



RED HAT  
**FORUM**  
Europe, Middle East & Africa



# Red Hat JBoss BPMS & Success Story with BRMS

**Tal Portal**

JBoss Enterprise Consultant/Matrix

# Agenda

- ❖ **JBoss BPM Suite (BPMS)**
  - ❖ Introduction
  - ❖ BPM Suite Components
  - ❖ BPM Key features
  - ❖ BAM - Reporting
- ❖ **Success story with BRMS**

# BPMS (BPM Suite) - Introduction

- **Open source business process management suite (jbpm+drools)**
- **Combines BPM and BRMS**
- **Enables business and IT users to create, manage, validate, simulate, and deploy Business Processes and Rules.**
- **Light-weight process engine (Standards-based BPMN2.0 execution)**
- **Both developers and business users**
- **Cloud ready, OpenShift cartridge**

# BPMS (BPM Suite) - Introduction

## A combination of

- **Modeling** - Identify, define, and make a representation of the complete process
- **Automation** - The work that is done to assure the smooth execution of the process instances
- **Execution** - Instances of a process are performed
- **Control & Measurement** - Making sure that the process follows the designed course and determine how well the process is working
- **Optimization** - discipline of BPM is an ongoing activity that builds over time to steadily improve the measures of the process.

# BPMS - Components

## JBOSS BPM Suite

Development  
and tooling

Developer  
Studio

**Modeling tools**

Authoring, testing,  
deployment

**Repository**

git, Version control

**Management  
and  
Monitoring**

**Business  
activity,  
Monitoring  
reporting**

**Business  
Rules**  
Declarative  
Inference Rule  
Declaration

**Business  
Process**  
BPMN 2.0  
Automation

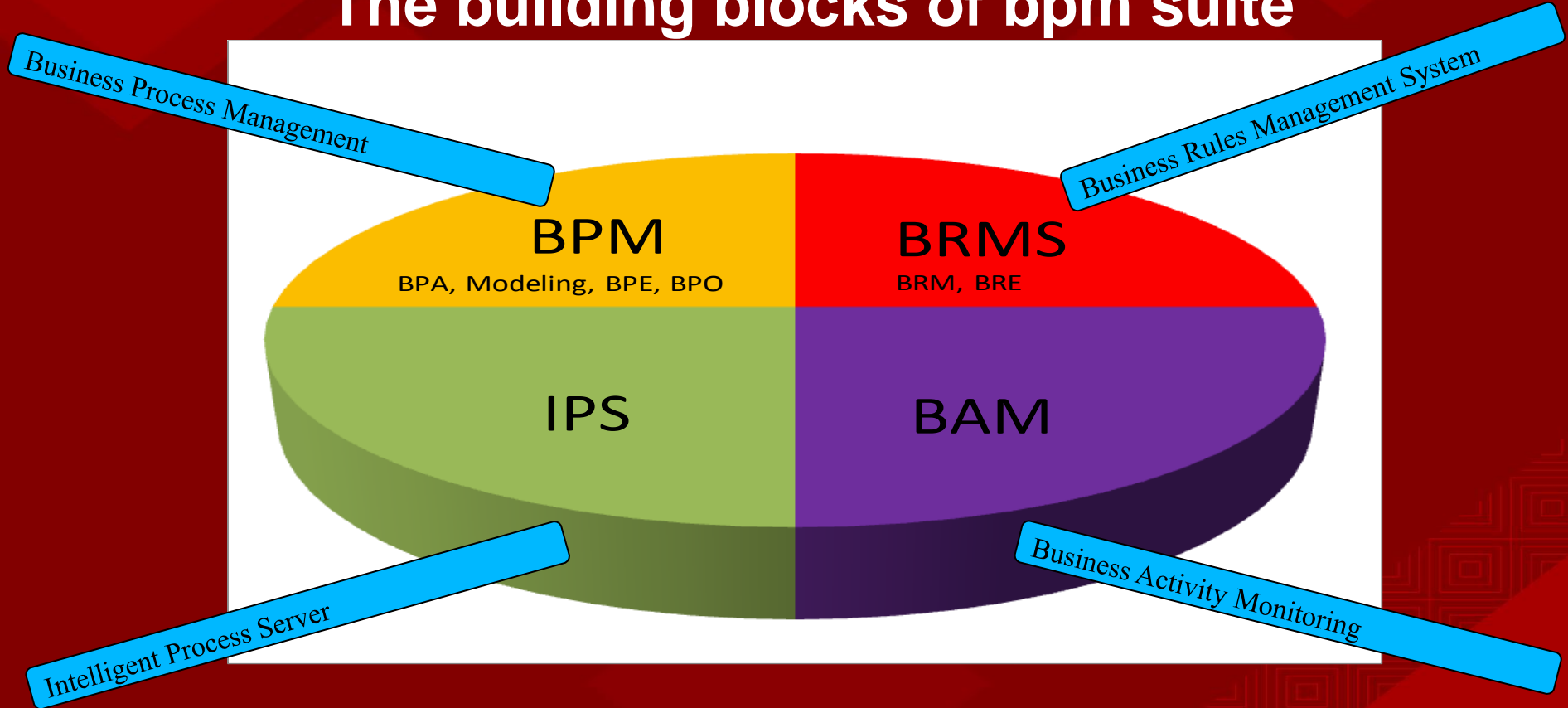
**CEP**  
Temporal  
reasoning

**Container**

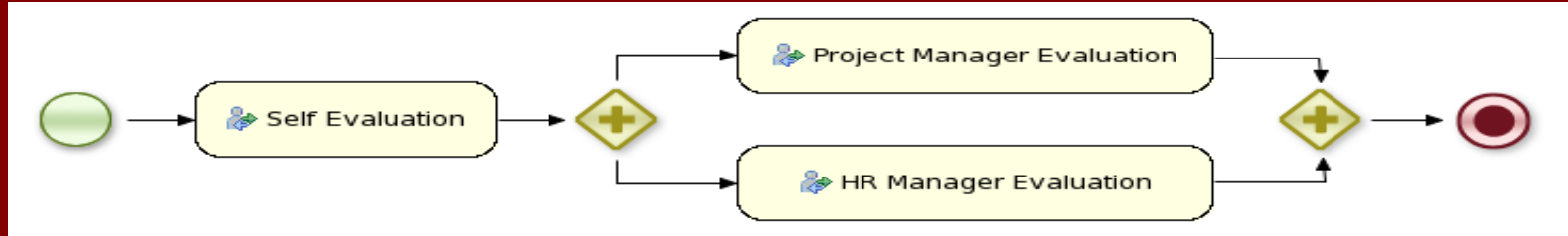
Stand alone JVM, Full EE container  
SOA runtime

# BPMS - Components

## The building blocks of bpm suite



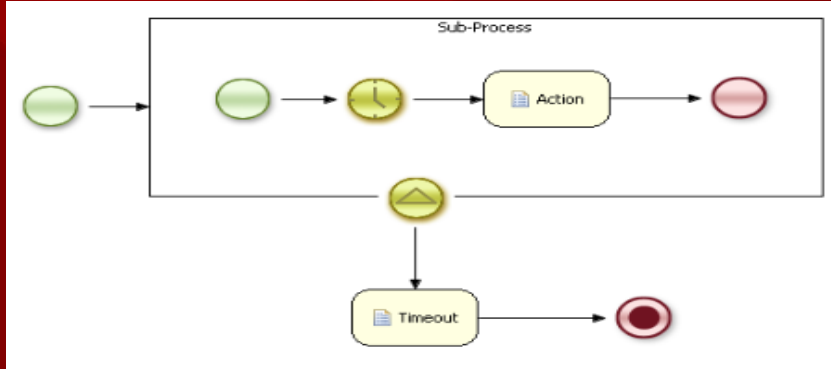
## What is Business Process



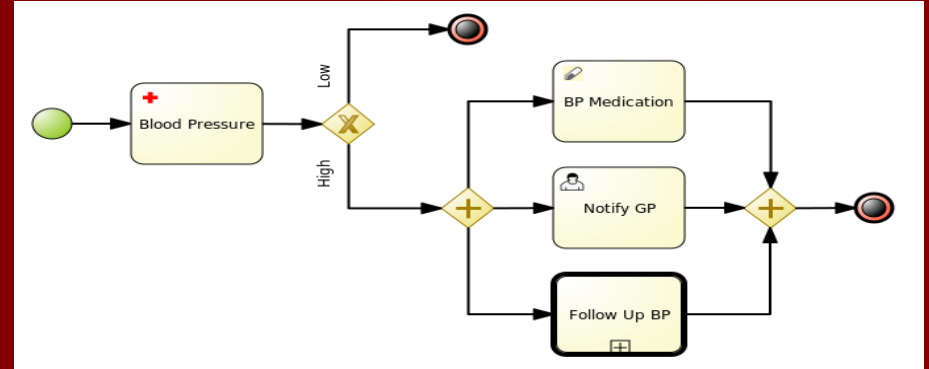
A **business process** - process that describes the order in which a series of steps need to be executed, using a flow chart.

# BPMS - Key features

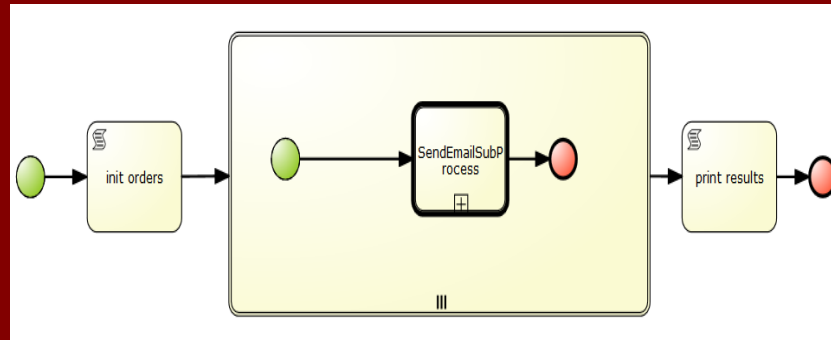
## Timer - Timeout, Interval execution



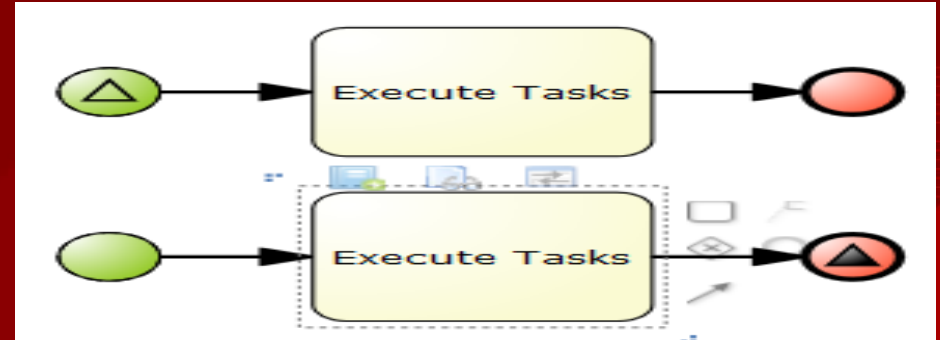
## Custom Nodes - Custom Implementation



## Sub Process (Multiple) Execution



## Signals - Start, End, Wait



# BPMS - Key features

## Business Central – Create, Manage, Deploy, Execute and Monitor Processes + Rules

The screenshot shows the Red Hat JBoss BPM Suite 6 web application interface. The browser address bar shows the URL: localhost:8080/business-central/org.kie.workbench.KIEWebapp/KIEWebapp.html?org.kie.workbench.common.screens.home.client.HomePresenter. The application header includes the title "RED HAT JBOS BPM SUITE" and navigation menus for Home, Authoring, Deploy, Process Management, Tasks, and Dashboards. A search bar is located in the top right corner. The main content area features a large heading "Welcome to JBoss BPM Suite 6" followed by a sub-heading: "A unified platform for building Realtime Intelligent Business Process Management Solutions. One place to model, deploy, execute, manage and monitor business activities." Below this, there are five main functional areas: Model, Deploy, Manage Processes, Manage Tasks, and Monitor. The "Model" section is expanded, showing "Create Projects and Model Business Assets." and "Design Business Assets:" with a list of asset types: Business Processes, Data Models, User Forms, Business Rules, and Simulations. To the right, there are two diagrams: "We provide an all-in-one framework for organizing and deploying projects:" and "An example project structure:". The first diagram shows a hierarchy of Organizations, Repositories, Projects, and Packages. The second diagram shows a "Retail Banking" project structure with "Loan Processing" containing "New Mortgages" (with "Mortgage Approval" sub-task) and "Refinancing" (with "Refi Approval" sub-task).

Red Hat JBoss BPM Suite 6

A unified platform for building Realtime Intelligent Business Process Management Solutions.  
One place to model, deploy, execute, manage and monitor business activities.

Model	Deploy	Manage Processes	Manage Tasks	Monitor
Create Projects and Model Business Assets.	Create and Manage Deployments.	View and Manage Process States.	View and Take Actions on Assigned Tasks.	Monitor Business Activity and Track KPIs.

Design Business Assets:

- Business Processes
- Data Models
- User Forms
- Business Rules
- Simulations

We provide an all-in-one framework for organizing and deploying projects:

- Organizations**  
Organize workspaces by group or department. Setting up groups in BRMS enables broad-level access management.
- Repositories**  
All projects and assets are stored in GIT repositories (every Organizational Unit needs to have at least one repository).
- Projects**  
A project is a collection of all the assets and information needed to build a complete functional system.
- Packages**  
All business assets are stored in package folders. Assets that work together belong in the same package.

An example project structure:

- Retail Banking**
  - Loan Processing**
    - New Mortgages**
      - Mortgage Approval
    - Refinancing**
      - Refi Approval

javascript:void(0);

# BPMS - Key features

# Business Central

RED HAT JBOSS BPM SUITE

Home ▾ Authoring ▾ Deploy ▾ Process Management ▾ Tasks Dashboards ▾ Extensions ▾

Explore ▾ New Item ▾ Repository ▾

print-hello.bpmn2 - Business Processes ▾

Save Delete Rename Copy

Editor Overview

Object Library

Choose library set:

- Full
- Tasks
- Subprocesses
- Start Events
- End Events
- Catching Intermediate Events
- Throwing Intermediate Events
- Gateways
- Service Tasks
  - Email
  - Log
  - Log22222222
  - REST
  - WS
- Connecting Objects
- Swimlanes
- Artifacts
- Workflow Patterns

Process Modelling Simulation Results Process Documentation

print-hello v.1.1 (simple-process.print-hello)

```
graph LR; Start(( )) --> PrintHello[print hello]; PrintHello --> MyTask[my-task]; MyTask --> REST[REST]; REST --> End((( )));
```

Properties (User)

Name	Value
Core Properties	
Actors	bpmsAdmin
Assignments	1 data input, 0 data outputs
Groups	
Name	my-task
Task Name	testtask
Task Type	User
Extra Properties	
Content	
Created by	
Description	
Documentation	
Is Async	false
Locale	
Multiple Insta...	false
Notifications	
On Entry Acti...	
On Exit Actions	
Priority	

# BPMS - Key features

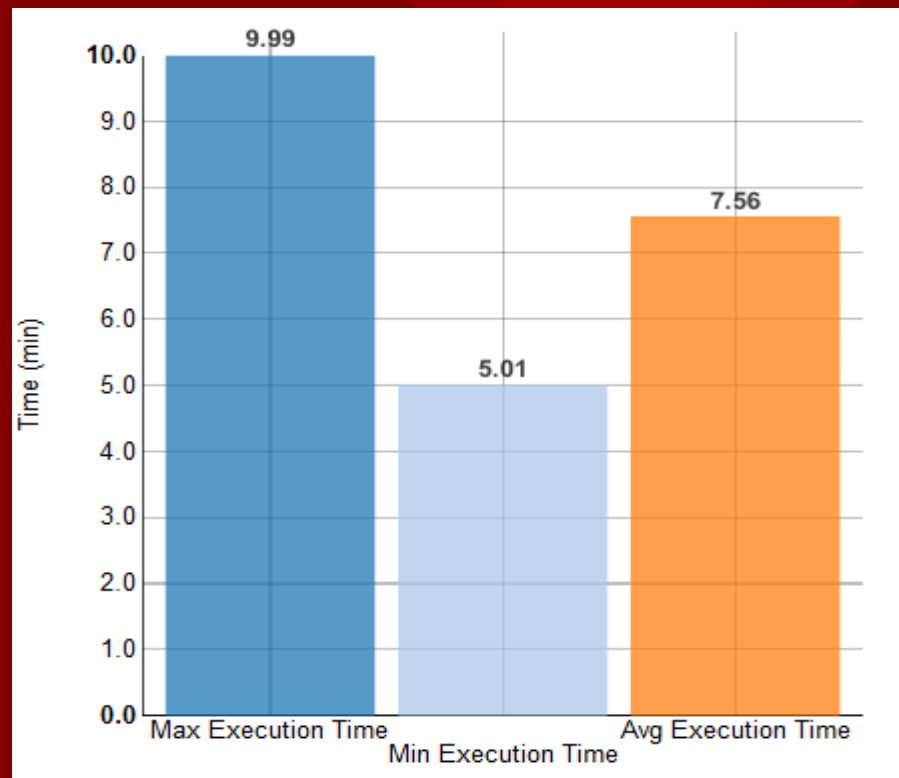
## Simulation

**Run Process Simulation**

Number of instances:













Interval:

Interval units:  ▼



# BPMS - Key features

## Process instance – monitor variables

Process Variables				
Refresh <span>✕</span> <span>▼</span>				
<b>Instance ID</b> 2				
<b>Definition Id</b> com.ford.sales.interested.customer.bpmn				
<b>Definition Name</b> InterestedCustomer				
Name	Value	Type	Last Modification	Actions
carType	פורד פיאסטה	String	05/05/2015 09:16	 
lastName	פורטל	String	05/05/2015 09:16	 
organization	מטריקס	String	05/05/2015 09:16	 
firstName	טל	String	05/05/2015 09:16	 
carColor	אדום	String	05/05/2015 09:16	 
isCustomerIsInterestedIn...		Boolean	05/05/2015 09:16	 

# BPMS - Key features

## Process instance – model view

Business Process [com.ford.sales.interested.customer.bpmn]

Instance Details

Process Modelling

InterestedCustomer v.1 (com.ford.sales.interested.customer.bpmn)

```
graph LR; Start(( )) --> Init[Init Process Data]; Init --> Rules[Business Rules to search for discount]; Rules --> Call[Call The Customer (Juan)]; Call --> Decision{X}; Decision -- "Customer refuse to buy" --> Refuse[Customer dont want to buy]; Refuse --> End1(( )); Decision -- "test drive direction" --> Test[Customer wants a test drive]; Test --> End2(( ))
```

Instance ID 1

Definition Id com.ford.sales.interested.customer.bpmn

Definition Name InterestedCustomer

Deployment com.ford:OrderProcess:1.0

Definition Version 1

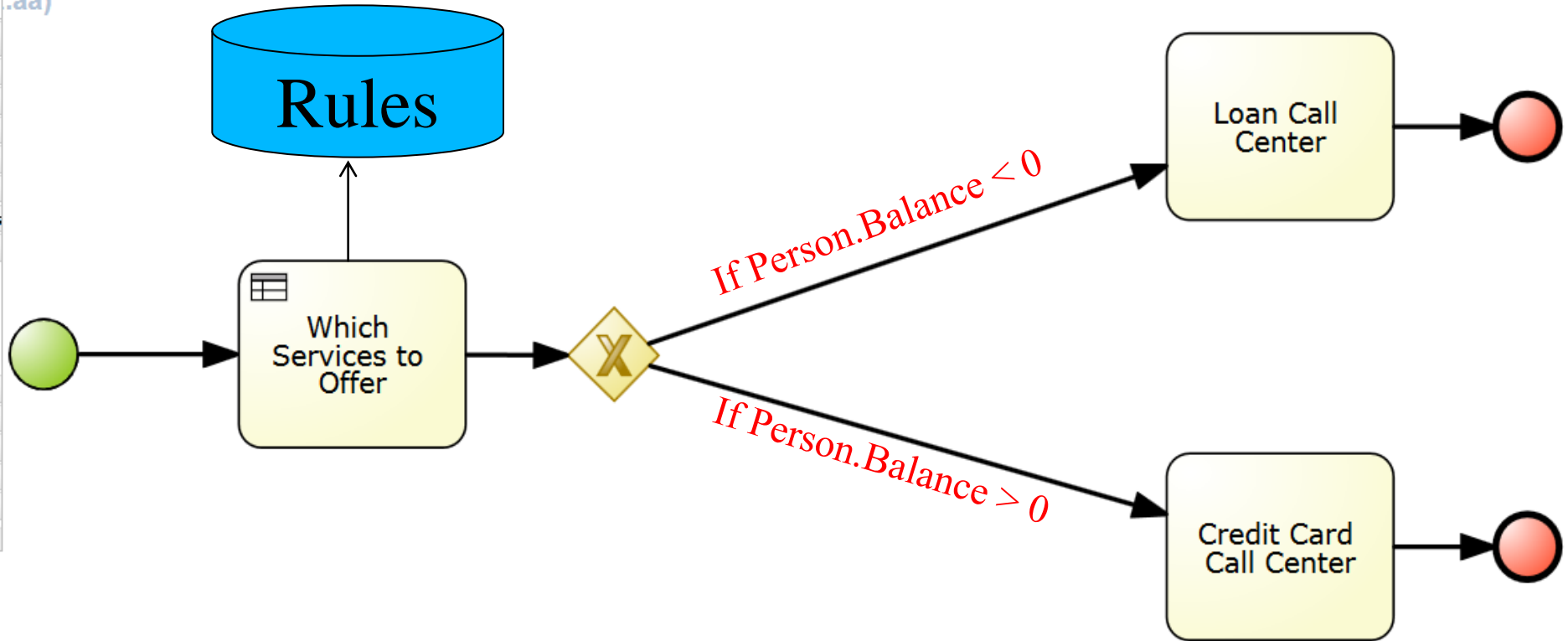
Instance State Active

Current Activities 5/3 :09:12:07 15/אי - Call The Customer (Juan) (HumanTaskNode)

Instance Log 5/3 :09:12:07 15/אי - Call The Customer (Juan) (HumanTaskNode)  
5/2 :09:12:07 15/אי - Business Rules to search for discount (RuleSetNode)  
5/1 :09:12:07 15/אי - Init Process Data (ActionNode)  
5/0 :09:12:07 15/אי - StartNode

# BPMS – BRMS Integration

.aa)



# What is a BRMS?

- ❖ **Define, Manage, Deploy, Execute and Monitor business rules**
- ❖ **Maintain separately from core application code**
- ❖ **Maintain the business decisions that influence systems behavior by business experts**
- ❖ **Increasing the organization's ability to respond to changes in the business environment.**

# What is a BRMS?

- ❖ **Validating**
- ❖ **Deploying**
- ❖ **Versioning**
- ❖ **Test Scenarios**
- ❖ **Scaling**
- ❖ **High Availability**
- ❖ **Cloud Ready**

# BRMS - Key features

## Business Central – Rules Management

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### Welcome to JBoss BPM Suite 6

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One place to model, deploy, execute, manage and monitor business activities.

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      - Refi Approval

javascript:void(0);

# BPMS - Key features

# Data Model

The screenshot displays the Red Hat JBoss BPM Suite Data Modeler interface. The main window shows the 'Data modeler' for a 'Customer' entity. On the left, the 'Project Explorer' shows a tree view with 'project1' containing 'Customer' and 'organization'. The 'Create new field' section has input fields for '\*Id' (Insert a valid Java identifier), 'Label' (Insert a label), and '\*Type'. Below this is a table of existing fields for the 'Customer' entity:

Position	Identifier	Label	Type	
0	firstName	first name	String	✕
1	lastName	last name	String	✕
2	organization	organization	String	✕
3	isVIP	is vip	Boolean	✕
4	customerDiscount	customer discount	int	✕

On the right, the 'Field' configuration panel shows details for the selected 'customerDiscount' field: Identifier: customerDiscount, Label: customer discount, Description: (empty), Type: int, Equals: (empty), Position: 4. The bottom of the interface features a 'Problems' panel with columns for Level, Text, File, Column, and Line.

# Business Rules

## When

The bank account move is more than 50k

and

The account has more than 5 moves in the past 30 days

## Then

Send alert to reports log

# Decision Tables

RED HAT JBOSS BRMS

Home ▾ Authoring ▾ Deploy ▾ Tasks ▾ Extensions ▾

Explore ▾ New Item ▾ Repository ▾

Project Explorer

matrix ▾ / demos ▾ / get-rate ▾

<default> / com / demos

Open Project Editor

DATA OBJECTS ▾

DOMAIN SPECIFIC LANGUAGE DEFINITIONS ▾

ENUMERATION DEFINITIONS ▾

GUIDED DECISION TABLES ▾

DriverPremiumCalculation

GUIDED RULES ▾

GUIDED RULES (WITH DSL) ▾

TEST SCENARIOS ▾

### DriverPremiumCalculation.gdst - Guided Decision Tables

All the rules inherit: None selected ▾

+ Decision table

Add row... Otherwise Analyze... Audit log

#	Description	enabled	גיל שווה או גדול מ	גיל שווה או קטן מ	אחוז הפרמיה
1	גיל 16 עד 25	<input checked="" type="checkbox"/>	16	25	150
2	גיל 25 עד 40	<input checked="" type="checkbox"/>	26	40	100
3	גיל 40 עד 60	<input checked="" type="checkbox"/>	41	60	80
4	גיל 60 עד 200	<input checked="" type="checkbox"/>	61	200	120

Editor Overview Source Config

### Reporting

Success

Text

# Domain Specific Language

RED HAT JBOSS BRMS

Home ▾ Authoring ▾ Deploy ▾ Tasks ▾ Extensions ▾

Explore ▾ New Item ▾ Repository ▾

Project Explorer

matrix ▾ / demos ▾ / get-rate ▾

<default> / com / demos

Open Project Editor

DATA OBJECTS ▾

DOMAIN SPECIFIC LANGUAGE DEFINITIONS ▾  
PremiumDSL

ENUMERATION DEFINITIONS ▾

GUIDED DECISION TABLES ▾

high-risk-with-dsl.rdslr - Guided Rules

EXTENDS None selected ▾

WHEN

1. The driver age is between 16 and 25
2. The car color is RED and Car style is SPORT
3. There is a Premium

THEN

1. Dangerous Driver
2. Increment Premium 0

(show options...)

# Quality Assurance

File Edit Status: 'Draft'

Attributes Edit

Run scenario

+ GIVEN

Insert 'LoanApplication' [application]

amount:

Insert 'IncomeSource' [incomeSource]

Insert 'Applicant' [a]

age:

+ CALL METHOD

+ EXPECT

(configuration)

+ (globals)

Add input data and expectations here.

LoanApplication 'application' has values:

approved:

# Quality Assurance

The screenshot displays the Guvnor Quality Assurance interface. On the left is a 'Navigate Guvnor' sidebar with a tree view under 'Test Scenarios in packages' containing 'Sensis' and 'defaultPackage'. The main area shows a 'Find' window for 'Scenarios for Sensis'. A green bug icon is present. The overall result is 'SUCCESS'. Two progress bars show 'Results: 100%' (0 failures out of 23 expectations) and 'Rules covered: 90%' (90% of rules tested). An 'Uncovered rules' section lists 'Row 3 Advertiser value scoring'. Below is a 'Scenarios' table with 8 rows, each with a 100% progress bar, failure counts, and an 'Open' button. A 'Close' button is at the bottom left of the scenarios section, and a 'Close all items' button is at the bottom right.

**Scenarios for package: Sensis**  
Run all scenarios

Overall result: **SUCCESS**

Results: 0 failures out of 23 expectations.

Rules covered: 90% of the rules were tested.

Uncovered rules: Row 3 Advertiser value scoring

**Scenarios**

Adv scoring sanity test:		[0 failures out of 2]	Open
Sydney advertiser ratings:		[0 failures out of 3]	Open
Basic assignment validation:		[0 failures out of 4]	Open
Overlapping assignments:		[0 failures out of 5]	Open
Allow email overlap assignments:		[0 failures out of 5]	Open
Consultant self assign authority:		[0 failures out of 1]	Open
QLD self assign:		[0 failures out of 1]	Open
No available consultants:		[0 failures out of 2]	Open

Close

Close all items

# BRMS CEP – Complex Event Processing

## Event Detection

Detect only meaningful events from an event cloud.



Collect  
Suspect  
Data

## [Temporal] Event Correlation

Ability to correlate events and declaring constraints between them.

Ability to reason over event aggregation

## Event Abstraction

Ability to compose complex events from atomic events and reason over them

# Success story with BRMS



# Customer Background

## ABOUT LASER UK

- **Markets**
  - Credit + Cards
  - Loans
  - Point of Sale Finance
  - Loyalty
  - Insurance services
  
- **Cards**



# Customer Background

## ABOUT LASER GROUP - FACTS & FIGURES

- Over 400 client partnerships.
- S'Miles - the largest multi-partner loyalty network in France with over 15 million customers.
- Management of over 20 million cards.
- More than 100 retail partnerships for point of sale services and payment systems.
- Over 1 billion Euros turnover.
- 6,000 staff throughout Europe.
- Subsidiaries in eight European countries: Belgium, Denmark, France, Poland, Portugal, Spain, the Netherlands and the UK.



# Business Challenge

## THE PROJECT - OLD SITUATION

### Credit card customers

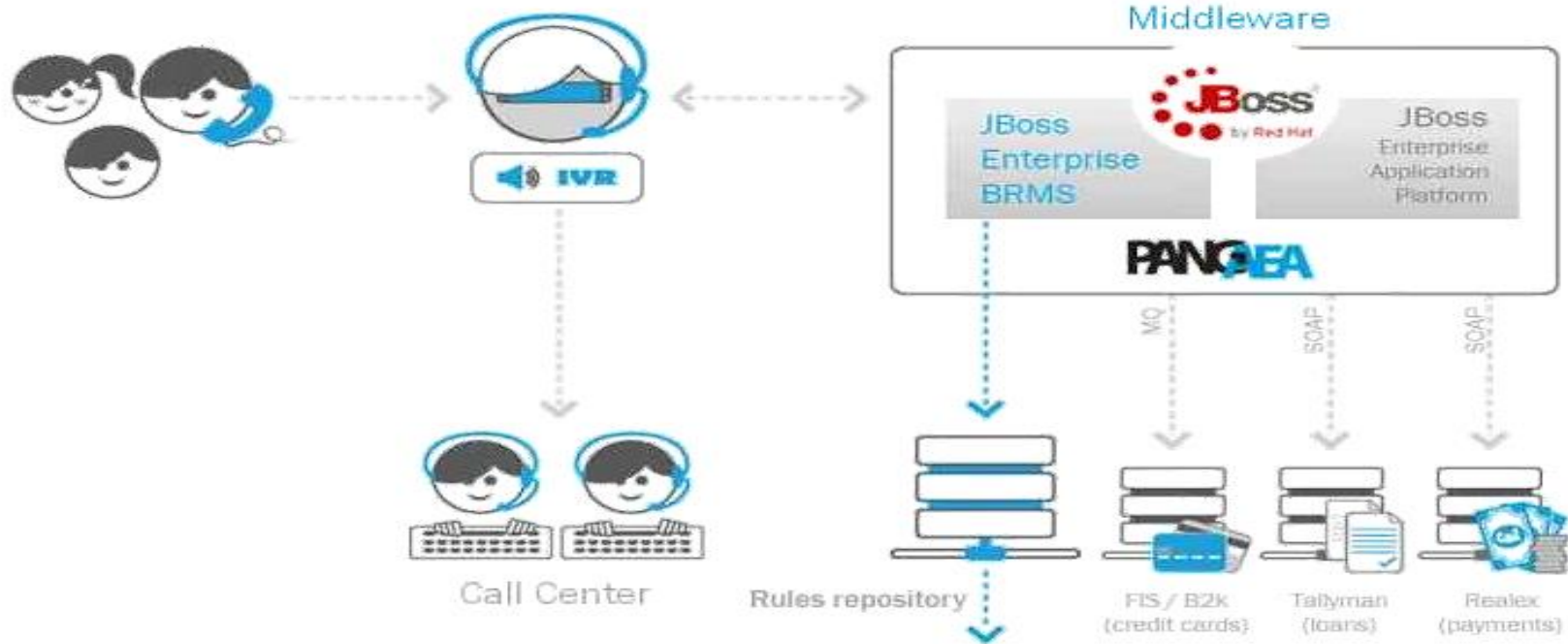


### Loan customers



# New Situation

## THE PROJECT - NEW SITUATION



## ISSUES WITH OLD SITUATION

- No integration with loan system
- No agility (changes by programmers only)
- No analysis
- No monitoring
- No usage statistics

# Customer Requirements

## REQUIREMENTS FOR NEW SYSTEM

- Additional back-end system (Tallyman)
- Integration of payment service (Realex)
- Ability to add or configure:
  - new products with zero downtime
  - new phone lines
  - interest changes
  - and more
- Adopt new regulations
- Adapt to increasing competition

# Customer Requirements

## REQUIREMENTS FOR NEW SYSTEM 2

- Supports frequent changes
- Testable by user
- Reliable
- 'Zero' downtime
- Pricing
- PCI-DSS compliant
- Audit trails
- Traceability



# Which Business Rules System To Use?

## SOFTWARE SELECTION

- Project and requirement challenges are only met by using a Business Rules Management System (BRMS).
- Which BRMS to use?

	Oracle Business Rules		JBoss Enterprise BRMS		WebSphere ILOG Jrules
--	-----------------------------	---	-----------------------------	---	--------------------------

# Which Business Rules System To Use?

## SELECTION: JBoss ENTERPRISE APPLICATION PLATFORM & JBoss ENTERPRISE BRMS

- Already familiar with the JBoss product family
- Large community
- Innovations from open source community
- Enterprise support
- Pricing
- High performance rule engine
- Feature set
  - Web based maintenance GUI
  - LDAP integration
  - Audit trails
  - Fine grained authorization
  - Eclipse IDE integration



# Who Are The Users?

## RULE MAINTENANCE

- Who is using it
  - Call center manager
  - Business analyst
  - Campaign marketer
  - System admin
  - Development team
- Preventing mistakes by testing

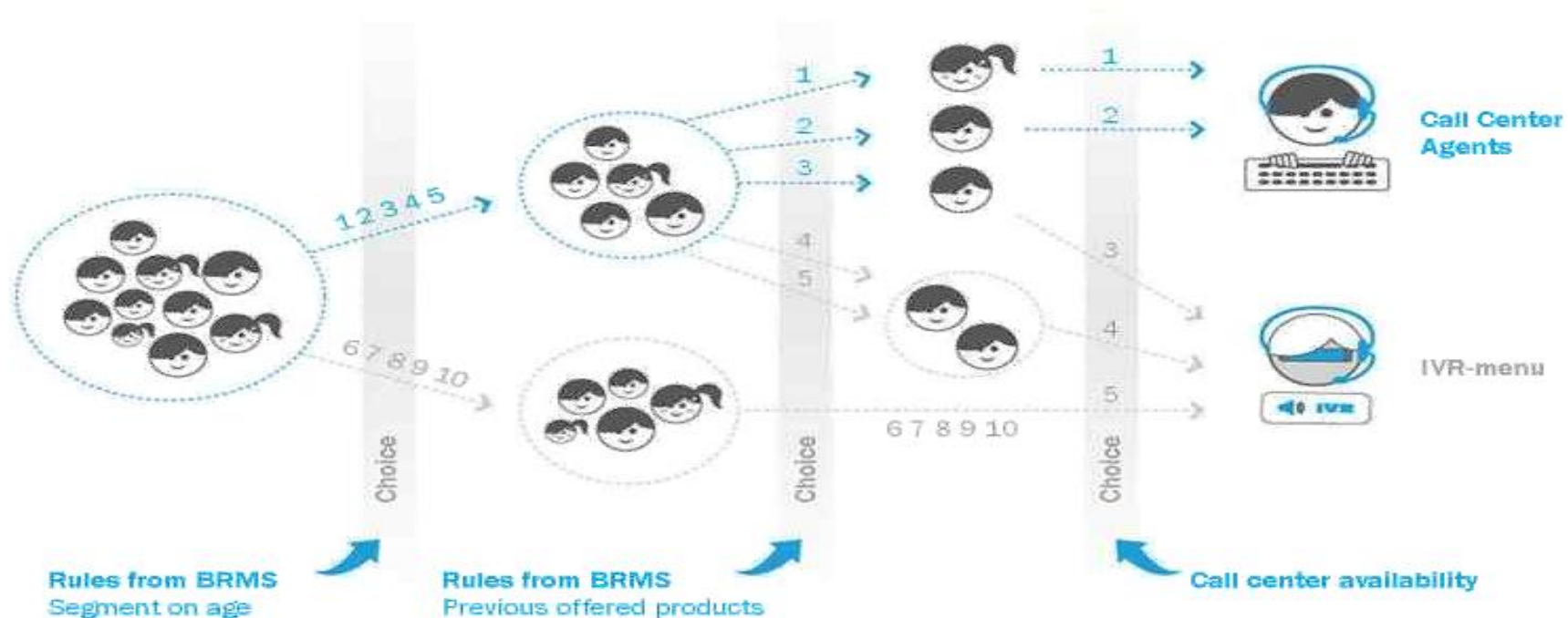
# Steps When Implementing Business Rules

## RULE PROMOTION PROCESS

- 1 Change rule / decision table in BRMS
- 2 Run scenario tests
- 3 Validate changes
- 4 Deploy changes to production in test-mode
- 5 Test changes in production using test cards
- 6 Deploy changes to production

# New Situation

## CUSTOMER SEGMENTATION



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**redhat.**

**Thank You**