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CONCEPTUALISATION OF BUSINESS RULES

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Abstract. *The Business Rule Revolution is happening everywhere, even if it seems invisible. An organization aiming to better manage its important business rules needs a goal, a roadmap, and a plan for action. We propose a four step evolvement of business rules starting from conceptualization to representation to stimulation till validation. First phase named as conceptualization includes how the business rules are to be generated and what is to be the source of rules. Representation discusses what part of rules. The next step would be the simulation of the rules and in the end validation of the rules. This paper concentrates on the conceptualization of the business rules. In this paper we will be discussing the framework of conceptualization of business rules.*

Keywords*: Business rules, Conceptualization, Business Rule Management,*

I. Introduction

The need of business to be more extensible and flexible is the most sought after for the last so many years. To meet these demands two fundamental different approaches emerged on different independent platforms. Both the approaches survived and remained self contained without developing and deploying each other. These two approaches are now days commonly known as Business Process Management and Business Rule. Overtime various authors have produced different definitions of the term business rule.

According to the Business Rules Group, the first authoritative definition of the term 'business rule' appeared in the seminal 1995 report of the GUIDE Business Rules Project, entitled "Defining Business Rules—What Are They Really?" This definition reads: *"A business rule is a statement that defines or constrains some aspect of the business. It is intended to assert business structure or to control or influence the behavior of the business"* The same definition appeared in the Business Rules Group's Final Report of July 2000.

In 2001, von Halle defined a business rule as *"a condition that govern(s)…. business event(s) so that (they) occur in such a way that is acceptable to the business."*

In 2008, the authors of the SBVR chose to elaborate on this definition rather than the more general one and defined a business rule as "a *rule that is under business jurisdiction..... The semantic community can opt to change or discard the rule. Laws of physics may be relevant to a company (or other semantic community); legislation and regulations may be imposed on it; external standards and best practices may he adopted. These things are not business rules from the company's perspective"*

All organizations are subject to the laws of physics. Therefore, since these cannot be violated, it might seem that an organization does not need to document such rules or include code in its application systems to ensure that such rules are not violated. However, many laws of physics need to be taken into account when establishing the rules governing the capture of information about the real world. Consider a college timetable system in which college days are divided into periods of, say, 55 min each and in which groups of students are assigned to a particular classroom. At least two laws of physics need to be taken into account in such a system. First, a person, or for that matter any concrete object, cannot be in more than one location at the one time. Our college timetable system should therefore prevent any teacher being timetabled to be in more than one classroom during the same timetable period. Second, time is unidirectional. Nothing can therefore finish before it starts. Our college timetable system should therefore also prevent a timetable period being defined with an end time earlier than its start time. The college can, of course, *"opt to change or discard"* the rules that ensure that information representing such impossible situations cannot be entered into the timetabling system; these rules would then qualify as business rules according to the SBVR definition.

The business Rules has basically two approaches: technology approach and methodology approach. Where business rule technology approach is many decades old, methodology approach has gained momentum recently. Methodology approach discuss what, why, when and how of business rules. We propose a four step evolvement of business rules starting from conceptualization to representation to stimulation till validation. First phase named as conceptualization includes how the business rules are to be generated and what is to be the source of rules. Representation discusses what part of rules. The next step would be the simulation of the rules and in the end validation of the rules as shown in Figure 1. First phase, which is the subject matter of this paper named as conceptualization includes how the business rules are to be generated and what is to be the source of rules.

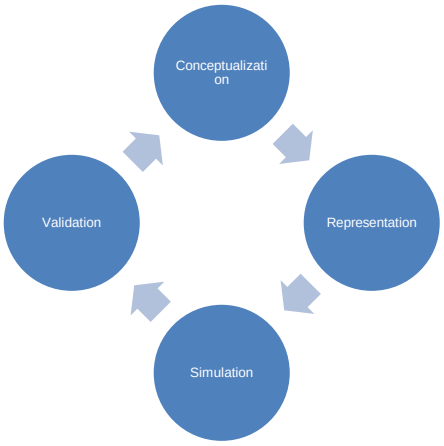

Figure 1

II. Conceptualization

Business rules strongly relate to several concepts of the business. These relations can be seen in the layered structure shown in Figure 2.

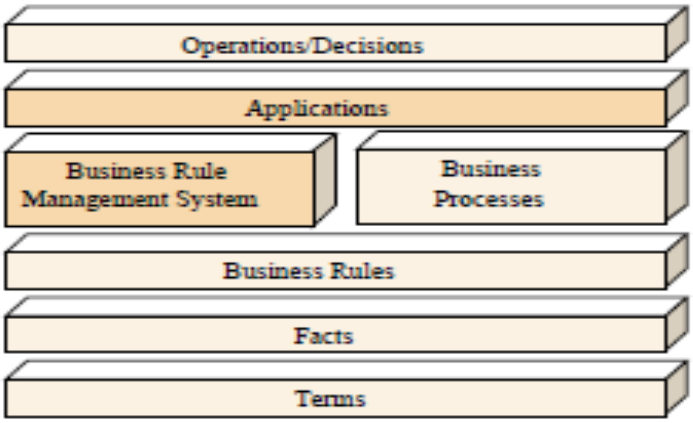

Figure 2

For example in an educational institution rule for admission as lateral entry is as follows:

Lateral entry to a program shall be allowed after approval of Academic Council of University under following cases:

1. *Lateral entry schemes as per AICTE/UGC*
2. *Transfer cases as approved*
3. *Migration cases (National)*
4. *Migration cases (International)*
5. *Any other case such as branch change etc.*

Credits and Course Mapping

The Academic Council shall look at the courses, successfully completed by the candidate before applying for lateral entry to a program. The courses shall be compared to the existing courses of the program and equivalence shall be drawn.

The council shall define the following:

1. *Equivalent courses (EC) that the candidate may be declared as having already completed.*
2. *Overlapping courses (OC) whose contents have major overlapping with the courses for which the candidate has already been granted credits and therefore the same cannot be opted for by the candidate in future.*
3. *New Elective Courses (NEC) which do not map with any of the courses of the program but can be treated as elective in nature, fulfilling the objective of the program.*
4. *Bridge Courses (BC) that the candidate should do to bridge the academic gap.*

All bridge courses prescribed to a candidate shall be

- *'Core' in nature in the sense that the candidate should pass these to become eligible for the award of the degree.*
- *Non-credit courses.*

The Academic council shall define the complete matrix stating the courses mapped and credits awarded/to be awarded to candidate for EC & NEC.

Terms. The above exemplary business rules make use of the words courses, candidates, credit etc. Each business rule associates a particular standardized meaning with this word. Consequently, in order to avoid ambiguities and provide consistency for the whole business, these special words, called terms have to be defined properly. These terms build a foundation for the other concepts, like shown in Figure 2. For example candidate here is defined a person who applies to the institute for a Course.

Facts. In exemplary business rules, the term course relates to another term candidate. These relations between terms are called facts. Facts can set arbitrary many terms into relation. Facts do not define any constraints for these relations, but rather a general connection between terms. In this example a fact is for example a course is in relation to a candidate or a candidate has a credit.

Instance Model. All the terms and facts are comprised in the fact model or instance model which might be presented textually or visually. For example following may be the instances in an academic institution registration process.

A candidate may be internal or external

External candidate may be vertical or horizontal

If vertical entry, than candidate may have to clear one of three courses to be treated as Bridge Course (BC).

If horizontal entry, candidate may or may not have the same line of the courses as in the institution.

If candidate has cleared an extra course which is not in the institute syllabus if it is to be treated as Equivalent courses (EC) or Over lapping Course (OC).

Business Rules: After defining facts and terms now the business rule come for work upon. Business rules can be defined as possible and logical statements that constrain possible instance models, derive particular parts of the instance models according to a derivation instruction, or advice how the instance model should look like. In the above example one business rule may be emerged as, *A candidate of lateral entry has to clear a bridge course which will be core and non credit course.* But while discussing business rule it has to take into consideration that business rules should be unambiguous and consistent. In other words it should have one interpretation and should not contradict with another rule.

III. Conclusion

After conceptualizing the business rule, representation part come into play. Representation can be done through text language or some graphic method. Validation and simulation of the business rule is to be done in a real life situation. A final advantage of the proposed approach concerns rule management. The concept of rule management is closely related to the efficient organization and retrieval of business rule expressions.

Bibliography

1. Business Rules Group, "Business Rules Manifesto The Principles of Rule Independence", Version 2.0, Ross R. G. (ed.) November 1, 2003, available at www. Business Rules Group.org.
2. Halle, B. v. (2006). The Essential Business Rule Roadmap. In B. v. Halle, *The Business Rule Revolution* (pp. 3-16). Silicon velly: Happy about.
3. The Business Rule Approach, Eduard Bauer, University of Paderborn.