Brainstorming Next-Generation Rule Platforms

DecisionCAMP Bolzano
September 18, 2019

by Ronald G. Ross
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About Ronald G. Ross

Ronald G. Ross is Co-Founder and Principal of Business Rule Solutions, LLC (BRSolutions.com). BRS provides consulting, training and mentoring in support of concept modeling, business vocabulary, business rules, business knowledge engineering, and rule management.

Mr. Ross co-develops the landmark BRS methodology featuring numerous innovative techniques including the popular ConceptSpeak™ and RuleSpeak® (free on RuleSpeak.com, now also in Spanish, German, Dutch, Norwegian and Polish). These are the latest offerings in a 45-year career that has consistently featured creative, business-driven solutions.

Mr. Ross is Executive Editor and regular columnist of BRCommunity.com and its flagship on-line publication, Business Rules Journal. Sponsored by BRS, BRCommunity.com is an open community for professionals. Mr. Ross was formerly Editor of the Data Base Newsletter from 1977 to 1998.

Mr. Ross is recognized internationally as the ‘father of business rules.’

Mr. Ross serves as Chair of the annual Building Business Capability (BBC) Conference, the official conference of the IIBA®. He is co-author with John Zachman and Roger Burlton of the 2017 Business Agility Manifesto on BusAgilityManifesto.org.

Mr. Ross was a charter member of the Business Rules Group (BRG) in the 1980s and an editor of the two landmark BRG papers, “The Business Motivation Model: Business Governance in a Volatile World” (2000) and the Business Rules Manifesto (2003). He is also active in OMG standards development including SBVR.


Mr. Ross holds an M.S. in information science from the Illinois Institute of Technology and a B.A. from Rice University.

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Taking a hard look at the rule space ...

1. Have we made significant progress?
Taking a hard look at the rule space ... 

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2. Why don’t business rules and rule tools predominate?
Taking a hard look at the rule space ...

1. Have we made significant progress?

2. Why don’t business rules and rule tools predominate?

3. What remaining challenges do rule tools need to address?
What challenges do rule tools need to address?

1. Eliminate programmer workload
2. Better address sentiment and human discretion
3. Tie in more directly to business governance
What challenges do rule tools need to address?

1. Eliminate programmer workload
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A customer must be assigned to an agent if the customer has placed an order.
Sample rule

A customer must be assigned to an agent if the customer has placed an order.

The rule does not say ...

“When a customer places an order then ...”
Sample rule

A customer must be assigned to an agent if the customer has placed an order.

Flash Points
- When a customer places an order.
- When an agent leaves our company.
Sample rule

A customer must be assigned to an agent if the customer has placed an order.

Flash Points
- When a customer places an order.
- When an agent leaves our company.
Two Kinds of Business Rules

Definitional Rules

Reference: See SBVR Insider on www.BRCommunity.com
Two Kinds of Business Rules

Definitional Rules

Behavioral Rules

Reference: See SBVR Insider on www.BRCommunity.com
Violations of Business Rules

Definitional rules

Example
A customer must be considered a gold customer if the customer places more than 12 orders during a calendar year.

This rule might be ill-conceived, misunderstood, or misapplied but it *cannot* be directly violated.

Behavioral rules

Example
A customer must be assigned to an agent if the customer has placed an order.

This rule can be *violated*!
Are behavioral business rules rare?

A customer must be assigned to an agent if the customer has placed an order.
Eu-Rent - Concept Model

- **person**
  - holds [reservation holder]
  - [barred driver] is barred
  - [renter] is responsible for [reservation holder]

- **reservation**
  - results from [points reservation]

- **points reservation**
  - scheduled pick-up date
  - booking date-time

- **rental**
  - incurs [open rental]
  - placed date-time
  - pick-up date-time
  - drop-off date-time
  - total rental charge amount
  - rental charge amount
  - kind of rental charge
    - [provisional]
    - [actual]
      - penalty charge

- **branch**
  - starts at [intended pick-up branch]
  - ends at [actual pick-up branch]

- **rental car**
  - is returned smelling of smoke
  - [requested car group]
  - [rented car]
  - is assigned to [requested car group]
  - fuel level

- **credit card**
  - is charged against [rental charge amount]

- **car group**
  - tier
  - is categorized as [car group]
  - includes [car model]
  - is located at [car model]

- **car model**
  - is categorized as [car model]
  - tier
  - is located at [car model]

- **branch**
  - starts at [intended pick-up branch]
  - ends at [drop-off branch]

- **rental**
  - is assigned to [rental car]
  - is open

- **rental car**
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A. Reservation Rules
- A reservation must request a car group.
- A reservation must indicate an intended pick-up branch.
- The reservation holder of a points reservation must be a club member.

B. Car Pick-Up Rules
- The rental car that is assigned to a rental must be located at the actual pick-up branch of the rental at the pick-up date-time of the rental.

C. Rental Rules
- A rental may result from a reservation only if the renter who is responsible for that rental is the reservation holder of that reservation.
- A rental charge may be charged against a credit card only if the credit card is held by the renter who is responsible for the rental that incurs the rental charge.
- A rental may be open only if a provisional rental charge that is incurred for that rental is charged against a credit card that is held by the renter of that rental.
- A rental must incur a penalty charge if the drop-off branch of the rental is not the actual pick-up branch of the rental.
Eu-Rent Behavioral Rule

Flash Points

Eu-Rent Behavioral Business Rule:
The reservation holder of a points reservation must be a club member.

Flash Points:
1. A points reservation is created.
2. The person holding a points reservation is changed.
3. The reservation holder of a points reservation ceases to be a club member.
4. An existing reservation is converted into a points reservation.
The role of the watcher

Capabilities

1. Monitor events apart from processes
2. Automatically evaluate behavioral business rules based on flash points
3. Maintain continuous, unbroken awareness of state
The role of the watcher

Capabilities

1. Monitor events apart from processes
2. Automatically evaluate behavioral business rules based on flash points
3. Maintain continuous, unbroken awareness of state

Results

- Reduced programmer workload
- Higher business fidelity
- More responsive systems
Where DMN and decision models fall short for programmer workload

- Stateless view of the world
- No awareness of flash points
- No automatic ‘watcher’

Work offloaded by the rule tool
Where DMN and decision models fall short for programmer workload

Missing capabilities
1. Stateless view of the world
2. No awareness of flash points
3. No automatic ‘watcher’

Work offloaded by the rule tool
1. When to evaluate all rules
Where DMN and decision models fall short for programmer workload

Missing capabilities
1. Stateless view of the world
2. No awareness of flash points
3. No automatic ‘watcher’

Work offloaded by the rule tool
1. When to evaluate all rules
2. Synchronization of processes

Reference: See “Offering Donated Organs for Transplant”, Decision Management Community Challenge – March, 2019
RuleSpeak/SBVR Solution:
Where DMN and decision models fall short for programmer workload

Missing capabilities
1. Stateless view of the world
2. No awareness of flash points
3. No automatic ‘watcher’

Work offloaded by the rule tool
1. When to evaluate all rules
2. Synchronization of processes
3. Support for natural-language expression of rules

Reference: www.RueSpeak.com
Where DMN and decision models fall short for programmer workload

Missing capabilities
1. Stateless view of the world
2. No awareness of flash points
3. No automatic ‘watcher’

Work offloaded by the rule tool
1. When to evaluate all rules
2. Synchronization of processes
3. Support for natural-language expression of rules
4. Coordinating responses to violations of rules
What challenges do rule tools need to address?

1. Eliminate programmer workload
2. Better address sentiment and human discretion
3. Tie in more directly to business governance
Sample rule

No Hugs Rule: An employee is not permitted to wrap arms around another employee and squeeze.
Sample rule: Unforeseen circumstances

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Sample rule: Unforeseen circumstances

**No Hugs Rule:** An employee is not permitted to wrap arms around another employee and squeeze.

**Enforcement Level:** Override by authorized actor with justification
What about automation?

A hard hat must be worn in a construction site.
What about automation?

A hard hat must be worn in a construction site.
Enforcement level
## Enforcement level

<table>
<thead>
<tr>
<th>Enforcement Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>strictly enforced</td>
<td>If an actor violates the behavioral rule, the actor cannot escape sanction(s).</td>
</tr>
<tr>
<td>deferred enforcement</td>
<td>The behavioral rule is strictly enforced, but such enforcement may be delayed — e.g., until another actor with required skills and proper authorization can become involved.</td>
</tr>
<tr>
<td>override by pre-authorized actor</td>
<td>The behavioral rule is enforced, but an actor with proper before-the-fact authorization may override it.</td>
</tr>
<tr>
<td>override with real-time waiver</td>
<td>The behavioral rule is enforced, but an actor may request a real-time waiver from another actor having before-the-fact authorization to give such waivers.</td>
</tr>
<tr>
<td>post-justified override</td>
<td>The behavioral rule may be overridden by an actor who is not explicitly authorized; however, if the override is subsequently deemed inappropriate, the actor may be subject to sanction(s).</td>
</tr>
<tr>
<td>override with explanation</td>
<td>The behavioral rule may be overridden simply by providing an explanation.</td>
</tr>
<tr>
<td>guideline</td>
<td>Suggested, but not enforced.</td>
</tr>
</tbody>
</table>

What challenges do rule tools need to address?

1. Eliminate programmer workload
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In consideration of mutual promises, Apple and Publisher (each a “Party” and collectively, “Parties”) hereby agree as follows:

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The landscape of business governance

Governing Rules

Automated Systems
The landscape of business governance

Governing Rules

Closing the governance gap
1. Natural language support
2. Behavioral business rules
3. A watcher and flash points

Automated Systems
The landscape of business governance

Governing Rules

Automated Systems

explainability
Next-Generation Rule Platforms

Lower programmer workload, better tie-in to people & business governance!

Thank You!

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