



# Managing Business Rules with WebSphere JRules

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### Session A - 9:15am to 9:55am

### Session B - 10:10am to 10:50am

Stream 1

#### Managing Business Rules with ILOG Business Rules Management Systems (BRMS)

Designed for those who want to discover an easy and safe solution to automate process-based decisions with the right tools for business managers, analysts, architects and developers.

#### Enable SOA Governance with WebSphere Service Registry and Repository

Designed for those who want to learn how to easily and quickly publish, find, enrich, manage and govern services and policies in your SOA. A particular emphasis is placed on runtime aspects of the services lifecycle.

Stream 2

#### Simplify, Secure and Accelerate your SOA deployments with WebSphere® DataPower SOA Appliances

Designed for those who want to learn more about WebSphere DataPower SOA Appliances, a key element in IBM's holistic approach to SOA.

#### Untangle your SOA Connectivity Infrastructure with WebSphere Message Broker

Learn how WebSphere delivers an advanced ESB to power SOA. Intended for those who want to understand how to achieve universal connectivity and transformation in heterogeneous IT environments.



THE BANK ACCIDENTALLY GAVE HER  
\$10 MILLION, NOW SHE'S VANISHED



FIRST PHOTO

I'M RICH AND  
HAVING BEER



# What is a Business Rule?



Formal Statement of a Policy

*Business Rules* formalize policy as individual (“if-then”) causal relationships

## Example Policy

Mortgage loan applications are admissible if the loan to value ratio (LTV) is less than the threshold (commonly, 75%, except in special real-estate markets). The value of the property may be different from the purchase value, regardless of the date of purchase

## Business Rule

```
If
The status of the application is IN_PROGRESS
And the amount of loan applied for is greater than LTV_THRESHOLD x the
Estimated value of the property
Then
Set the status of the application to REJECTED
and set reason of application to "Application rejected because LTV (loan to value)
ratio above threshold"
```



# Business Rules could look like this ...



Are you really agile this way?

```
package com.intellinsure.policies.pricing;

import java.util.Iterator;
import java.util.Vector;

import com.intellinsure.policies.Application;
import com.intellinsure.policies.BusinessPolicy;
import com.intellinsure.policies.Customer;
import com.intellinsure.policies.Vehicle;

public class SurchargePolicies extends BusinessPolicy {

    private SurchargePolicies(){
    }

    public Vector computeSurcharge(Customer customer, Application application)
    {
        Vector surcharges = new Vector();
        Iterator iter = application.getVehicles().iterator();
        while (iter.hasNext()) {
            Vehicle veh = (Vehicle)iter.next();
            if (customer.getAge() < 25) {
                if (veh.getType().equals("Sports Coupe")) {
                    surcharges.add(new Surcharge(10, "Young driver with Sports Coupe"));
                }
            }
        }

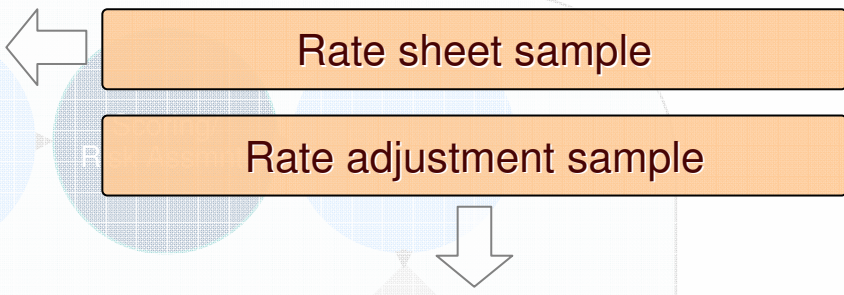
        iter = application.getVehicles().iterator();
        while (iter.hasNext()) {
            Vehicle veh = (Vehicle)iter.next();
            if (customer.getAge() < 60) {
                if (veh.getType().equals("Sports Coupe")) {
                    surcharges.add(new Surcharge(10, "Sports Coupe"));
                }
            }
        }

        // And many more like these.....
        return surcharges;
    }
}
```



... or look like this

gender		age		is married	state	set base ... with reason
		min	max			
Male	16	20	true	CA	\$400	Collisi...
				NY	\$410	Collisi...
				VA	\$420	Collisi...
			otherwise	\$405	Collisi...	
			false	CA	\$410	Collisi...
				NY	\$420	Collisi...
	VA	\$430		Collisi...		
	21	35	true	CA	\$380	Collisi...
				NY	\$390	Collisi...
				VA	\$400	Collisi...
			otherwise	\$385	Collisi...	
			false	CA	\$390	Collisi...
NY				\$400	Collisi...	
VA	\$410	Collisi...				
≥ 36		true	CA	\$340	Collisi...	
			NY	\$350	Collisi...	
			VA	\$360	Collisi...	
		otherwise	\$345	Collisi...		



**If**  
 the driver of the car insurance request state of residence is : CA  
 and the driver of the car insurance request has completed a driver's ed course

↳

**Then**  
 give the quote Item a : 11 % [±] discount on the base price with reason :  
[Educated driver discount](#)

↳

Out

Accept

Pricing  
(Payment Plans  
Fees)

Rate  
Adjustments

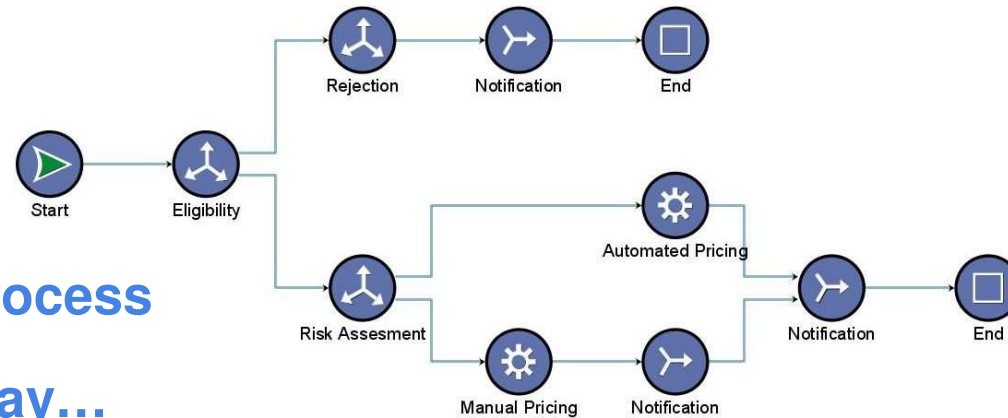
Base Pricing  
(Rate Sheets)



# Complex decision intensive processes



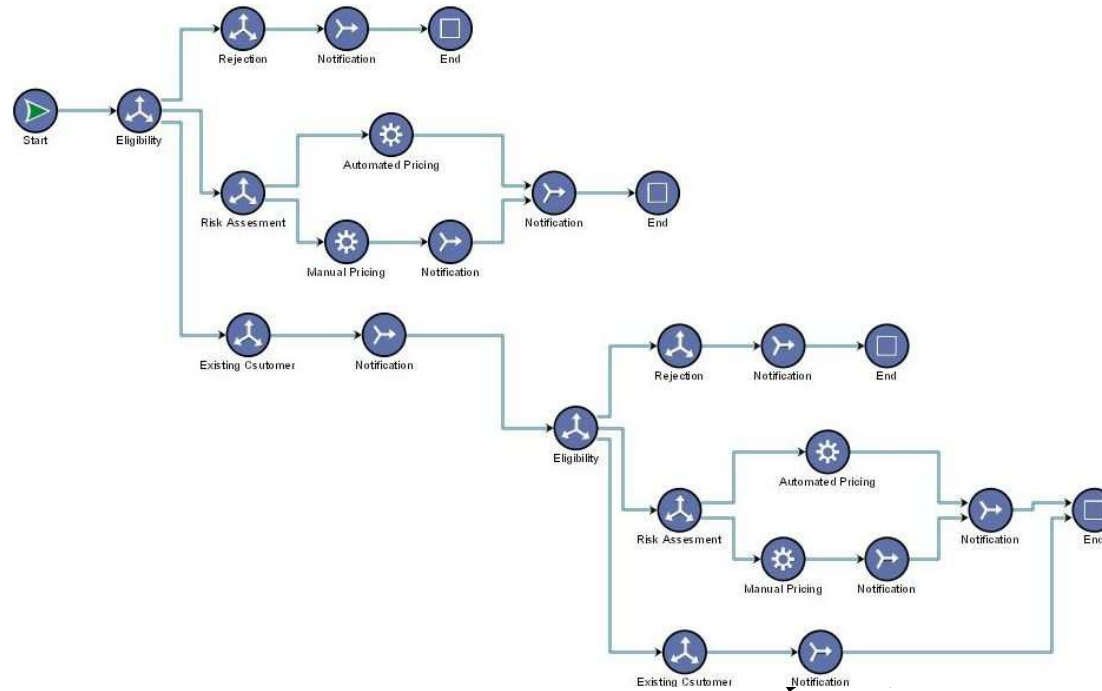
Streamlined process  
works fine today...



- Until
  - New Product
  - New Policy
  - New Regulation
  - New Pricing Rules / Model
  - New Scoring Rules / Tables
- ...



# The decision intensive process

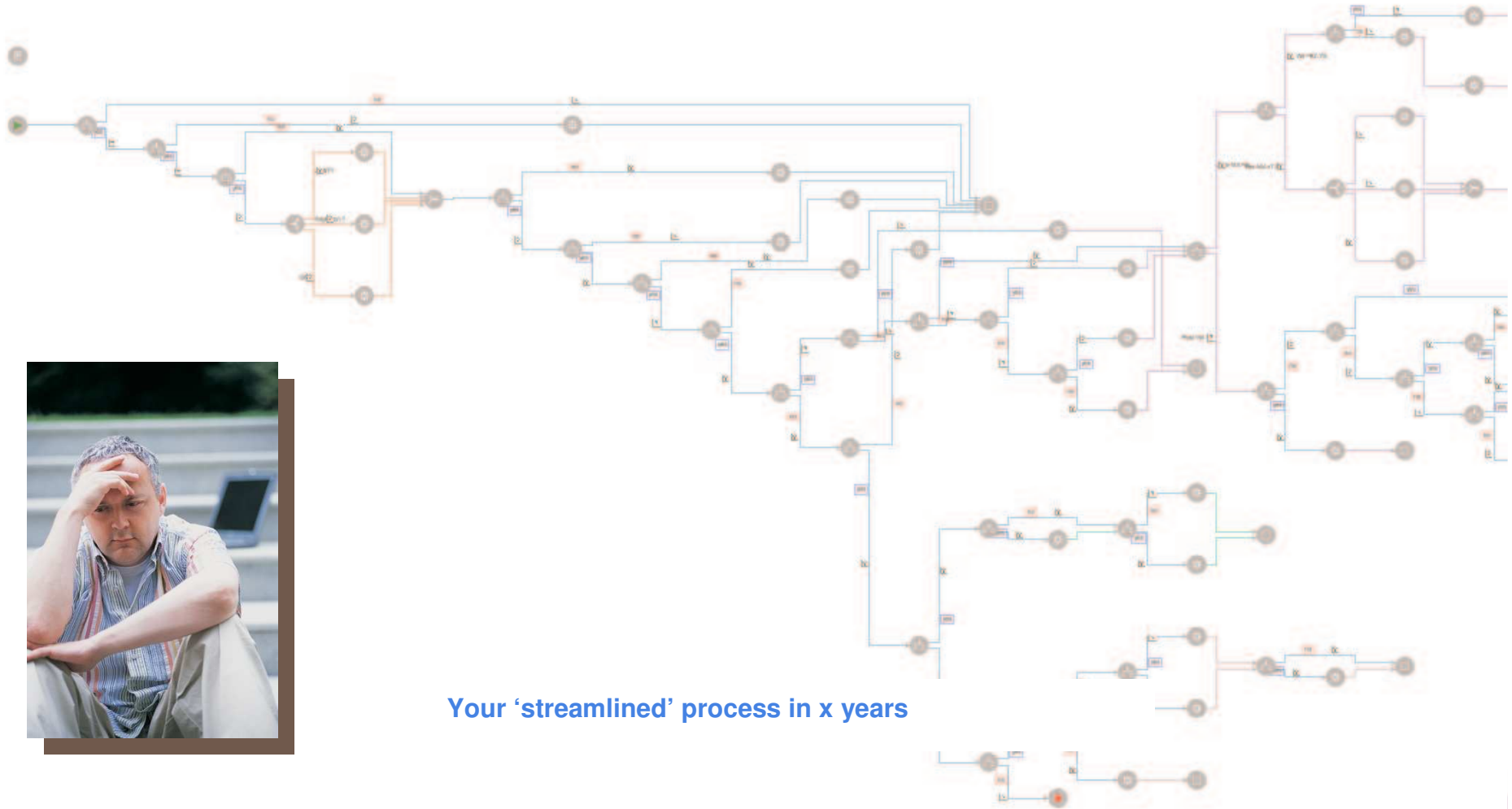


Your 'streamlined' process in x months





# The nightmare intensive process



Your 'streamlined' process in x years



# The Technical Slide

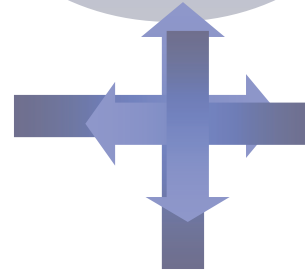
Leveraging BEP, BAM, and BRMS



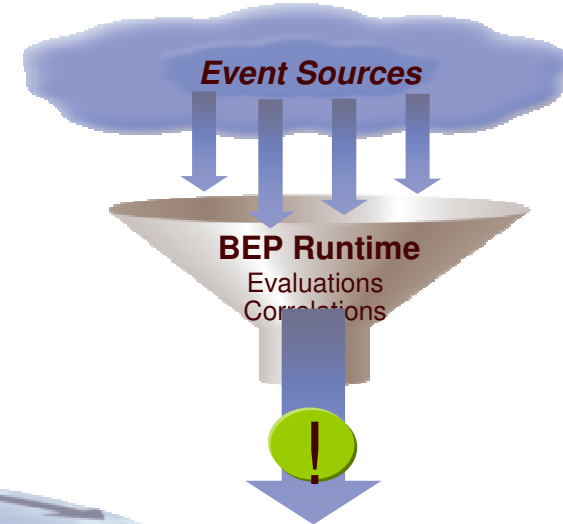
## What's Happening



## What to Do



## When to Act



Know What's Happening, When to Act, and What to Do



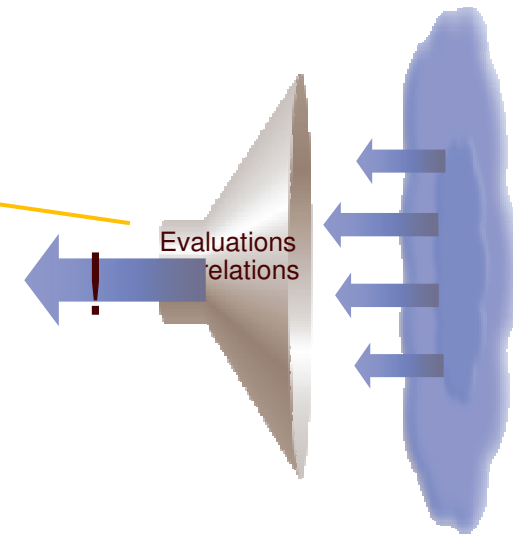
# What it really means



**Monitoring**



**BPM**

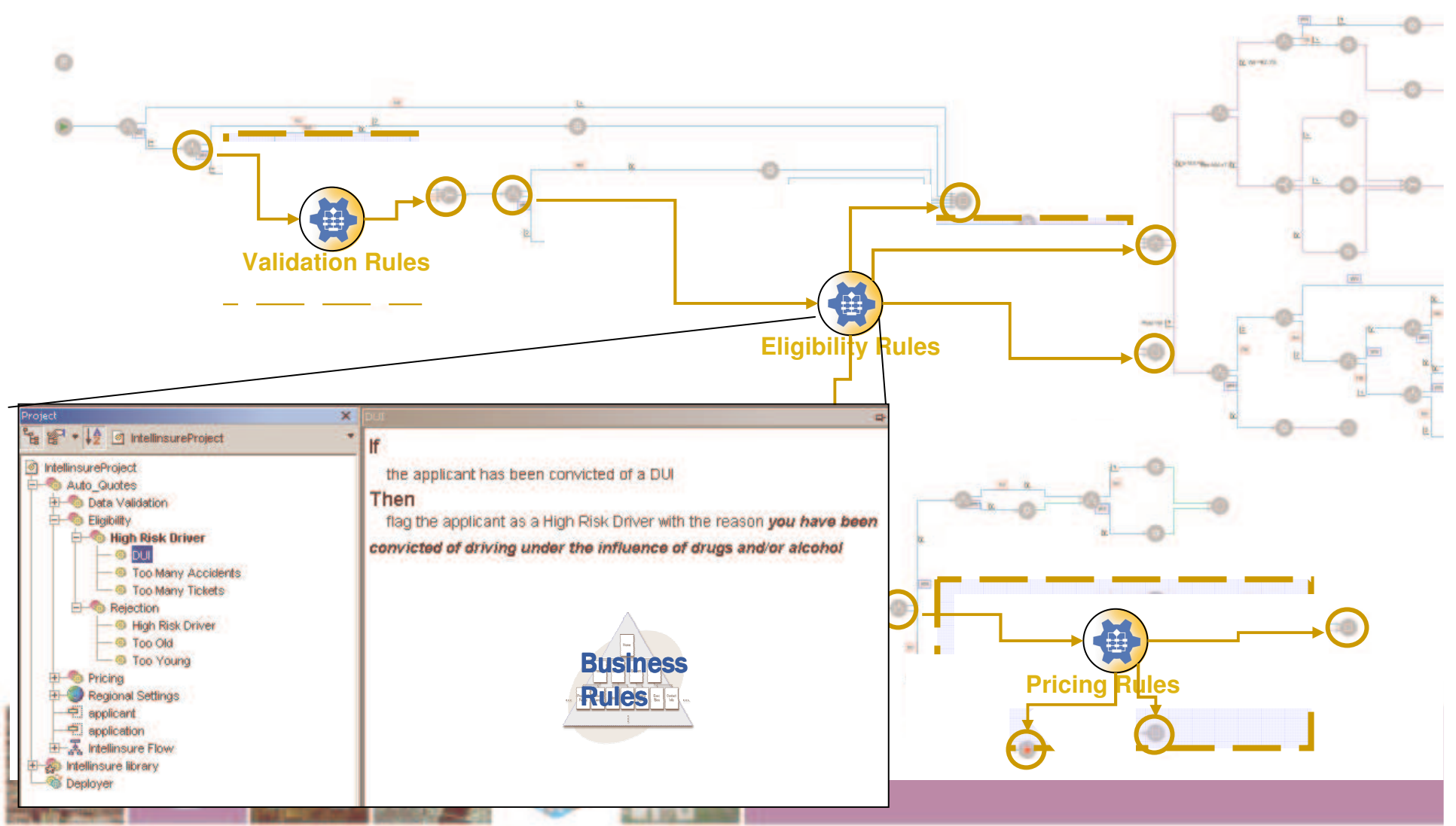


**Event Processing**

*Smart*  
**SOA**



# Business Policy Externalization → Process Simplification



Validation Rules

Eligibility Rules

Pricing Rules

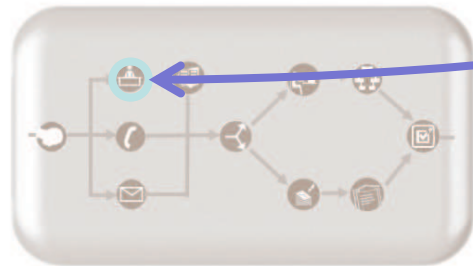
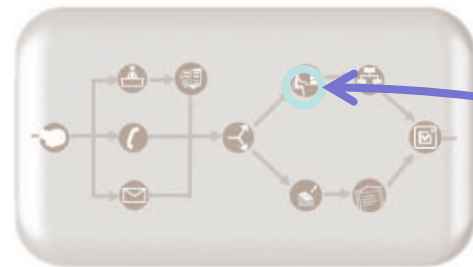
Project IntellinsureProject

- Auto\_Quotes
- Data Validation
- Eligibility
  - High Risk Driver
    - DUI
    - Too Many Accidents
    - Too Many Tickets
  - Rejection
    - High Risk Driver
    - Too Old
    - Too Young
- Pricing
- Regional Settings
- applicant
- application
- Intellinsure Flow
- Intellinsure library
- Deployer

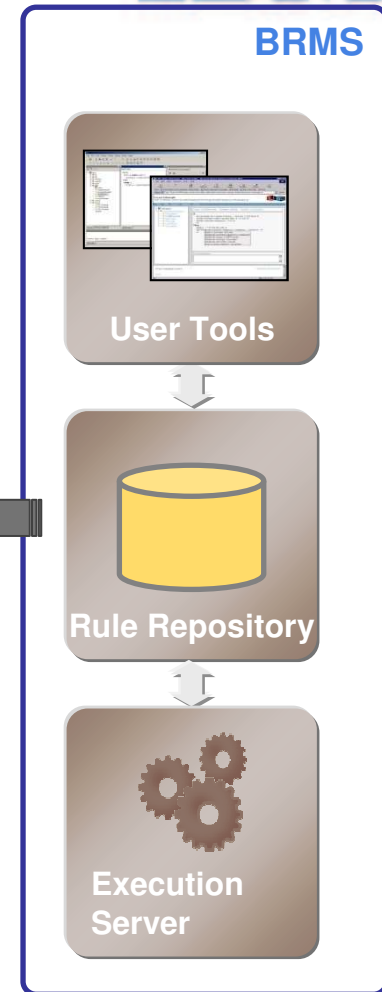
If  
the applicant has been convicted of a DUI  
Then  
flag the applicant as a High Risk Driver with the reason *you have been convicted of driving under the influence of drugs and/or alcohol*

Business Rules

# Change once, impact anywhere



Transparent Decision Service (TDS)



Business Processes

Business Decisions



# Intuitive Rule Representations



[definitions]  
if

Natural Language

the driver is full time student  
and the driver has been convicted of a DUI ✗

then

set high risk driver to true [and/or] ✗  
add eligibility error: ▼ <enter a value> [±] ✗

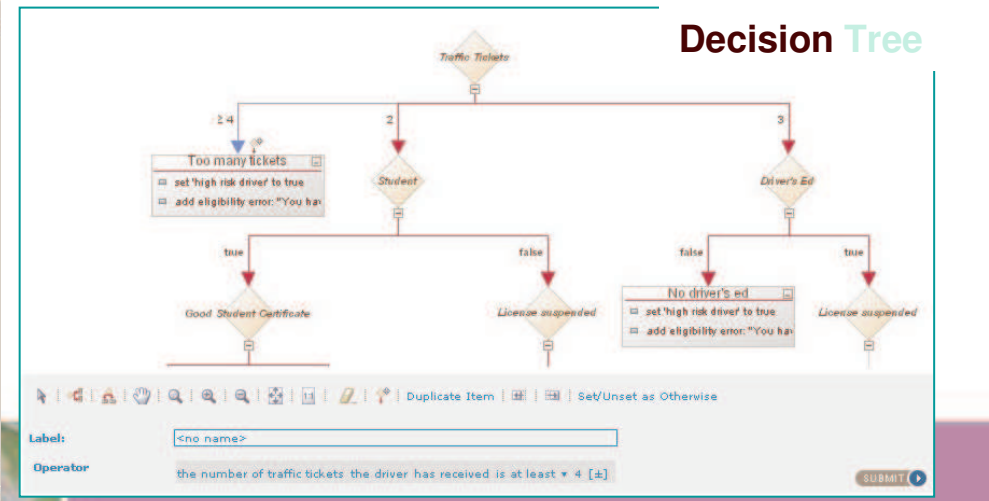
[e] for each ...  
print message: <a string>  
reject this application with reason: <a string>  
set <variable> to ...

	Gender	Is Married?	Is Graduate?	Age		Dollar	Surcharge			
				Min	Max		Adjustment Type	Reason		
0	male	false	false	≤ 23		23	surcharge	Driver Profile Surcharge		
1				24	30	18	charge	charge		
2				31	35	13	charge	charge		
3			true	≤ 23		20	surcharge	Driver Profile Surcharge		
4				24	30	15	surcharge	Driver Profile Surcharge		
5				31	35	10	surcharge	Driver Profile Surcharge		
6				≤ 23		18	surcharge	Driver Profile Surcharge		
7				24	30	14	surcharge	Driver Profile Surcharge		
8				31	35	10	surcharge	Driver Profile Surcharge		
9			true	≤ 23		15	surcharge	Driver Profile Surcharge		
10				24	30	10	surcharge	Driver Profile Surcharge		
11				31	35	5	surcharge	Driver Profile Surcharge		
12			female	false	false	≤ 21		16	surcharge	Driver Profile Surcharge
13						22	27	10	surcharge	Driver Profile Surcharge
14					28	33	6	surcharge	Driver Profile Surcharge	
15	true	≤ 21			12	surcharge	Driver Profile Surcharge			

Decision Table

Scorecard

Attribute	Range	Weight(%)	Side
Months since last bankruptcy	< 1	100	0
	1 ≤ Months since last bankruptcy < 3		20
	3 ≤ Months since last bankruptcy < 6		60
Number of Bankruptcies	< 1	30	100
	1 ≤ Number of Bankruptcies < 2		50
	2 ≤ Number of Bankruptcies < 3		0
Number of Foreclosures	< 1	20	100
	1 ≤ Number of Foreclosures < 2		30
	2 ≤ Number of Foreclosures < 3		0
Number of 30 days Late Payment	< 1	5	100
	1 ≤ Number of 30 days Late Payment... < 3		60
	3 ≤ Number of 30 days Late Payment... < 7		10
Number of 60 days Late Payment	< 1	15	100
	1 ≤ Number of 60 days Late Payment... < 3		80
	3 ≤ Number of 60 days Late Payment... < 7		30



# Rule editing in MS Word

**Rule Document Outline**

Name
Gold Category Upgrade
Platinum Upgrade

**Rule Properties**

Author	Cyril
Categories	Any
Creation Date	10/11/2006 7:30 PM
Documentation	
Last Modification	Cyril
Last Modification	10/11/2006 7:33 PM
Name	Platinum Upgrade
Package	RsoDemoL
Execution	
Active	True

**Rule 1: Gold Category Upgrade**

Author	Cyril
Creation Date	10/11/2006 7:30 PM

**If**

All of the following conditions are true :

- the purchase value of the shopping cart is at least 100
- the category of the shopping cart's customer is Silver

**Then**

Set the category of the shopping cart's customer to Gold ;

The final property in this set specifies a password that is required to enable editing of the file using the implementation. Because this is a convenience feature intended to prevent accidental changes to information, it is stored in clear text as an xsd:string.

**Rule 2: Platinum Upgrade**

Name	Platinum Upgrade
Author	Cyril
Rule Body	Date
Date	10/11/2006 7:33 PM

**If**

All of the following conditions are true :

- the purchase value of the shopping cart is at least 200
- the category of the shopping cart's customer is Gold

**Then**

Set the category of the shopping cart's customer to Platinum ;

By storing this information in the file, the implementation will prompt the user for

Page: 9 of 24    Words: 6,731    English (U.S.)    90%

# Rule editing in MS Excel

The screenshot displays the Microsoft Excel interface with the 'Decision Table' ribbon selected. The main workspace contains a decision table with columns for State, Age (Min/Max), and Message. The 'RuleDoc' task pane is open on the right, showing the 'Table Properties' and 'Selection Properties' for the selected rule.

State	Age	Accepted	Message
	Min	Max	
New York	≤ 20.00	False	The customer's age is below the minimum for rent in New York.
	21.00   65.00	True	The customer is eligible to rent in New York.
	≥ 66.00	False	The customer's age is past the maximum for rent in New York.
New Hampshire	≤ 22.00	False	The customer's age is below the minimum for rent in New Hampshire.
	23.00   70.00	True	The customer is eligible to rent in New Hampshire.
Vermont	≥ 71.00	False	The customer's age is past the maximum for rent in Vermont.
	≤ 25.00	False	The customer's age is below the minimum for rent in Vermont.
Rhode Island	26.00   69.00	True	The customer is eligible to rent in Rhode Island.
	≥ 70.00	False	The customer's age is past the maximum for rent in Rhode Island.
Massachusetts	≤ 20.00	False	The customer's age is below the minimum for rent in Massachusetts.
	21.00   70.00	True	The customer is eligible to rent in Massachusetts.
	≥ 71.00	False	The customer's age is past the maximum for rent in Massachusetts.

**RuleDoc - Table Properties**

**Selection Properties**

- Authoring
  - Name: Message
- Design
  - Action: (Expression)

**Problem List**

- Cells	Description
---------	-------------



# Versioning



Differences between versions 1.0 and 1.1

## Precondition

OLD VALUE

NEW VALUE

## Body

OLD VALUE					NEW VALUE				
	Vehicle Value		Deductible	Base Premium		Vehicle Value		Deductible	Base Premium
	Lower	Upper				Lower	Upper		
0			\$250	\$120	0			\$250	\$120
1	\$0	\$5,500	\$500	\$110	1	\$0	\$5,500	\$500	\$110
2			\$1000	\$100	2			\$1000	\$115
3			\$250	\$130	3			\$250	\$130
4	\$5,500	\$11,000	\$500	\$120	4	\$5,500	\$11,000	\$500	\$120
5			\$1000	\$110	5			\$1000	\$110
6			\$250	\$150	6			\$250	\$150
7	\$11,000	\$20,000	\$500	\$145	7	\$11,000	\$20,000	\$500	\$145
8			\$1000	\$140	8			\$1000	\$140
9			\$250	\$160	9			\$250	\$160
10	\$20,000	\$35,000	\$500	\$150	10	\$20,000	\$35,000	\$500	\$150
11			\$1000	\$140	11			\$1000	\$140
12			\$250	\$170	12			\$250	\$170
13	\$35,000	\$55,000	\$500	\$160	13	\$35,000	\$55,000	\$500	\$160
14			\$1000	\$150	14			\$1000	\$150
15			\$250	\$190	15			\$250	\$190
16	\$55,000	\$100,000	\$500	\$180	16	\$55,000	\$100,000	\$500	\$180
17			\$1000	\$165	17			\$1000	\$165

# Rule governance and promotion

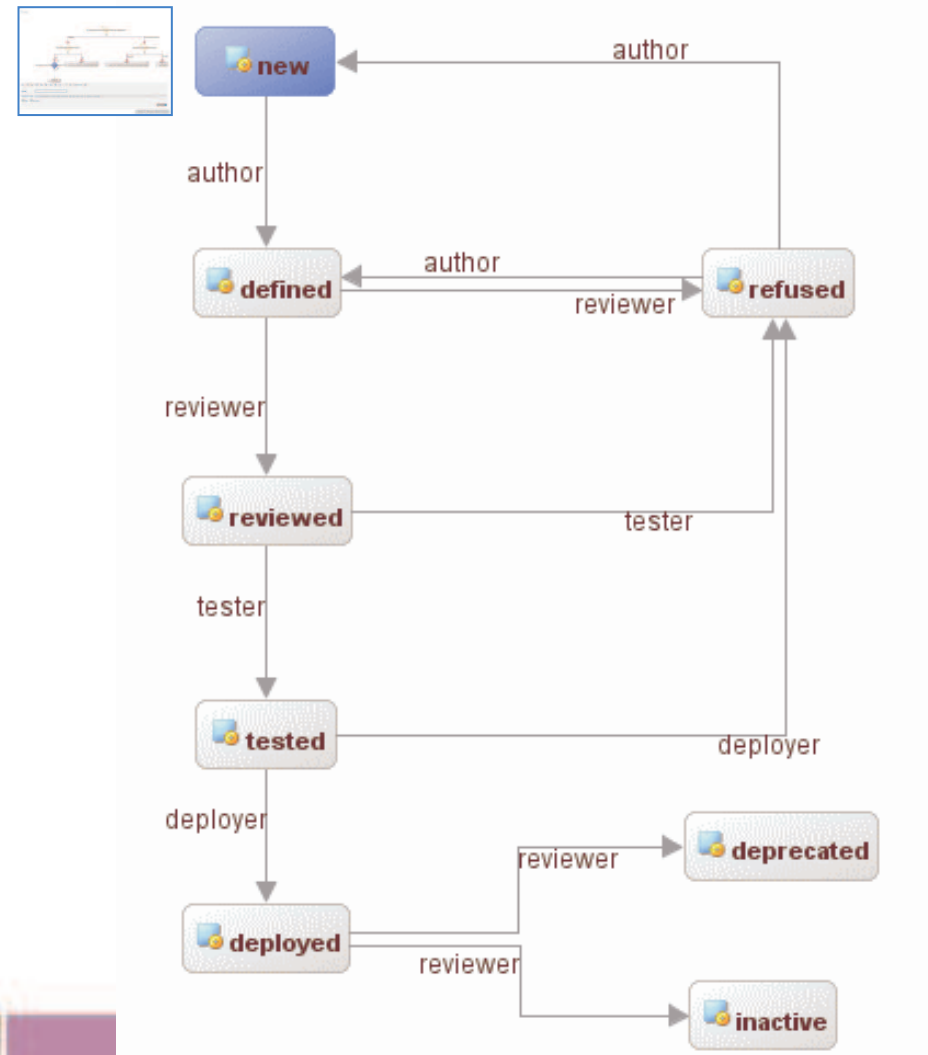


## Roles

- Author
- Reviewer
- Tester
- Deployer

## • Statuses

- New
- Defined
- Refused
- Reviewed
- Tested
- Deployed
- Deprecated
- Inactive



# Testing & Simulation: Create Scenarios



Scenario name	Approved	Yearly Repayment
Scenario 1	TRUE	1595.45
Scenario 2	TRUE	1755.45
Scenario 3	TRUE	3190.9
Scenario 4	TRUE	1755.45
Scenario 5	FALSE	0



# Gradual Mainframe migration



IDENTIFICATION DIVISION  
PROGRAM & BLANKSCREEN  
ENVIRONMENT DIVISION  
CONFIGURATION SECTION  
SOURCE COMPUTER: AT&T

The screenshot displays the Microsoft Excel interface with the 'Decision Table' ribbon active. The main table in the spreadsheet is as follows:

Purchase Value		Category	Apply Discount	Display Message
min	max			
100	200	Silver	10	We've given you a 10% discount!
		Gold	15	We've given you a 15% discount!
		Platinum	20	We've given you a 20% discount!
200	300	Silver	15	We've given you a 15% discount!
		Gold	20	We've given you a 20% discount!
		Platinum	25	We've given you a 25% discount!
300		Silver	20	We've given you a 20% discount!
		Gold	25	We've given you a 25% discount!
		Platinum	30	We've given you a 30% discount!

The 'Rule Document' task pane on the right shows the following properties:

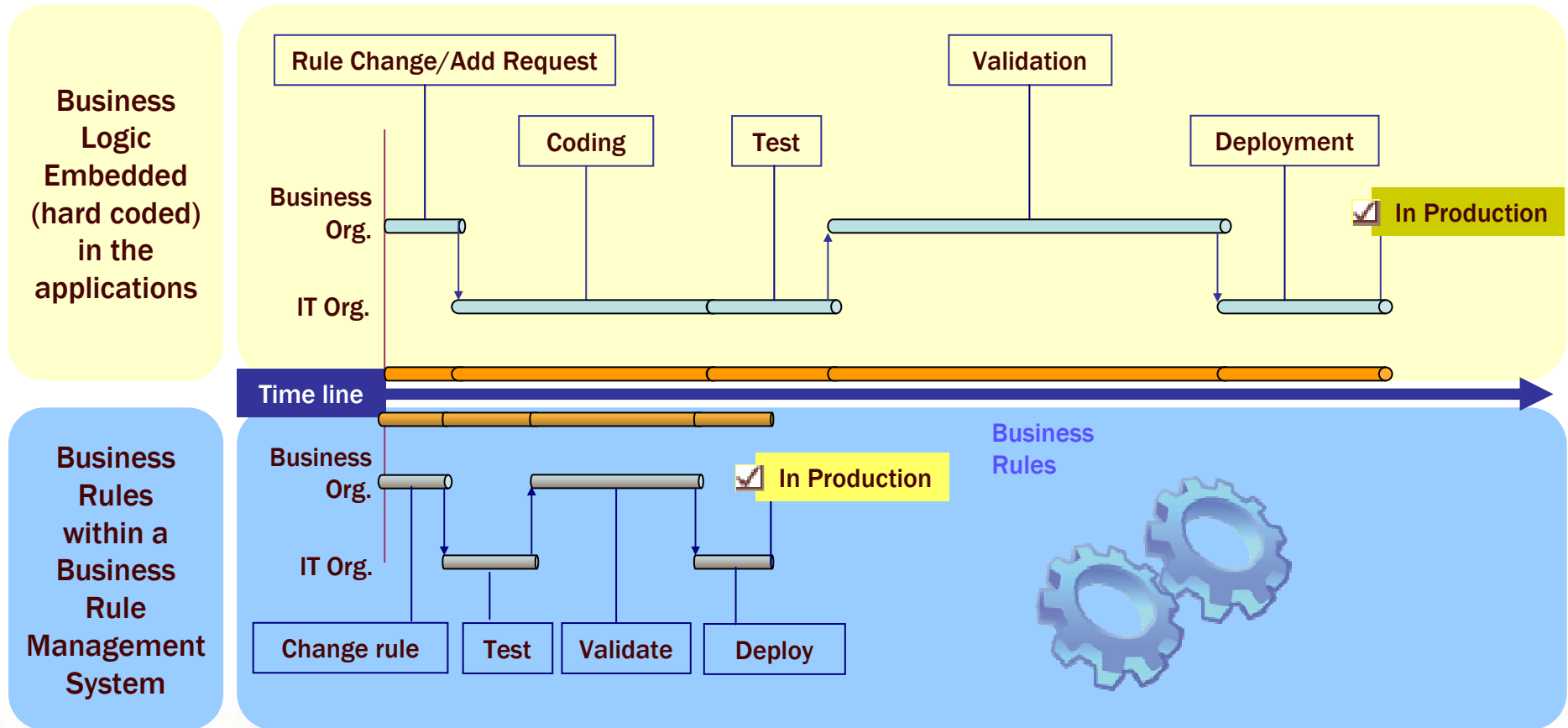
- Table Properties**
  - Author: mathey
  - Categories: Any
  - Creation Date: 3/1/2005 11:42 AM
  - Documentation:
  - Last Modification Authc:
  - Last Modification Date: 3/1/2005 11:42 AM
  - Name: **Apply Discount Table**
  - Package: **BusinessRules**
- Execution**
- Selection Properties**
  - Cells
    - Comment:
    - Operator:
- Problem List**



# BRMS Vision



Increase IT Responsiveness



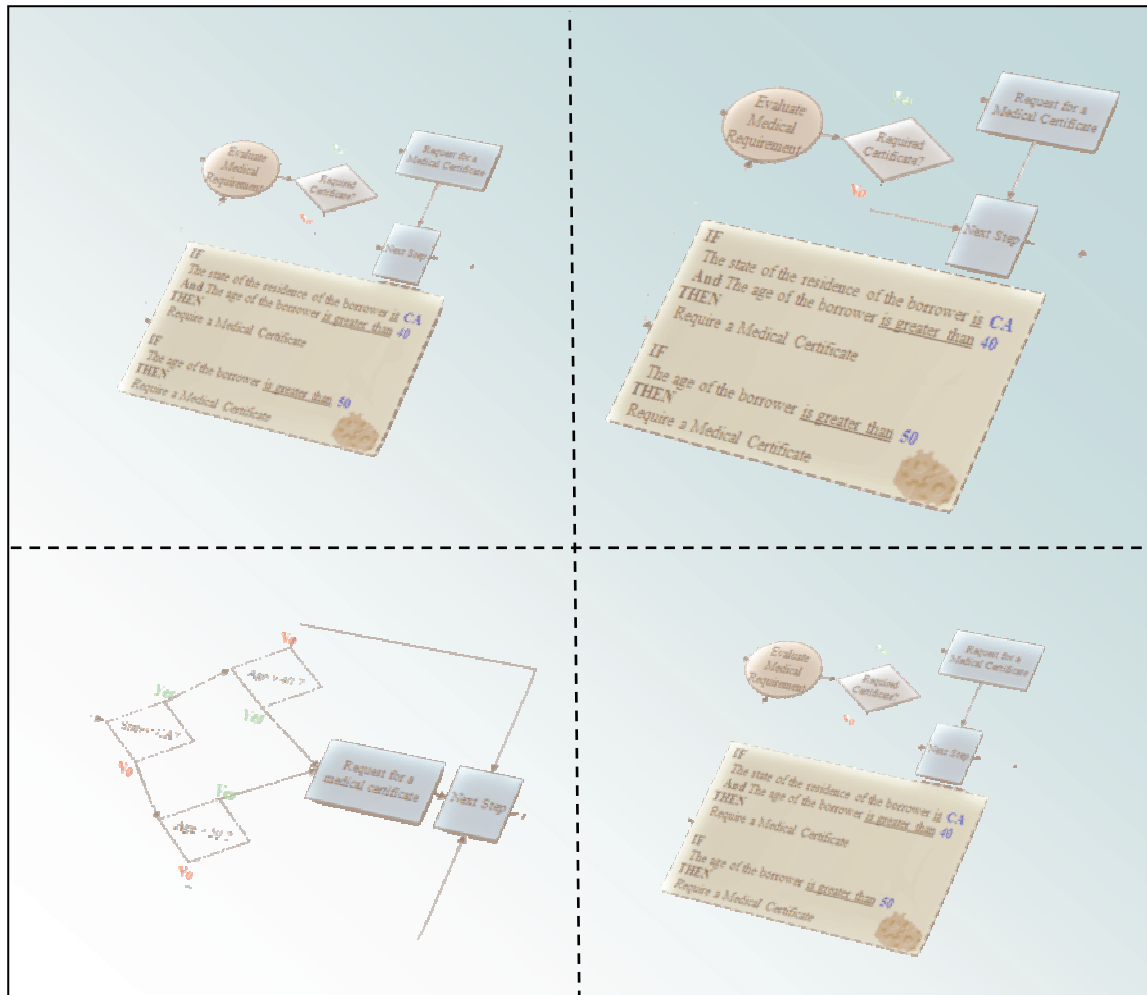
# Identifying BRMS suitability



Ownership

B  
U  
S  
I  
N  
E  
S  
S

I  
T



Low **Change rate** High

- Large amount of rules
- Complex policy intensive rules
- Hot deployment of new rules



# Take Away Points



- WebSphere Jrules offers greater:
  - Visibility and Auditability
  - Ownership & Autonomy
  - Rule Maintenance Efficiency
  - Scalability
  - Business and Technical Agility

[www.ilog.com/brms](http://www.ilog.com/brms)

Filip Lou, [flou@au.ibm.com](mailto:flou@au.ibm.com)



# Upcoming WebSphere Proof of Technologies



Topic	Where	When
<b>Simplify, Secure and Accelerate your SOA with WebSphere DataPower SOA Appliances</b>	<b>Sydney</b> IBM Centre, 601 Pacific Highway, St Leonard's	Wednesday, 3 June
<b>Simplify, Secure and Accelerate your SOA with WebSphere DataPower SOA Appliances</b>	<b>Canberra</b> Cliftons, Level 2, 10 Moore Street	Thursday, 4 June
<b>Business Process Management for End-to-End Process Automation</b>	<b>Melbourne</b> Cliftons, Level 1, 440 Collins Street	Tuesday, 16 June
<b>Business Rules Management with WebSphere JRules</b>	<b>Melbourne</b> Cliftons, Level 1, 440 Collins Street	Thursday, 18 June

For information on the above sessions or to register, call 1800 802 796, or speak to an IBM representative.

