

# **Business Requirements & Use Cases and Rule Language Framework Architecture**

## **Position Paper for W3C Workshop on Rule Languages for Interoperability**

Donald Chapin  
Business Semantics Ltd  
London UK

[Donald.Chapin@BusinessSemantics.com](mailto:Donald.Chapin@BusinessSemantics.com)

Business Semantics Ltd provides consulting services to large, multinational companies to help them:

- ❖ establish a business owned and operated capability to manage business rules, and the business vocabularies on which their definition is based, as intellectual assets;
- ❖ exploit these business-owned vocabularies and rules to:
  - improve the quality and effectiveness of information systems support of the business, especially in Business Intelligence and Knowledge Access & Discovery;
  - improve the flexibility, quality and efficiency of the information systems themselves, especially with respect to data and document content and business process automation.

Business Semantics Ltd would like to contribute to this W3C Workshop by providing input to business use cases and requirements garnered from its experience with clients, and providing clarification to factors that need to shape a successful Rules Language Framework architecture.

### **Business Requirements & Use Cases**

There are three high-level business capabilities that each has its own set of business requirements and use cases regarding which Business Semantics Ltd has client input:

1. representing and sharing the business rules by which an organizations is operated; and the business vocabularies used to think and communicate in the course of operating the organization, and used as the basis for the definition of the business rules.
2. negotiating the provision of information systems services with respect to data and document content, and business rule implementation;
  - a. services required (customer – business units/areas ).
  - b. services provided (supplier – information systems organizations, both internal and external).
3. leveraging the business rules and the business vocabularies on which they are based both to provide better information systems support of the business and to improve the flexibility, quality and efficiency of the information systems.

NOTE: As they are more commonly understood, use cases and requirements for representing data structures and rules in class-of-platform models and vendor-specific models are not addressed in this position paper.

Business Semantics Ltd believes that SVBR is the best existing standards proposal to address the business requirements and use cases for the first two of the above three high-level business capabilities, and to provide the business foundation on which to accomplish the third.

## “Rule Language Framework” Architecture

### Some fundamental principles that must be taken into account for success

- ❖ Sharing rules that mean anything requires sharing the vocabularies with which the rules are defined and expressed
- ❖ Rules cannot be formulated or expressed except in terms of some:
  - organizational (domain, discipline, industry) vocabulary/terminology/ontology, or
  - information system model of data/document content structure.
- ❖ Such rules formulation and expression occurs in four principle contexts; i.e. when you talking about one of four different things:
  - talking about the actual things dealt with by the activities of the organization to which the rules apply (business context).
  - talking about the data/document content structures in information systems whether stored, transient, or presented on some media:
    - Platform Independent Model context.
    - Class-of-platform specific Model context.
    - Platform/vendor-specific Model context.
- ❖ If the basis for rule definition and expression changes from one of the above four contexts to another, the rules must be reformulated and re-expressed in the new context. This requires a full semantic mapping between the vocabularies and/or data/document content structure models in the two contexts, and a transformation of the rules from the original to the new context.
- ❖ There can also be different bases for rule definition and expression within in one context (of four above) which require a similar mapping and transformation; e.g.
  - Business context (SBVR; OWL/RDF)
  - Platform Independent Model context (PIM) context (UML PIM)
  - Class-of Platform specific Model context (relational database; Production Rules; Business Object Component)
  - Platform/vendor specific Model context (Oracle database; Sybase database)

## Concrete Examples of Business Rules (about the business itself)

### Rules supporting Business Definitions (“it is necessary that”)

Each rental car always has exactly one vehicle identification number.

(It is necessary that each rental car has exactly one vehicle identification number).

The circumference of each circle is always the diameter of the circle times pi.

(It is necessary that the circumference of each circle is the diameter of the circle times pi).

international return rental

Definition: international rental that has country of the return branch of the rental that is the country of registration of the rented car of the rental

(It is necessary that an international return rental is an international rental that has country of the return branch of the rental that is the country of registration of the rented car of the rental).

### Rules governing Business Actions (“it is obligatory that”)

The average of ages of rental cars owned by each local area must be less than 5 years.

(It is obligatory that the average of ages of rental cars owned by each local area is less than 5 years)

An agent must tell each new customer that the New Customer Discount is available to the customer.

(It is obligatory that each new customer is told by an agent that the New Customer Discount is available to the customer.)

An agent must tell each new customer what special offers are available to the customer.  
(It is obligatory that each new customer is told by an agent what special offer is available to the customer.)

Each rental car must be tested before the car is purchased.  
(It is obligatory that each rental car is tested before the car is purchased.)

A rental must incur a location penalty charge if the drop-off location of the rental is not the return branch of the rental.  
(It is obligatory that a rental incur a location penalty charge if the drop-off location of the rental is not the return branch of the rental.)

## References:

### Rules Framework Architecture

["What's the Business in Business Rules?"](#)

Business Rules Journal article by Donald Chapin

### Building a Business Vocabulary (Seminar Slides)

["Capturing the Language of the Business"](#)

Pre-conference Seminar given at 2003 Business Rules Forum by Donald Chapin

### Semantics of Business Vocabulary & Business Rules (Proposed OMG Standard)

["Semantics of Business Vocabulary & Business Rules"](#)

Presentation on OMG standards proposal given at the 2004 Business Rules Forum by Donald Chapin

["Semantics of Business Vocabulary & Business Rules"](#)

Presentation on OMG standards proposal given at DAMA (US) 2004 by Donald Chapin

["Organizing Business Concepts"](#)

Business Rules Journal article setting out the vision for SBVR by Donald Chapin

["Semantics of Business Vocabulary & Business Rule"](#)

Business Rules Journal article by John Hall

### Governance and Rules

["The Importance of Business Rules for Multinationals"](#)

Presentation on corporate governance given at the 2004 European Business Rules Conference by Donald Chapin

["The Business Motivation Model: Business Governance in a Volatile World"](#)

Business Rules Group paper (second edition) setting business policy and rules in the context of business governance (contributions by Business Semantics Ltd)

## Contact Information

Donald Chapin  
Business Vocabulary & Rules Consultant  
Business Semantics Ltd  
Suite 3  
30 Woodborough Road  
LONDON SW15 6PZ  
United Kingdom

[Donald.Chapin@BusinessSemantics.com](mailto:Donald.Chapin@BusinessSemantics.com)

Phone/Fax: +44 (0)20 8789-6084

Mobile: +44 (0)77 7178-2234

[www.BusinessSemantics.com](http://www.BusinessSemantics.com)