

# Automating *Business Logic*

(From Hercules/Prometheus, to the '*[wo]man on the street*')

(From programming, to authoring)

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What about ?

Lots of useful  
(*business*) applications  
don't do  
much...

But  
they change  
**A Lot...**

# Event driven: personalized alerts



The screenshot displays two overlapping windows from the IBM Business Process Manager rule editor. The top window, titled 'GoodWeatherForWindSurf', is configured with the following details:

- Packet:** HobbiesAndPreferences
- Rule Name:** GoodWeatherForWindSurf
- Priority:** default

The rule logic is as follows:

**If**  
the weather outlook is : [strong wind](#)  
and the customer is in/at : the weather forecast location  
and if : the weather forecast date is be  
and today is : the weather forecast date  
and the customer hobbies include : [y](#)

**+**

**Then**  
send the following SMS message : [str](#)  
[sailing\n\nPress \\*21\nfor more\ninfos](#) , t

**Documentation**  
If there is a strong wind expected in the next 4  
then notify the customer with a SMS message

The bottom window, titled 'StrongWindRule', is configured with the following details:

- Packet:** Weather
- Rule Name:** StrongWindRule
- Priority:** default

The rule logic is as follows:

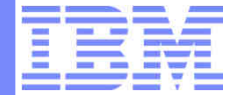
**If**  
the weather outlook is : [strong wind](#)  
and if : the weather forecast date is within the next : 2 [±] day(s)  
and the customer is going to : the weather forecast location  
and if : the beginning of the trip is between : today and : the date of the event

**+**

**Then**  
send the following eMail message : [Hello\n\nA strong wind is expected at your destination.\nYou might want to take some\nwarm clothes with you!\n\nBest regards\n\nYour travel agent](#) , with subject : [Strong wind expected at your destination](#) to : the customer EMail address

**Documentation**

# Transactional: financial validation



## ▶ Rule editor:

1- Apply this rule for

any BUY Order with a amount higher than : 10000 [±] ✘

and with a stock symbol equal to : XYZ . ✘

+ ✘

and a portfolio with a current value higher than : \$ 10000 [±] ✘

and with a allocation in stock XYZ . higher than : 50 % [±] ✘

+ ✘

+

2- Select the actions for your rule

Send me the following message : risk of unballanced portfolio with title : risky order ✘

+

Undo

## ▶ Rule editor:

1- Apply this rule for

any BUY Order with a quantity higher than : 5000 [±] ✘

+ ✘

and a portfolio with a daily variation crossing below : 0 % [±] ✘

+ ✘

+

2- Select the actions for your rule

Send me the following message : too high volume order on berrish portfolio with title : high quantity ✘

+

Undo

# Decisional: claim processing

The screenshot displays the IBM Decisional software interface. On the left, a tree view shows the project structure under 'Intellinsure', with 'Auto\_Quote\_Rules' expanded to show 'HighRiskDriver' and its sub-rule 'TooManyAccidents' selected. The main window shows the configuration for this rule:

- Packet:** HighRiskDriver
- Rule Name:** TooManyAccidents
- Priority:** default

**If**

- the applicant has been convicted of a DUI
- and the applicant has had their license suspended or revoked
- and the number of accidents the applicant has been involved in is greater than : 4 [±]

**Then**

- reject the application with the reason : [you are considered a high risk driver](#)

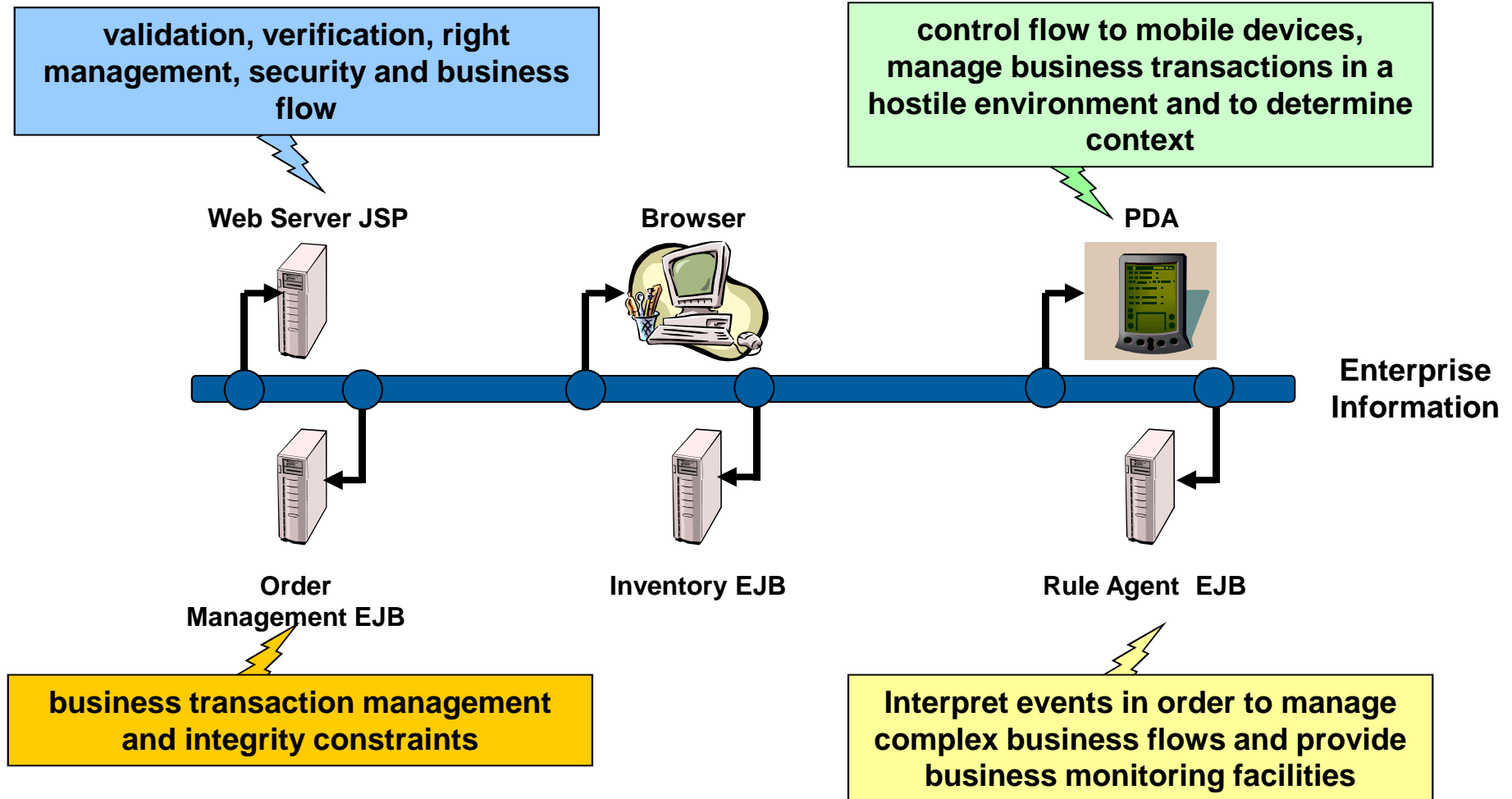
**documentation**

When receiving a new policy application, implement first level filter to reject high risk drivers.

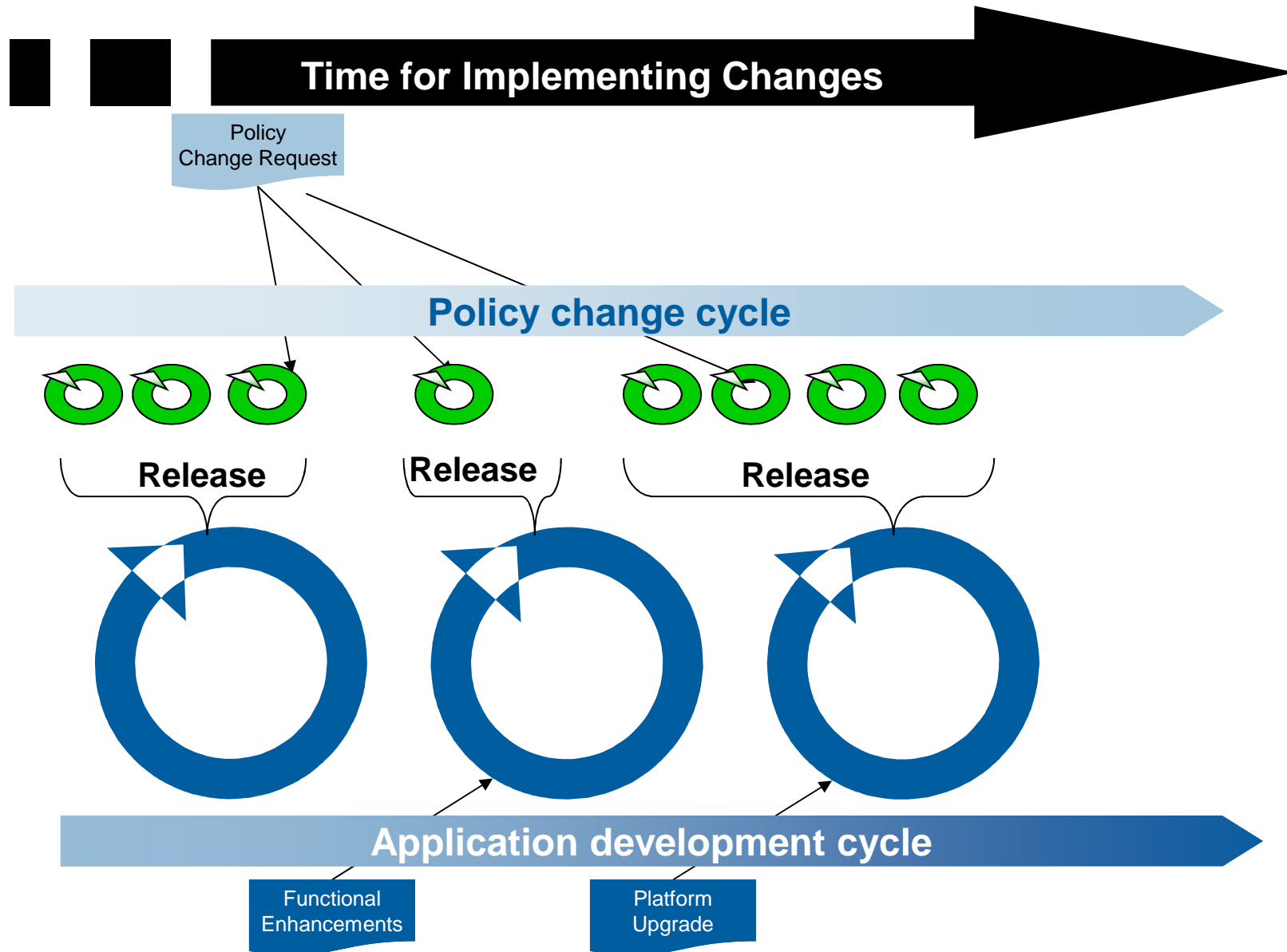
At the bottom, the 'Rulesets' tab is active, showing 'TooManyAccidents \*'.

# Business Logic is everywhere

Every day within your company...

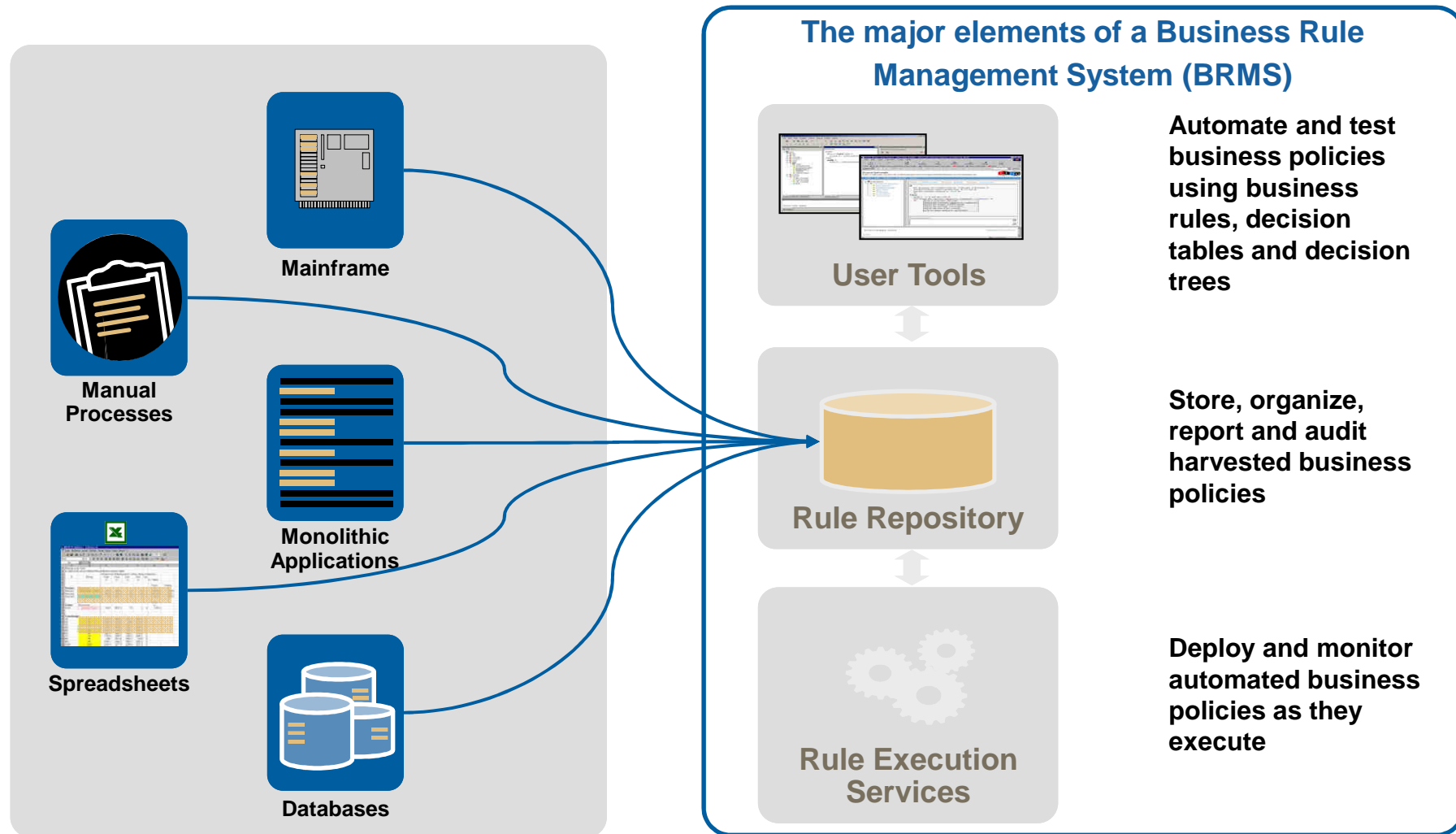


# Speed of Change is a key factor





# Business Logic and BRMS

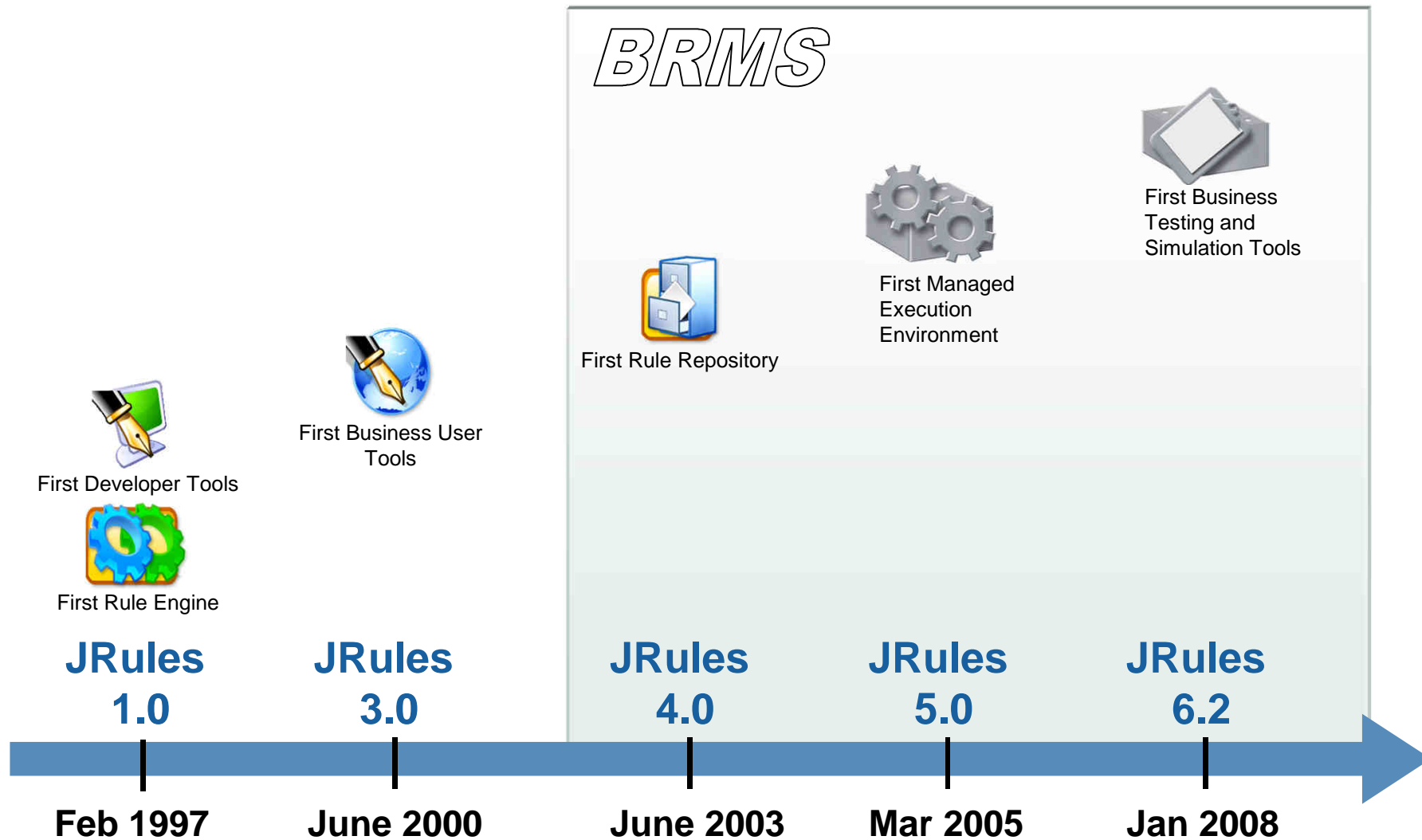


# Representation & Reasoning (which evolutions ?)

- **Kool, 1983: for product configuration (Journées Bigre, Cap d'Agde)**
  - Rules applied to Objects
  - Rules as objects
  - Forward, Backward chaining, rulesets.
  - Classes, Attribute Classes, Meta-classes.
- **Smeci, 1987: for design problems**
  - Rules applied to objects
  - Rules as objects
  - Classification,
  - Tree Search
  - Domain reasoning
- ***ILOG JRules, 2000 – now* : for decision automation by Business Users**
  - Rules applied to Objects or whatever
  - Rules as objects
  - Plain Forward chaining, Abstract model / Execution models
  - Business friendly (meta) models and languages
    - Decision Tables/Tree
    - Rulesets.
    - RulesFlow
    - BOM, XOM, VOC, BAL

```
when c : Customer (status == "GOLD")  
then c.setDiscount(20);
```

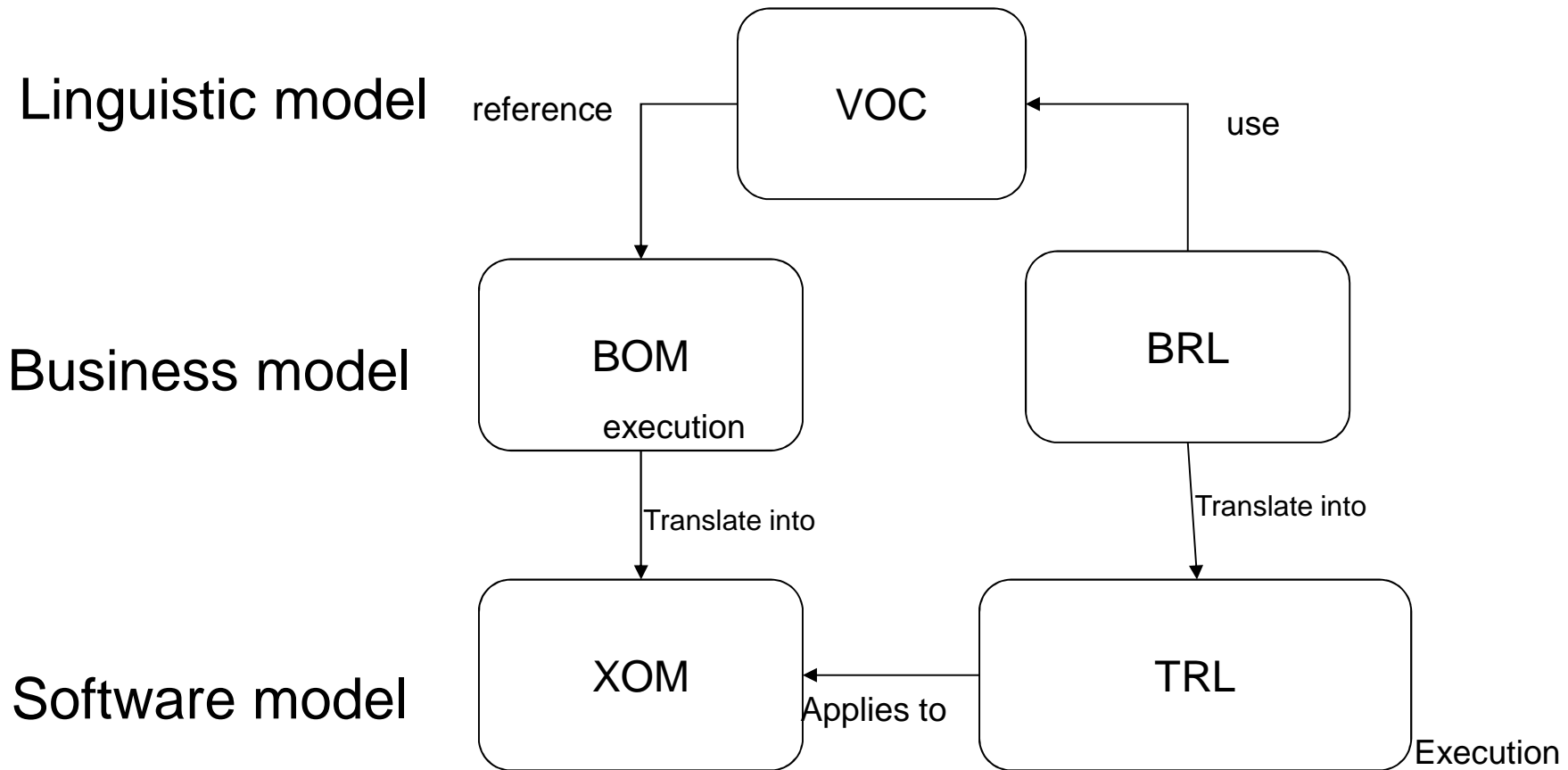
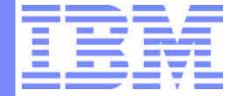
***IF the customer status is GOLD,  
Apply a 20% rebate.***



- Models: glorification of Abstraction
  - Abstracting\* is the *essence* of software design
  - Abstracting from the problem specificity
  - Abstracting from the domain specificity
  - Abstracting from Programming languages & Architectures
- Aspects: glorification of orthogonality
- (B)DSLs : glorification of simplicity
  - Macros: define specific abstractions that fit the problem
  - Syntax: present the abstractions in a way that fit the skills
  - Scripting: the larger is not the better

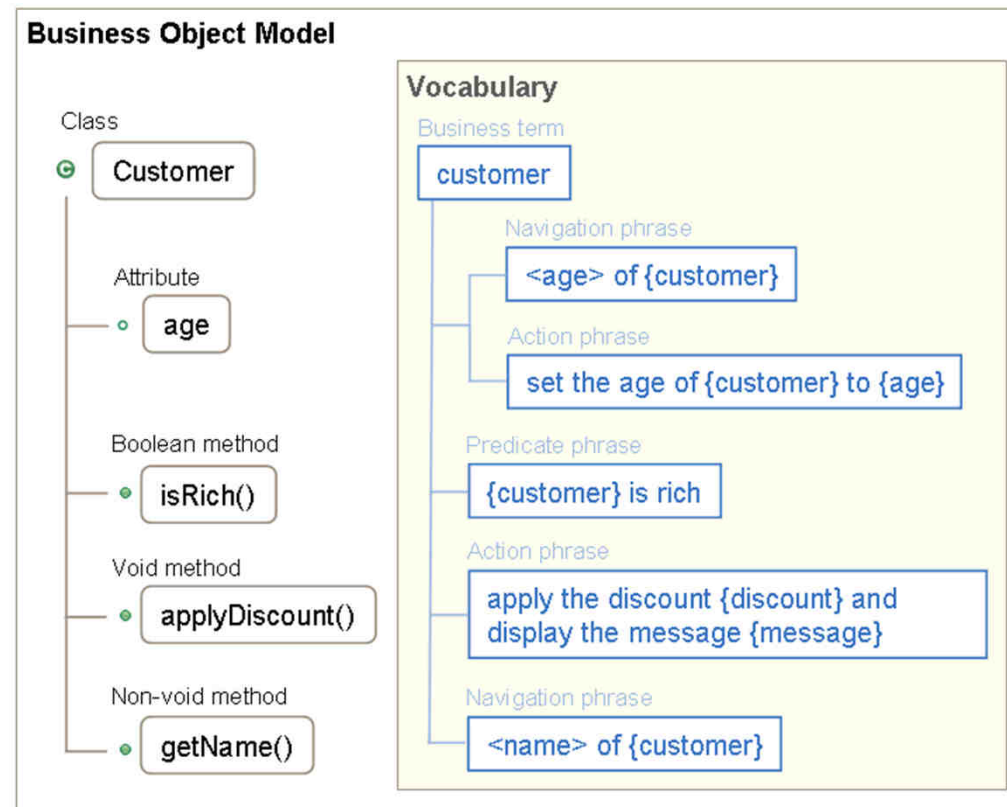
\* And naming...

# The business rules (meta) model.



# On top of the MDE stack: vocabulary + language

The vocabulary is the set of terms and phrases attached to the elements of the Business Object Model (BOM)



Controlled

Natural

Languages

for Business Domain Specific Languages



- Dozen of millions of ‘Business Users’
- They know *their* business logic
- Let them do the authoring !

Merci