



Changing the rules of business™

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# W3C Workshop on Rule Languages for Interoperability

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## Business Rules and Product Rules

- Business rules are highly specific and structured statements that constrain some aspect of a business process or activity, and that control or influence its behavior.
- Business rules execute some actions that enforce underlying business policy.
- Production rules are a convenient representation for most business rules.

*Driver must be 21 or older*

*If the driver in a car rental request is less than 21 years old*

*Then reject the car rental request*



## Requirements for a Standard Rule Language

- Execution of Rules
- Expressiveness of the Language
- Usability and Adoptability of the Standard
- Compatibility with Other Standards



## Execution

- A standard rule language must be able to represent rules in a way that is unambiguous with respect to execution.
- Rules applied on the same data in two different environments must produce identical results
- 25 commercial products and 18 open source products in the Java rule engine space
- Forward-chaining RETE engines, decision tables, decision trees, procedural engines...



## Expressiveness

- A standard rule language must be expressive enough to represent most (if not all) of the rules allowed by the main business rule engines.
- Rule authors should not be required to write rules using the standard rule language
- Condition part of rules must include: typed first order queries, with variable definition and binding, and standard logical, arithmetical, and set theoretical operators
- Action part of rules must include: assert, retract, modify and execution of application specific functions

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## Usability and Adoptability

- **Mainstream business rule engines must implement the standard**
- **Translation from/to internal languages used by main rule engines must be reasonably simple**
- **XML-based format**

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## Compatibility

- **OMG PRR – Modeling of business rules and exchange of business rules between modeling tools and engines**
- **JCP JSR-94 – standard API for acquiring and using a rule engine**
- **Compatible and convergent standards for modeling, executing, and exchanging rules**

## A Layered Architecture

