IBM Solutions for Enhancing Business Process Management (BPM)
(An Introduction to Business Rules Management)

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Session 7434

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Agenda

1	**Setting the scene**
2	**The case for a Business Rule Management Systems**
3	**WebSphere ILOG BRMS**
4	**BPM & Business Rules working together**

Agenda

1 Setting the scene

2 The case for a Business Rule Management Systems

3 WebSphere ILOG BRMS
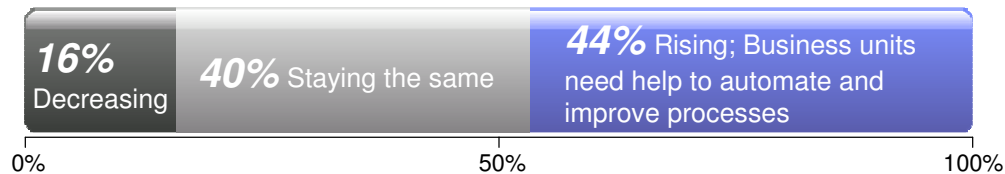
4 BPM & Business Rules working together

Business leaders confirm process improvement priority

- CIOs expect process improvement demands to **increase**

| 16% Decreasing | 40% Staying the same | 44% Rising; Business units need help to automate and improve processes |

0%   50%   100%

Demand for IT to improve processes during the recession

2009 InformationWeek Survey

Process improvement is the **#1** business priority

2009 Gartner CIO Survey

# We face the challenge of accelerating market shifts

- Rising consumer expectations compel improvements in speed and personalization

- Rapid swings in economic and commodity markets highlight lack of adaptability

- Lower barriers to entry in a digital, flat world, enable fast and easy access by new competitors

To optimize business performance, organizations must learn to dynamically adapt and respond with agility-enabled technology

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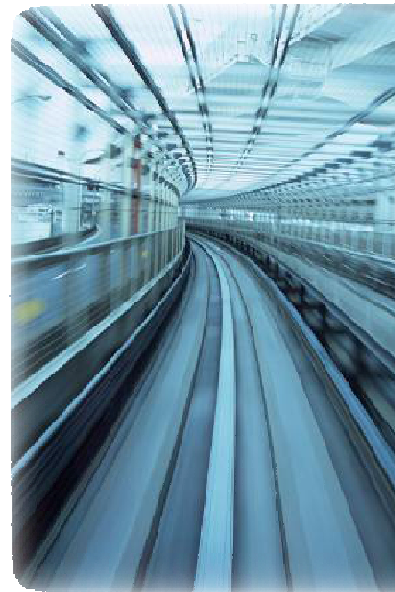
Silos inhibit agility and performance
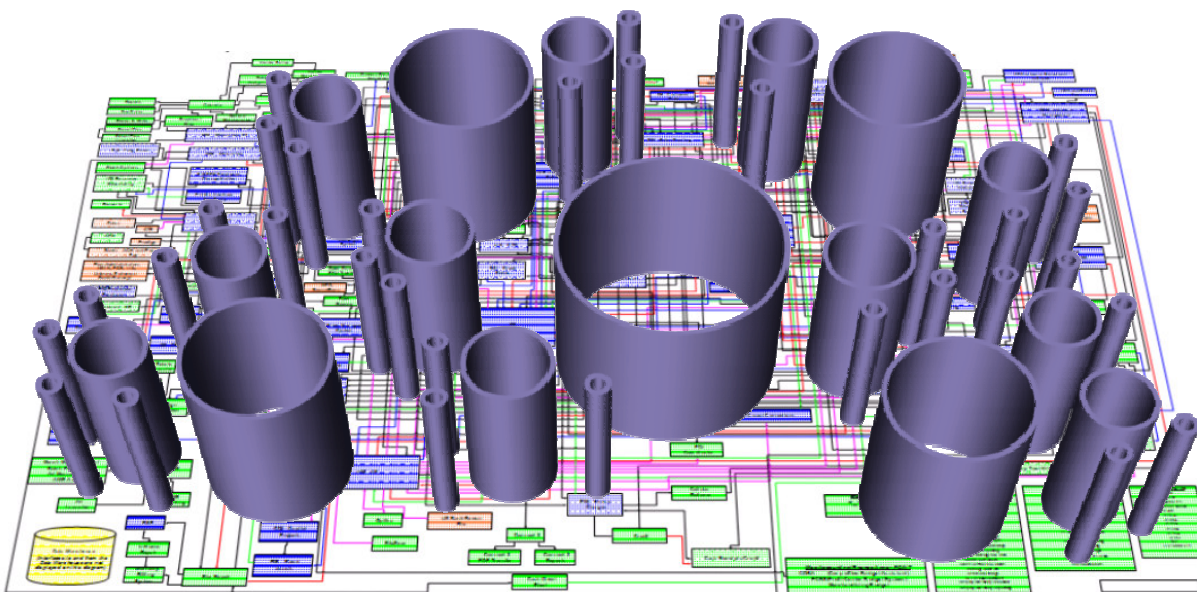
How do businesses build agility to adapt and respond dynamically?
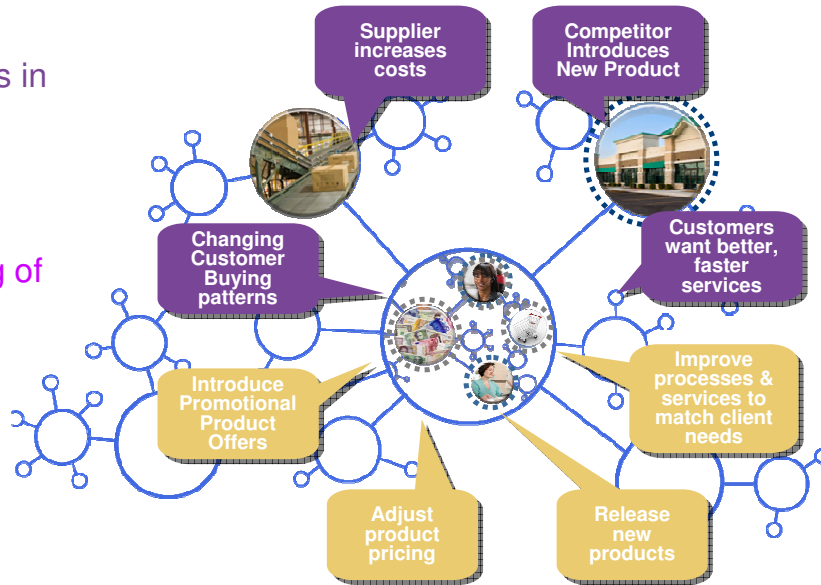
Achieve greater business agility through embedding flexibility and intelligence

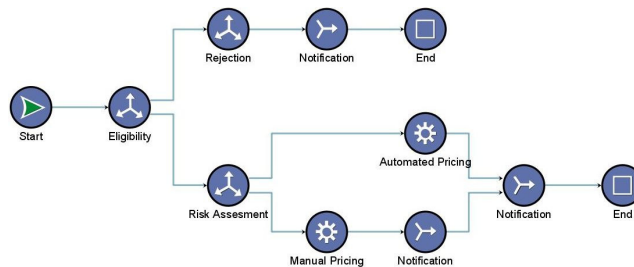Be aware of changes in marketplace

Improve decision making through a better understanding of business conditions

React quickly using greater flexibility to enhance processes and business services

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Change Requirements for Processes

Process designed to handle change in process flow, but not variability

- Variability in channels
  - Add new channel with some unique requirements for services, decisions

- Variability on decisions & rules
  - New Validation / Eligibility Rules
  - New Pricing / Quoting Rules / Model
  - New regulations

- Variability on service selection
  - Different Services chosen by SLA
  - Change Service Providers

- Variability on Human tasks
  - Which person in role is assigned task based on skills, current work queue, availability
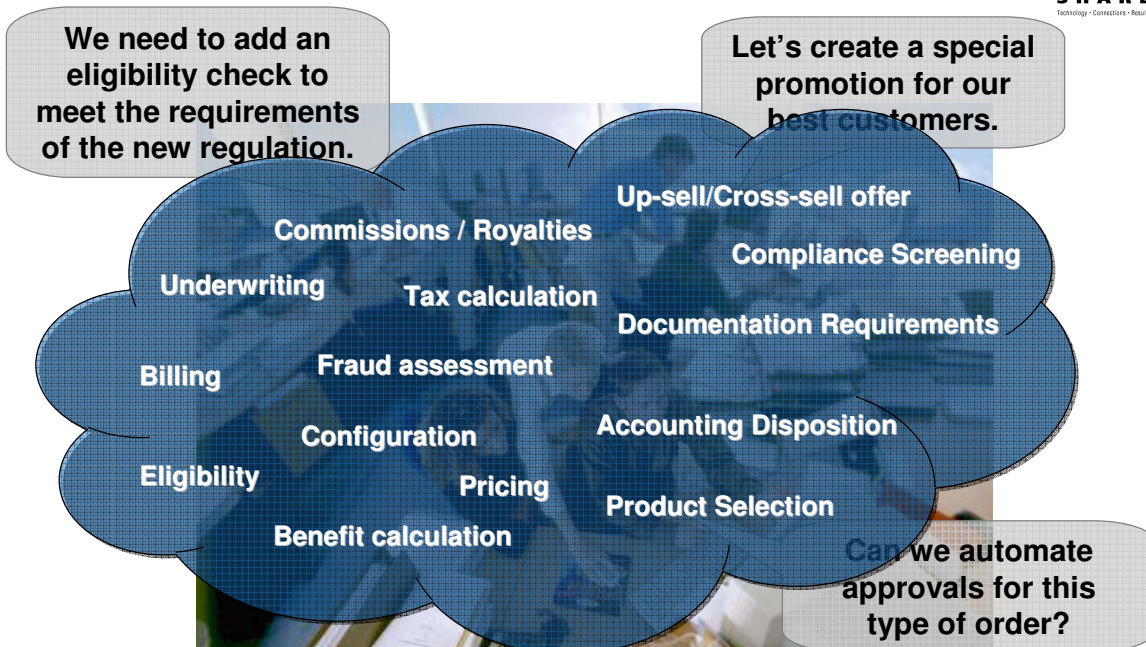
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Business Decisions are Everywhere…

We need to add an eligibility check to meet the requirements of the new regulation.

Let's create a special promotion for our best customers.

Up-sell/Cross-sell offer

Commissions / Royalties

Compliance Screening

Underwriting

Tax calculation

Documentation Requirements

Billing

Fraud assessment

Accounting Disposition

Configuration

Eligibility

Pricing

Product Selection

Benefit calculation

Can we automate approvals for this type of order?

And Changing Frequently

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Traditional Approach for Managing Decision Change

The traditional (ad hoc) approach of dealing with rule changes leads to…

- Reduced organizational agility
- Reduced employee productivity
- Increased load on IT

Where Business Rules Typically Exist
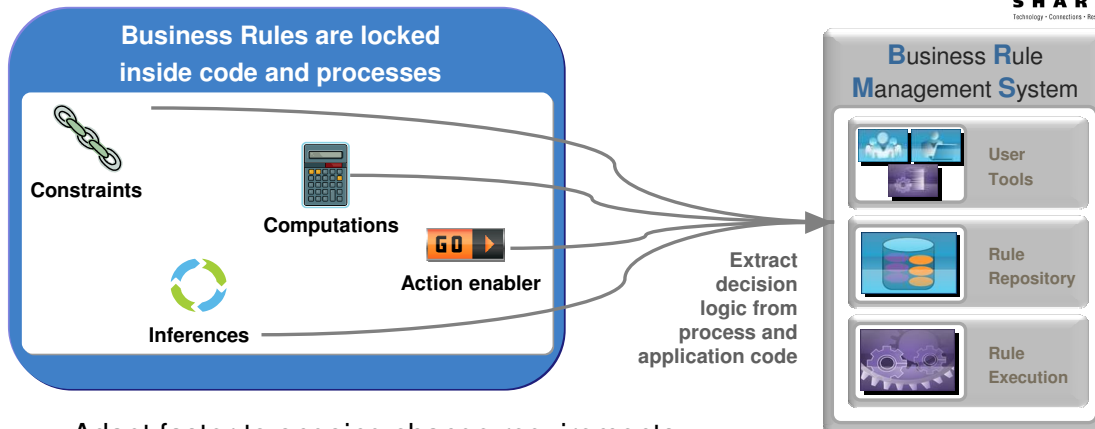
Applications

Documents

People

Processes

Issues

- Rules are hidden in code or isolated within the organization
- Changes are hard to track and maintain over time
- Rules used by systems have to be programmed and require IT resources
- Duplication and multiple versions of the same rules
- Lack of auditability, traceability
- Decision changes cannot be easily tested or simulated

A More Agile Approach with BRMS

Business Rules are locked inside code and processes

Constraints

Computations

GO

Action enabler

Inferences

Extract decision logic from process and application code

Business **R**ule **M**anagement **S**ystem

User Tools

Rule Repository

Rule Execution

- Adapt faster to ongoing change requirements
  - Respond to customer and industry demands by deploying rule changes independently from potentially lengthy maintenance cycles
- Reduce load on IT development
  - Express decision logic in business language terms to enable your business experts to participate in rule changes
  - Validate rules execution without the need to retest the whole process

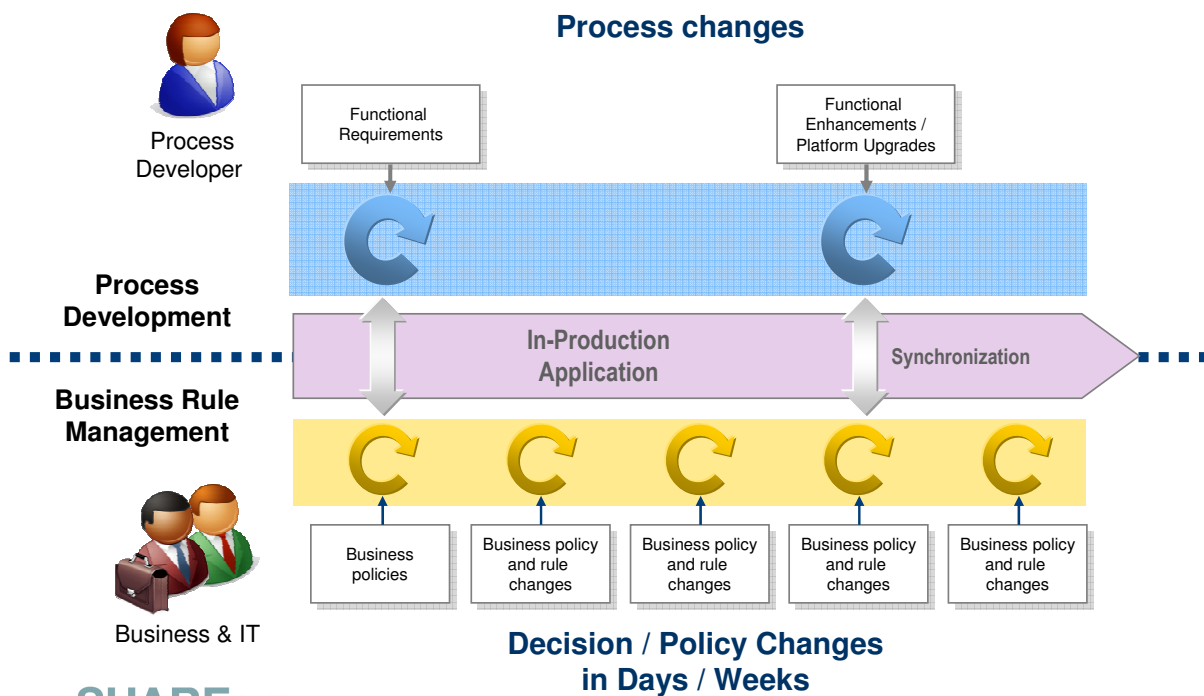# A Business Rule Management System
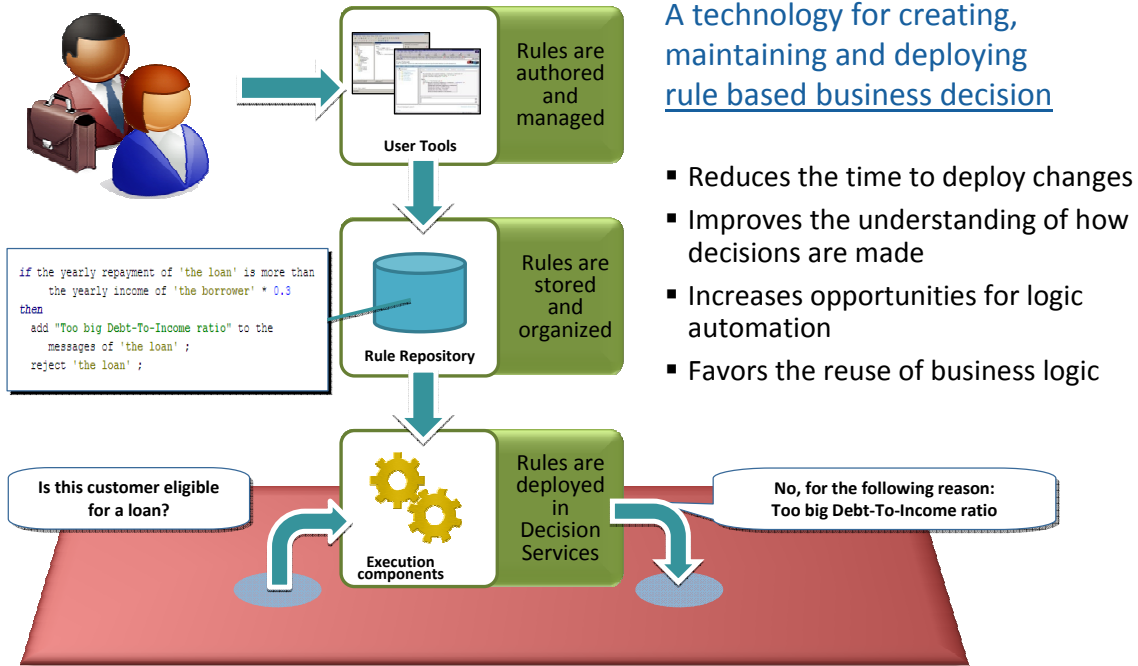
A technology for creating, maintaining and deploying rule based business decision

- Reduces the time to deploy changes
- Improves the understanding of how decisions are made
- Increases opportunities for logic automation
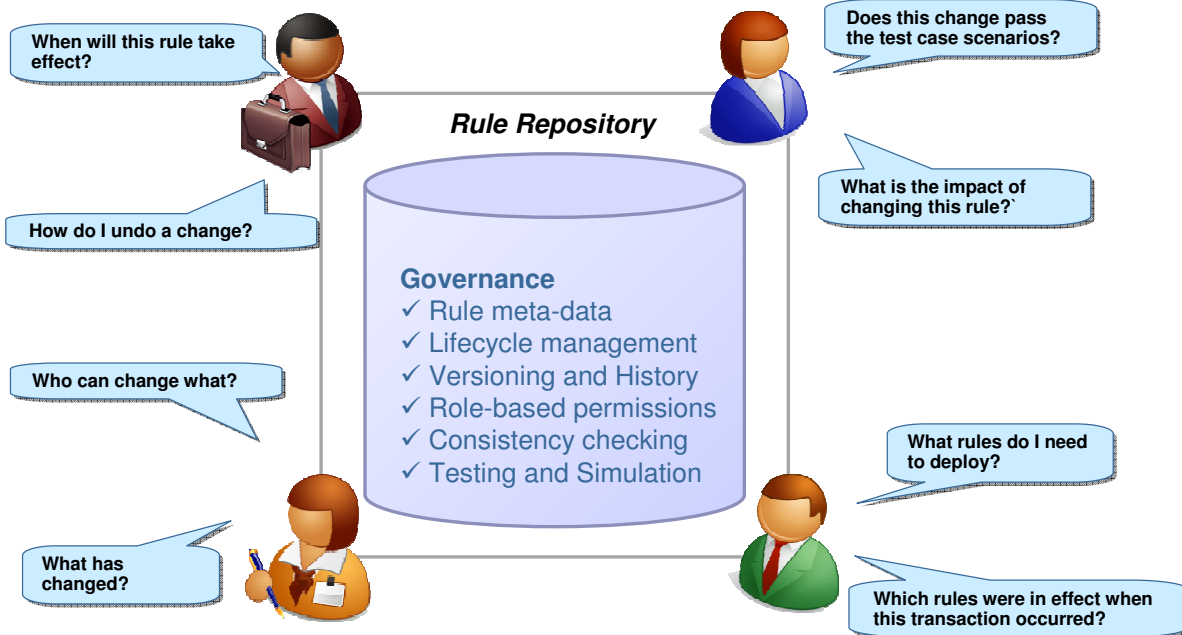- Favors the reuse of business logic

Rules are authored and managed

User Tools

```
if the yearly repayment of 'the loan' is more than
    the yearly income of 'the borrower' * 0.3
then
    add "Too big Debt-To-Income ratio" to the
    messages of 'the loan' ;
    reject 'the loan' ;
```

Rules are stored and organized

Rule Repository

Is this customer eligible for a loan?

No, for the following reason: Too big Debt-To-Income ratio

Rules are deployed in Decision Services

Execution components

Separate Application Development and Rule Lifecycles

Process changes

Process Developer

Functional Requirements

Functional Enhancements / Platform Upgrades

Process Development

In-Production Application

Synchronization

Business Rule Management

Business & IT

Business policies

Business policy and rule changes

Business policy and rule changes

Business policy and rule changes

Business policy and rule changes

Decision / Policy Changes in Days / Weeks

Comprehensive Rule Governance

When will this rule take effect?

How do I undo a change?

Who can change what?

What has changed?

Does this change pass the test case scenarios?

What is the impact of changing this rule?`

What rules do I need to deploy?

Which rules were in effect when this transaction occurred?

Rule Repository

Governance
- ✓ Rule meta-data
- ✓ Lifecycle management
- ✓ Versioning and History
- ✓ Role-based permissions
- ✓ Consistency checking
- ✓ Testing and Simulation

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Traditional Software Lifecycle

Business

Analyst

IT Dev / QA

Support

Inception

Elaboration

Construction

Transition

Production

| I1 | E1 | E2 | C1 | C2 | C3 | T1 | Application Maintenance |

Build-Time

Run-Time

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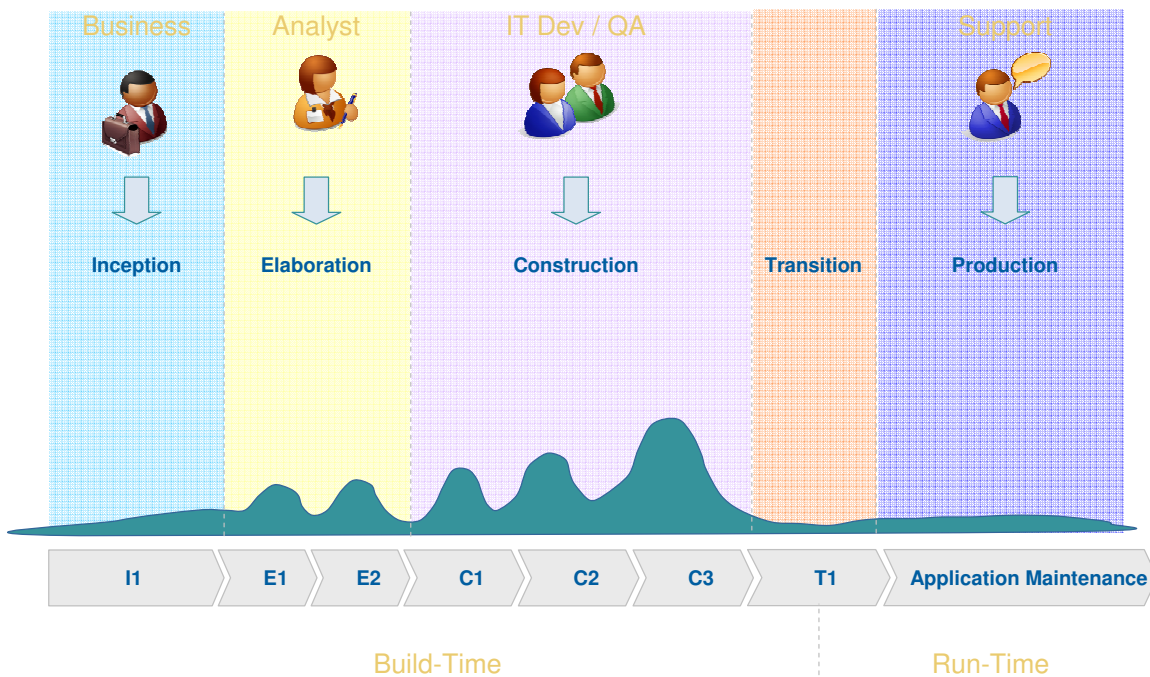
BRMS Software Lifecycle – Collaborative Working

Inception **Elaboration** **Construction** **Transition** **Production**

| I1 | E1 | E1 | C1 | C1 | C1 | T1 | **Business Rule Change Management** |

Build-Time Change-Time

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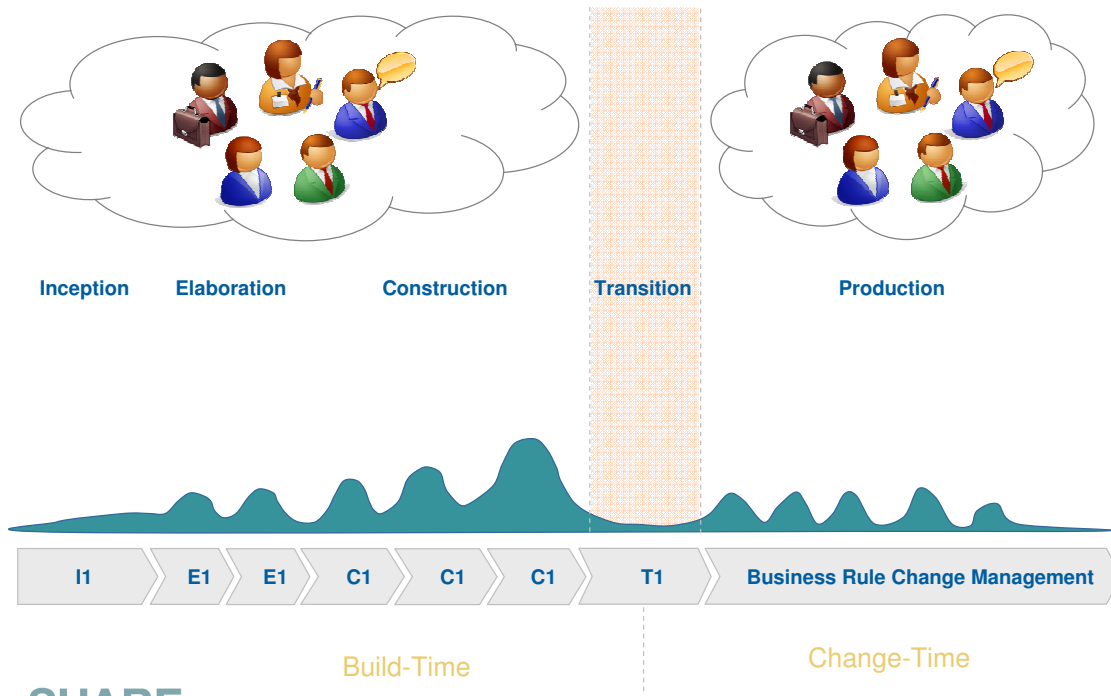
Precise, Automated Process Decisions

Horizontal: best/appropriate price, cross-sell/ up-sell recommendations, loyalty promotions, exception identification, risk/fraud assessment, straight-through processing approvals

Insurance	Banking	Healthcare	Government	Energy/Util./Telco
• Claim • Validation • STP approval • Exception routing • Policy/Underwriting • Eligibility • Risk • Pricing • Annuity • Recommendation • Commissioning • Payout calc.	• Loan • Eligibility • Risk • Pricing • Account • Cross-sell • Fraud/Alerts • Credit Card • Mkg Offers • Fraud • Credit limit	• Patient Care • Drug interaction risk warnings • Follow-up alerts • Member • Services recommendation • Eligibility • Benefit calculation • Provider • Patient eligibility for services	• Benefits • Eligibility • Calculations • Tax Payer • Classification • Audit flagging • Citizen • Program(s) recommendation	• Land/Permits • Conveyance processing • Contract compliance • Service Mgmt • Service prioritization • SLA alerts • Maintenance alerts • Order configuration

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Manage Rule-based Decisions

WebSphere ILOG BRMS is ***the IBM technology*** for creating, maintaining and implementing decision services…

- Allows for easy implementation and reuse of business rules
- Provides a convenient communication channel between IT and business teams
- Improved regulatory compliance
- Consistency in applying business decisions across applications

Reuse

Alignment

BRMS

Modernization
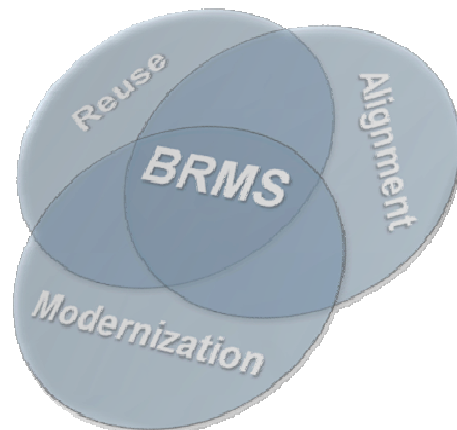
Intuitive Rule Authoring Environments

Rule Studio

Decision Tables

Point & Click

Decision Trees

Scorecards

Manage rule based decisions

## Rules Authoring Delivered to Business

Rule Solutions for Office

Microsoft® Office

Web-based Console for Rule Management

Rule Team Server

- Take control of very large rulebases with Smart Views, easy search and reporting

- See where rules are used across projects using queries

- Access rule artifacts concurrently without conflict or delay

- Represent complex policies using rule overrides and hierarchies

- Get automatic notification of potential rule conflicts, redundancies

- Hot-deploy rule changes in minutes

- Secure: integrated with enterprise security facility including single sign-on

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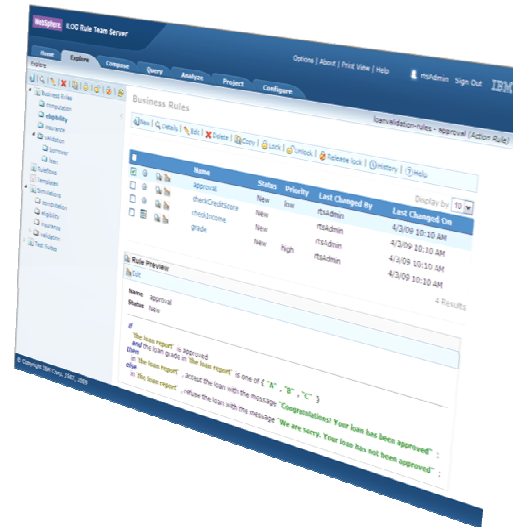
Business-focused Testing and Simulation Capabilities
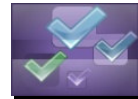
Decision Validation Services

- Decision Validation Services extends Rule Team Server with:
  - Out-of-the-box ruleset testing
  - Business impact simulation
  - Detailed scenario reports

- Scenario configuration and customization in Rule Studio

- Audit - Decision Warehouse in Rule Execution Server
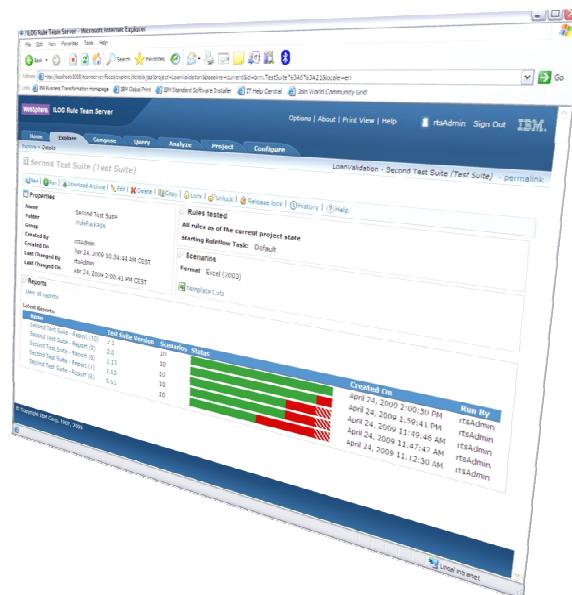
Business User Testing and Simulation

Detailed Scenario Reports

Impact and What-if Analysis

Managed Execution Environment

Rule Execution Server

- High performance and scalable rule execution
  - Support transactional and batch rule execution
  - Inference (forward-chaining) and sequential rule engine
  - Cluster enabled
- Integrate with Java, XML, WSDL
- Exposes rule services as:
  - Rule Session (POJO, EJB or MDB)
  - Transparent Decision Services (Web services)
- Rule services management & monitoring
  - Rule Persistence and Versioning
  - Rule Execution statistics & trace
  - JMX-based administration console
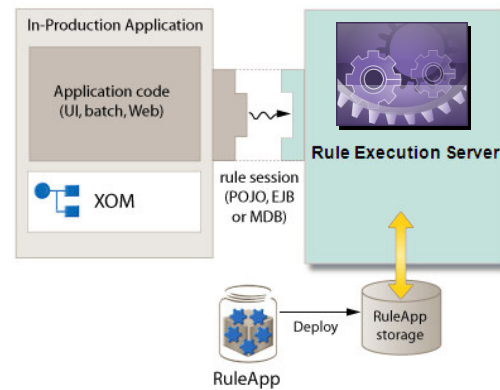
Business Rules as Decision Services

Transparent Decision Services

Transparent Decision Service consumer application

boolean *checkEligibility* (Customer cust)
Risk *getScore* (CreditRequest request)

SOAP

Rule Execution Server

Hosted Transparent Decision Service

Rule Execution

WebSphere ILOG JRules
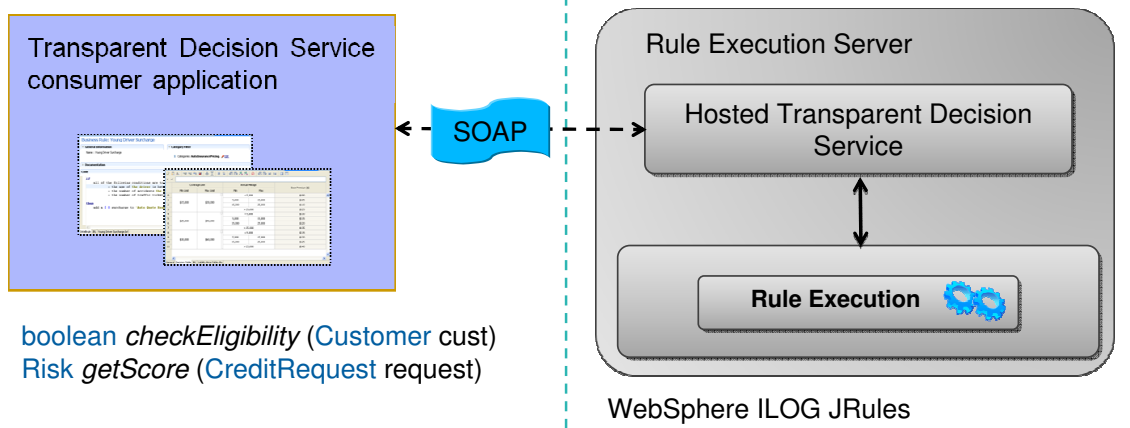
Rule Execution Server makes SOA-style integrations easy by allowing you to expose any ruleset that processes XML as a Web service **out-of-the-box and with no coding**

The Lustratus BRMS Maturity Model

Rules Based Enterprise
- Full enterprise operations based on cross domain shared rules
- Rules based compliance management, audit & governance

Business Driven
- Business units create and manage rules
- Optionally, IT still controls deployment

Direct Business Interaction
- IT builds rules but business units can edit them as necessary

Development / Business Collaboration
- IT shares and discusses rules with business units

Development Efficiency
- IT Drive rule usage, to make maintenance quicker and easier

http://www.lustratusresearch.com/store/product/Using-business-rules-with-CICS-for-greater-flexibi,215,0.aspx

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DNA of the Agile Enterprise

Process Management
- Defines and orchestrates the end-to-end process
- Combines automatable and human elements
- Is fundamentally concerned with operational efficiency of the organization
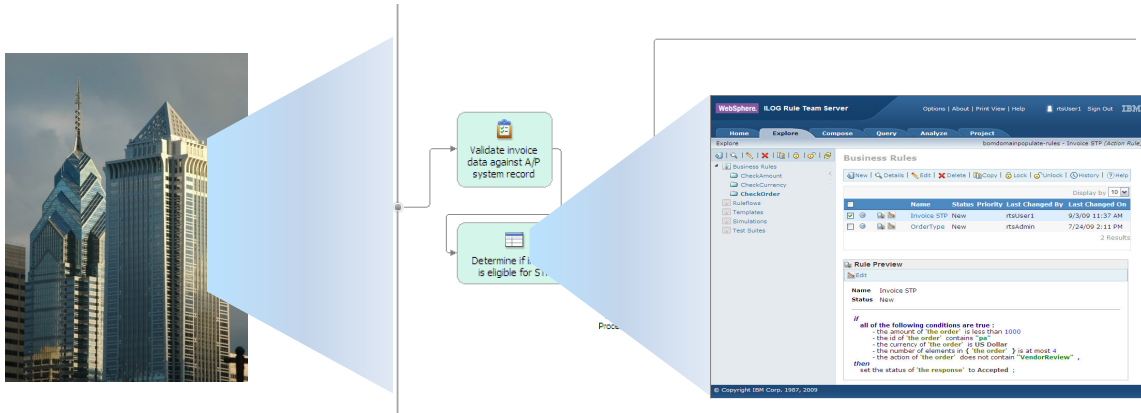
Rules Management
- Defines and executes specific decision points in processes and applications
- Is focused on automating and improving decisions
- Is fundamentally concerned with the operational intelligence of the organization

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Engage and support separate life cycles

- BPM and BRMS do not typically share the same velocity of change
- BRM typically has a tighter feed-back loop than a process

BPM Process Life Cycle

BRM Decision Life Cycle

Model

Manage

Assemble

Deploy

Longer cycles for BPM

Model

Monitor & Analyze

Author & Test

Deploy

Shorter faster cycles for BRM
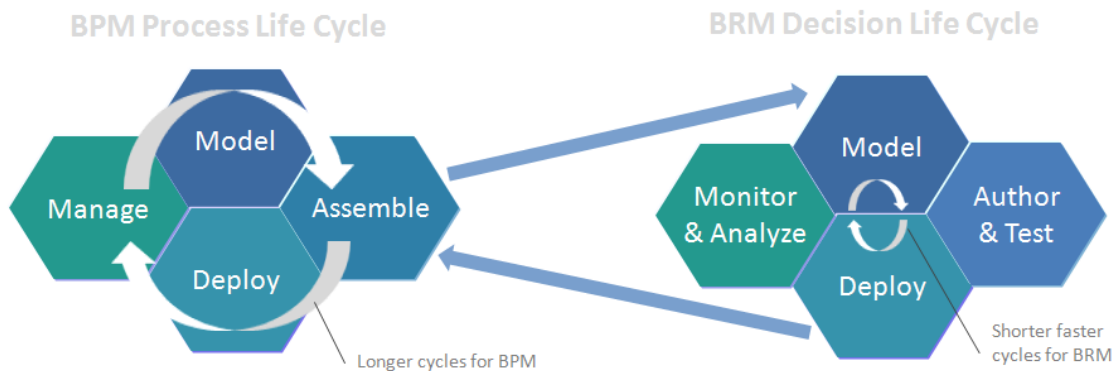
* The main integration point between the two life cycles is during the assembly phase of a process. A deployed decision may be used as an input or a new interface may be created that can be used to create a new rule project based on the data model.

European P&C Insurance Company

- Chose <u>the claims process</u> as the best target for Nordic-level unification and automation

- Combination of WebSphere BPM and WebSphere ILOG BRMS to achieve:
  - ✓ Decreased the cost of claims
  - ✓ Increased of customer satisfaction through faster turnaround
  - ✓ Substantial savings of employee work

- Uses of BRMS in this solution:
  - Claims submission validation
  - Decision automation for liability and compensation
  - Payment calculation
  - Straight-through processing determination
  - ***Manage and automate decision variation across countries, processes and systems***
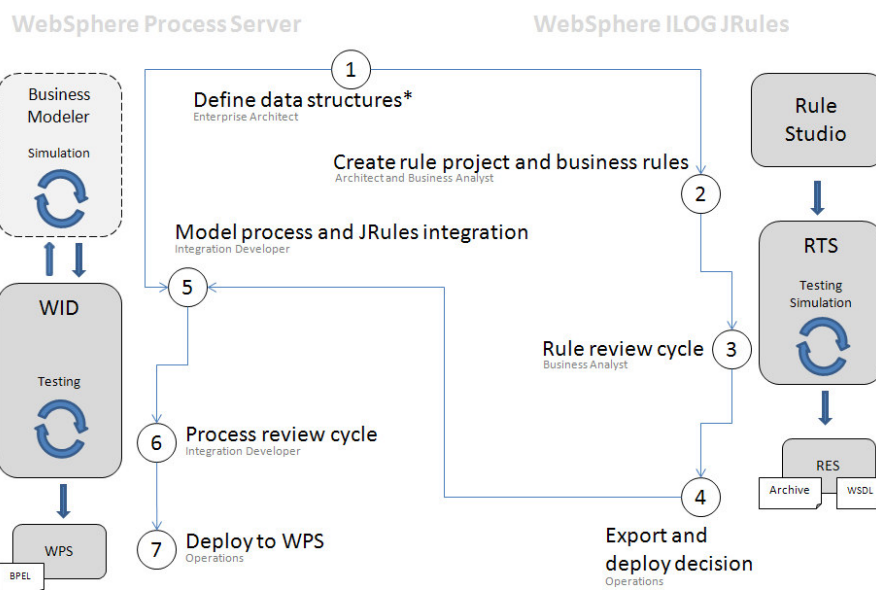 - ***Accelerate implementation of decision changes***

3 out of 5 private claims are settled in the same day they are received!

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Basic Integration Use Case

WebSphere Process Server   **WebSphere ILOG JRules**

1. Define data structures*
   Enterprise Architect

   Create rule project and business rules
   Architect and Business Analyst

   Model process and JRules integration
   Integration Developer

Business Modeler — Simulation

WID — Testing

Rule Studio

RTS — Testing Simulation

Rule review cycle
Business Analyst

Process review cycle
Integration Developer

Export and deploy decision
Operations

RES — Archive / WSDL

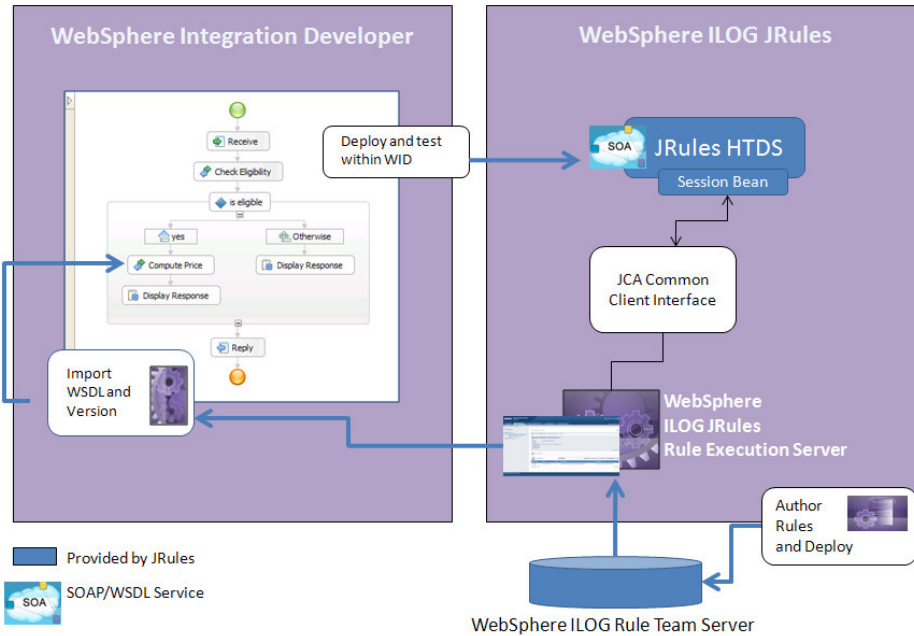WPS — BPEL

Deploy to WPS
Operations

* Both Business Modeler and WID have facility to model data but are not required for this step.
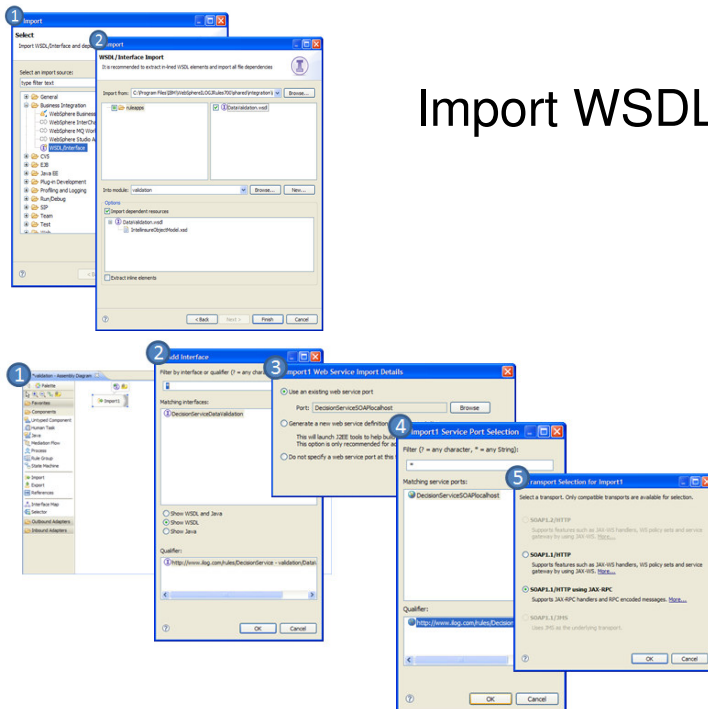
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Web Service Integration (WSDL)
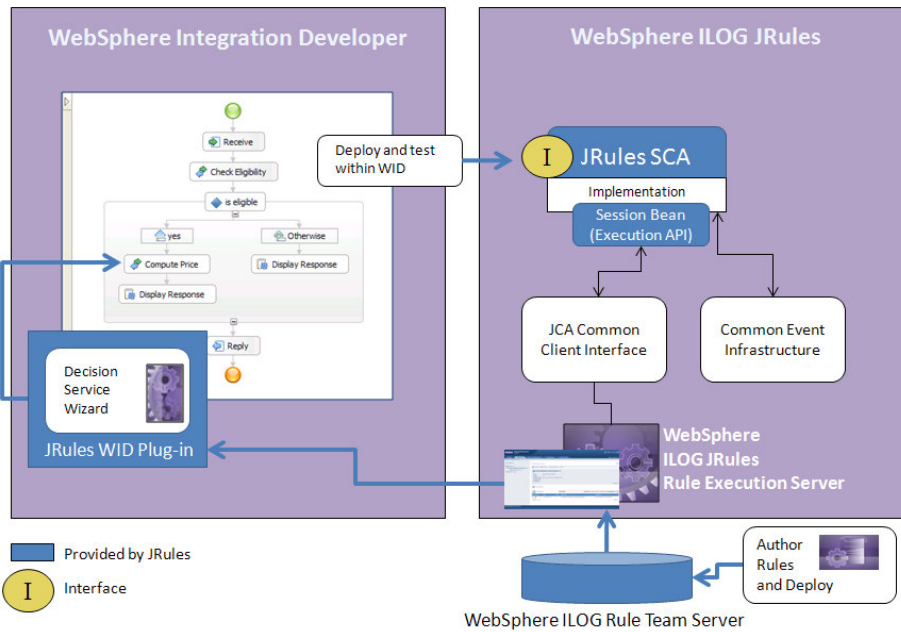

(HTDS=Hosted Transparent Decision Service)

Integrate JRules decisions with no coding using Web Services
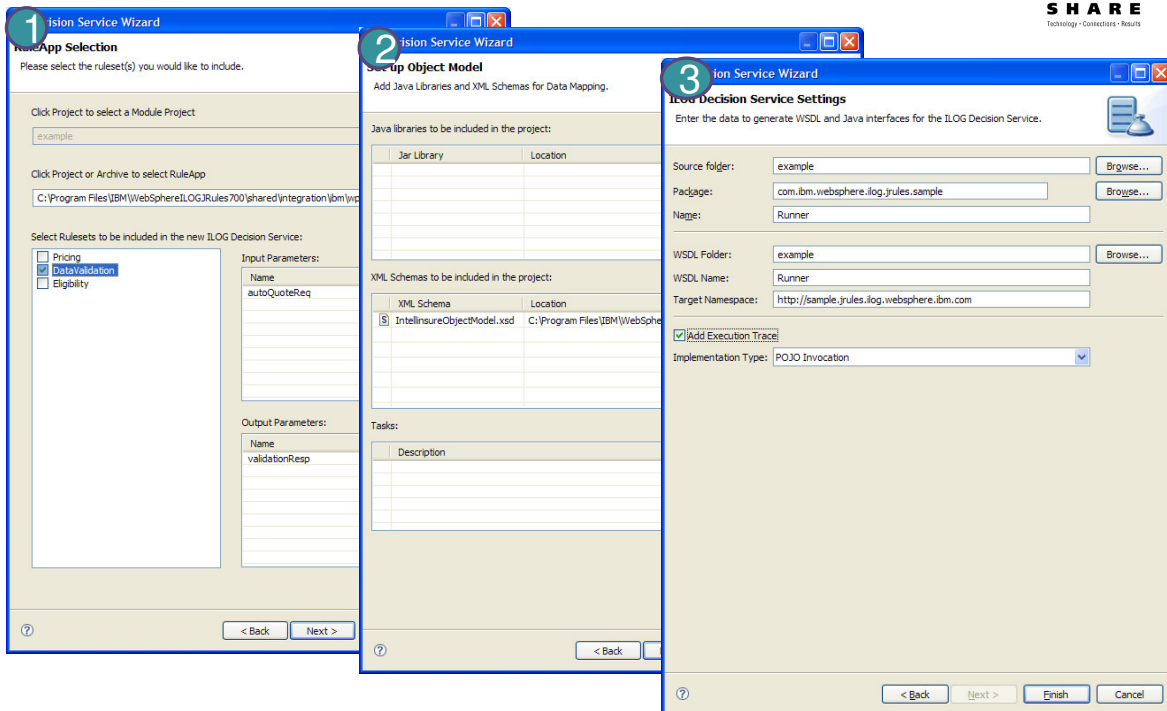

Import WSDL

Assemble

Decision Service Wizard (SCA)

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# Integrate with a wizard…

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## Solving business problems based on orientation

BPM orchestrates and improves business processes
- Flow orientation
- Human orientation
- Process oriented transparency—driving awareness and improvement of business processes to an increased set of stakeholders
- Crosses system and organization boundaries
- Long and short running
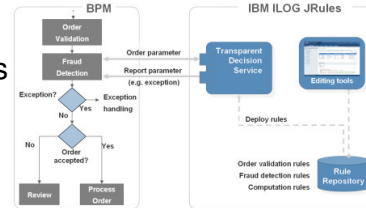
BRM expresses and automates business decisions
- Data orientation
- Encapsulates to a single boundary of a decision
- Promotes reuse for any client (BPM and otherwise)
- Increases visibility of decisions driving critical business applications and processes
- Straight through processing
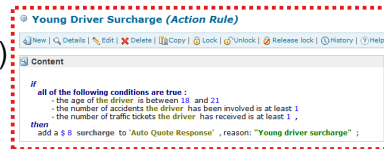
Further Information

- Exploring WebSphere ILOG JRules Integration with WebSphere Process Server:
  - http://www.ibm.com/common/ssi/fcgi-bin/ssialias?infotype=SA&subtype=WH&appname=SWGE_WS_WS_USEN&htmlfid=WSW14087USEN&attachment=WSW14087USEN.PDF

- WebSphere Process Server and ILOG JRules Technical Integration White Paper:
  - http://www-01.ibm.com/support/docview.wss?rs=4043&context=SS6MTS&dc=DA480&uid=swg27016344&loc=en_US&cs=utf-8&lang=en

- JRules - WPS Integration SupportPac (LA71):
  - http://www-01.ibm.com/support/docview.wss?rs=4085&q1=xa03&uid=swg24023444&loc=en_US&cs=utf-8&lang=en

- Integrate IBM FileNet P8 BPM with IBM WebSphere ILOG JRules with Web services
  - http://www.ibm.com/developerworks/data/library/techarticle/dm-1004filenetbpmjrules/index.html

- WebSphere ILOG BRMS on IBM.com:
  - http://www-01.ibm.com/software/websphere/products/business-rule-management/
  - http://ltsbwass001.sby.ibm.com/cms/developerworks/websphere/zones/brms/index.html