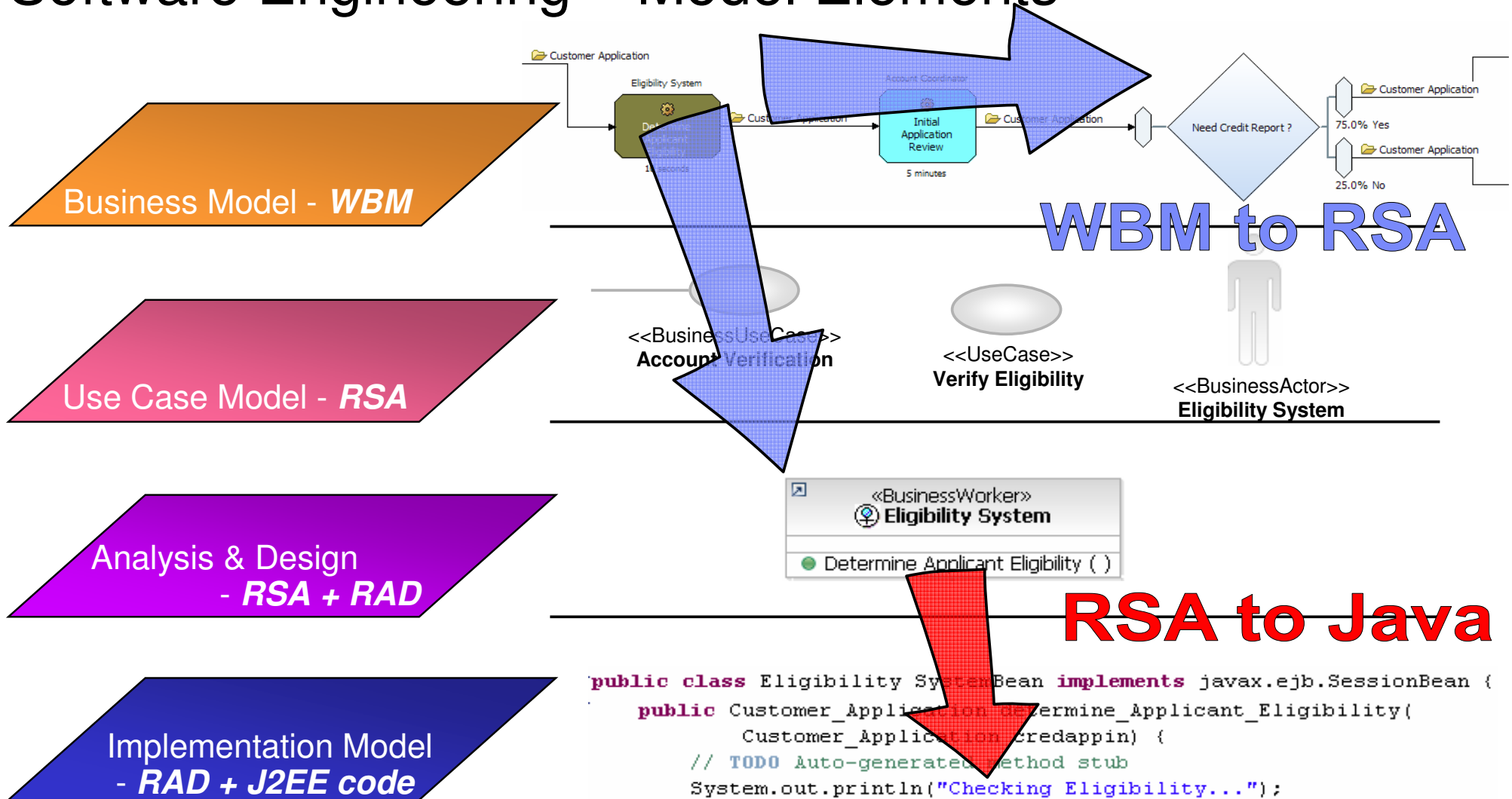
WB Modeler – Bridges the gap between Business and IT

As-Is
To-Be
Analysis
Simulation
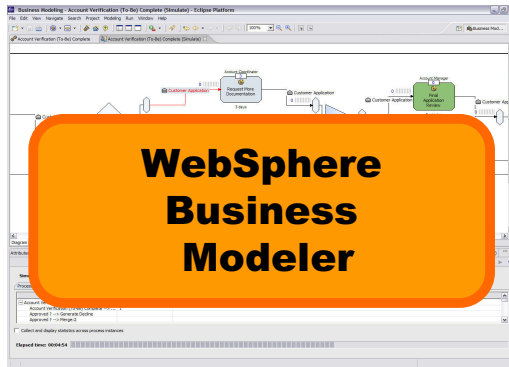
WebSphere Business Modeler

- Process Knowledge & Documentation
- Process Improvement

Business Tool
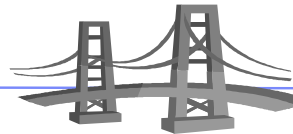
Application Development

Activity Implementation / Test

Rational Software Architect

WebSphere Integration Developer

Rational Application Developer

WebSphere Process Server

IT Tool

ON **DEMAND BUSINESS**™

Process-oriented composite application development

Idea: Invocation of services is not hard-coded in JAVA, but: New composite applications follow process orientation. In that case, WID is used for service choreography.

IT driven – not recommended for BPM!

Integration Developer

RequisitePro

UML

WebSphere Integration Developer

Assemble the Solution

Deploy

Test

Trace Requirements

Identify Architectural Elements

Implement

Deploy & Test

WSDL EAR

Rational Software Architect

Architect

J2EE Developer

WebSphere Process Server
WebSphere Portal
WebSphere Business Monitor

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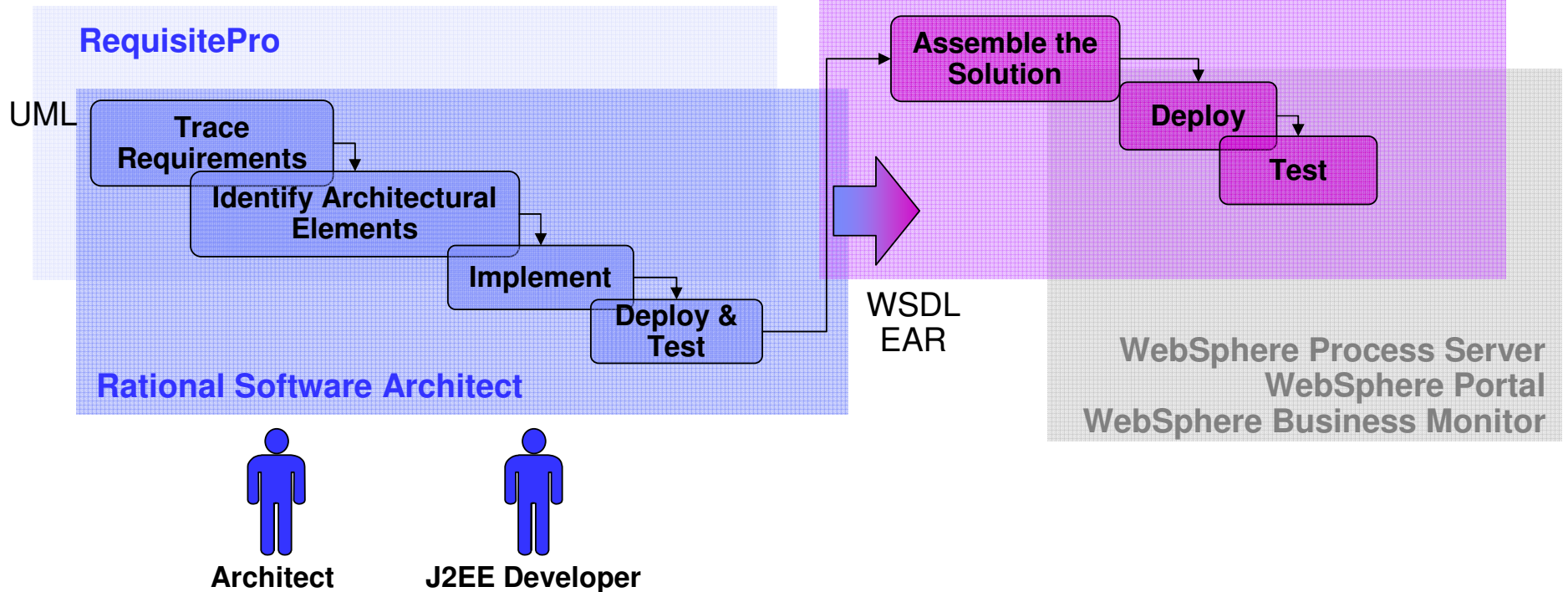
Summary

Starting with the business processes is critical to SOA flexibility

*Any higher level business consulting methodologies to understand how business run their business*
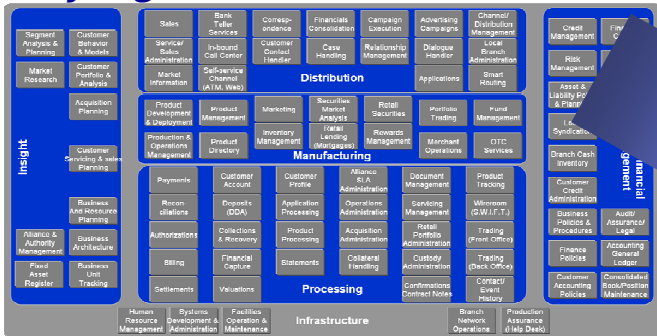
Process optimization – Business Process Management
BP Modeling and Analysis
BP KPIs and Monitoring

Case Study: Payments Processing
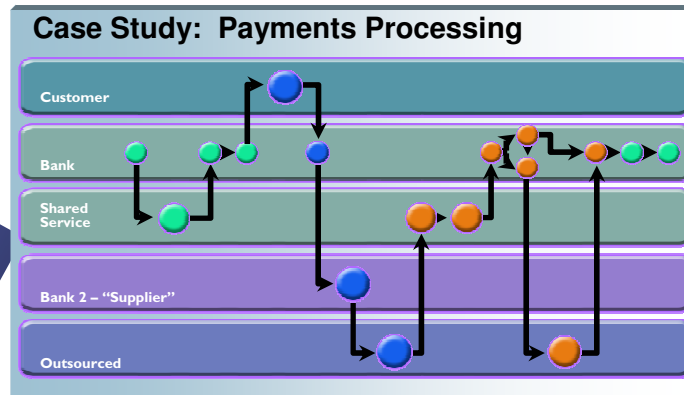
Creating IT flexibility –
SOA
BP Automation,
Service Implementation

IBM SOA Foundation

Following a top-down approach from Business down to IT.

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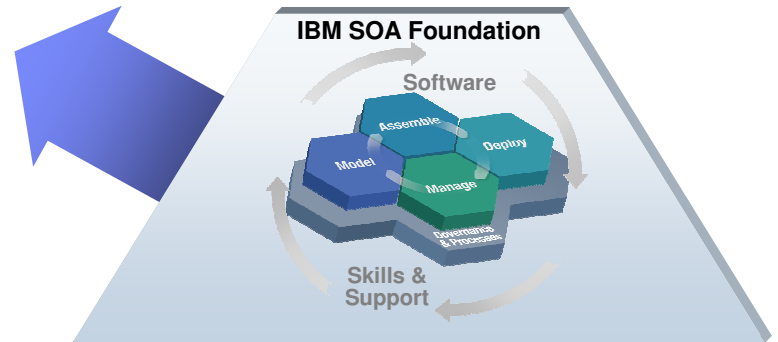
WB Modeler V6 – What it allows you to do

First

Document processes
as they are today

Second

Analyse and test
process alternatives
to identify best
process according to
your requirements

Third

Specify technical attributes to
simplify the transformation
from the business model to
the execution model

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True Business Understanding Requires Multi-Dimensional Models

- **Process Model**
  - ▶ Drag & Drop to create the graphical view - the visual representation of the process model.

- **Resource Model**
  - ▶ Define resource types, templates and instances – and associate them to the process

- **Information Model**
  - ▶ Define the data & its attributes – show how data is used within a business process.

- **Organization Model**
  - ▶ Define organization units, locations – show roles, resources and other organizational elements in structured diagrams

- **Analysis Model**
  - ▶ Define and anlayze process elements for their static relationships, as well as their simulated dynamic behavior

- **Business Measures Model**
  - ▶ Define Key Performance Indicators and Metrics that represent the critical performance characteristics to be Monitored

- **Collaboration & Team Support**
  - ▶ Publish models for browser based access and commentary & share models in a centralized repository

- **Output Capabilities - Integration**
  - ▶ Create formatted output for use in other tools; Share model elements with I / T – BPEL or UML

Details to be shown in the product demo...

SOA on your terms and our expertise
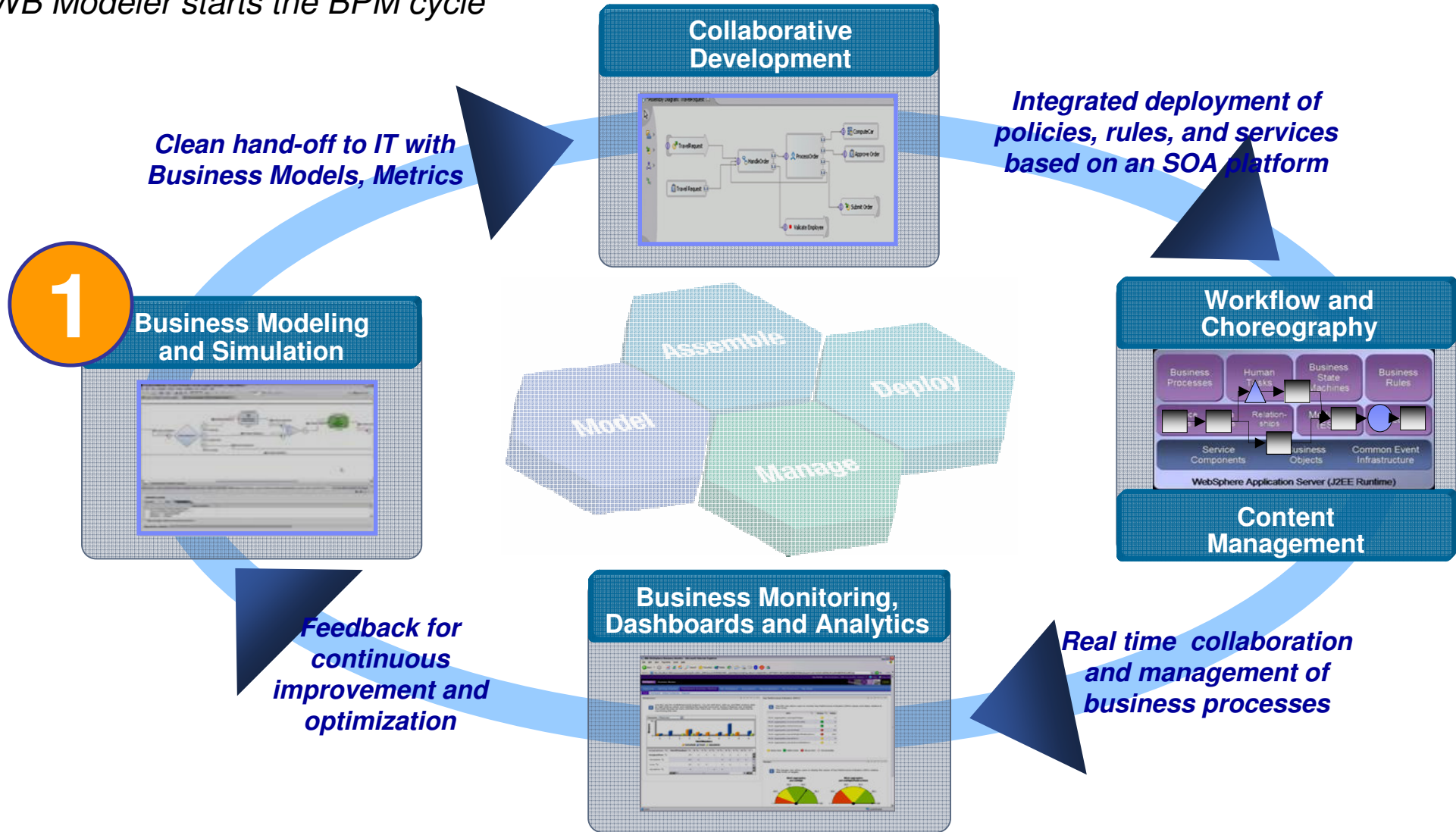
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WebSphere Business Modeler – Features Overview

- Easy-to-use - Designed and tested with business analysts
  - Multiple Modes - Business/IT friendly
- Detailed Resource, Process and Data Modeling
- Robust Analysis - Static/Dynamic
- Integration with Crystal Reports
- Powerful Simulation Engine
- Swimlane Editing and Simulation
- Multi-User Support - CVS/ClearCase
- Web Publishing Support

- Business Measures Editor (Metrics, KPIs, Aggregations, etc.)
  - Export Business Measures model to WebSphere Business Monitor
  - Import WebSphere Business Monitor Run-Time Metrics
- Integration
  - Rational Software Architect Support (UML)
  - WebSphere Process Server Support (BPEL)
  - WebSphere Studio Application Developer Integration Edition Support (BPEL)
  - WebSphere MQ Workflow Support

	Simulation Result...	Process Name	Weighted Average Rev...	Weighted Average Allocated Res...	Weighted Average Profit	Total Cost
	As-Is	Account Verification (As-Is) Complete	$222.00	$22.990868	$130.709132	
	To-Be	Account Verification (To-Be)	$282.00	$20.125571	$202.474429	
Difference			($60.00)	$2.865297	($71.765297)	$11.765297
Percentage Change			-27.027%	12.463%	-54.905%	12.888%

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Business Process Management enabled by SOA

WB Modeler starts the BPM cycle

Collaborative Development

Clean hand-off to IT with Business Models, Metrics

Integrated deployment of policies, rules, and services based on an SOA platform

1 **Business Modeling and Simulation**

Workflow and Choreography

Content Management

Business Monitoring, Dashboards and Analytics

Feedback for continuous improvement and optimization

Real time collaboration and management of business processes

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Summary and Where to Go

> *Companies are combining the principles of Business Process Management (BPM) with the flexibility provided by SOA to move their levels of innovation and operational excellence higher. SOA software elements from IBM such as business dashboards, service repositories, tools, and rules engines help accelerate process improvements. And since software alone is not enough, IBM can also provide the expertise to deliver BPM through process knowledge, industry methods and models needed to make SOA-enabled BPM truly valuable.*

IBM and IBM partners provide the overall solution to Business Process/Performance Management, founded on SOA.

Jointly, we ensure managers:

▸ Can see what is currently happening

▸ Can put what's happening into context

▸ Can take actions to make changes quickly

www.ibm.com/software/info/bpmsoa/

IBM

The end.

SOA on your terms and our expertise