

# Chapter XXIII

## Business Rules Management for Business Processes: From Modeling to Deployment

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### ABSTRACT

*The power of rule-based solutions has been demonstrated over a wide range of domains and a number of industrial-scale solutions and business rules have now proven their usability in complex real world scenarios. But the use of business rules in conjunction with business process management is still a young research field. Business process management (BPM) is a new paradigm for companies to carry out their value-creating activities. Bringing agility and flexibility to business process management is one of the most pressing challenges we are facing today. In this chapter, we make the case for rule-enabled BPM by motivating the need for introducing business rules in BPM and studying the possible advantages of combining business rule management (BRM) and BPM techniques. A discussion of possible uses of business rules (BRs) in business processes (BPs) is made. Furthermore, we also propose a lifecycle for BPM-oriented business rule management, and illustrate this using a business scenario. Hence, the aim of this chapter is to provide readers with insights into issues conceptual BRM applied to BPM in a business context, not from a formal, but from a methodological point of view.*

### INTRODUCTION AND MOTIVATION

When speaking about artificial intelligence, most of us would think about some intelligent dog-robot playing with their children or an autonomous shop assistant giving you advice to find the best shoe for you. Needless to say such visions are more likely to be found in science fiction book than on reports of enterprise management specialists. However, business people are still talking about artificial

intelligence in the enterprise. Well how then? This is what we will further discuss in this chapter by motivating the use of a business rules-oriented approach to business process management.

BPM is a discipline encompassing among others, the organization, modeling and implementation of business processes. Business processes capture the logic behind the business activities of companies. These companies have to react to changes in the market because each change

requires changes to the business, in order to keep it aligned with enterprise goals. Moreover, this has to be done in a cost-effective way. Another aspect is the ability of quickly switching strategies to adapt to new enterprise goals. Companies grow with their business and business processes have to be extended while kept efficient. This agility is a considerable advantage in competitive markets. As corporations turn towards a business process-oriented vision of their activities, agility and flexibility requirements towards the business rely on the degree to which these requirements are fulfilled by the design of business processes.

Imagine a shoe reseller that has a series of special offers and reductions on the price of the shoes it sells, depending on the time of the year, on seasons and on special celebrations. This shoe reseller wants to introduce new reduced prices for a certain set of shoe models for customers purchasing these shoes in the next 3 days, and with an additional bonus reduction for purchases of more than a pair of shoes. If this reseller implements this offer by “hard-modeling” it directly in his business processes, it generates additional implementation costs for an action that will only last some days. It may even be that the costs of this implementation surpass the benefits generated by this action. One can only imagine what the situation would be for a regional or nationwide reseller, introducing such complexity in its business with a huge number of offers. This small example shows us what complexity can reside in business processes. For this kind of business rules embedded in the business processes, a business rules approach seems most promising.

Another aspect impacting business processes are regulatory compliance and governance issues. Companies are now obliged to comply with laws and regulations, emulating from a number of governmental bodies and standardization bodies, or simply have to ensure their business is running with respect to guidelines they have defined in order to implement a certain strategy. For example, in the financial sector, the Sarbanes-Oxley Act,

SOX (2002), requires companies to define controls on their financial reporting. There are also numerous examples of domain-dependent regulations coming from the banking such as Basel (2004), health HIPAA (2006), or security management (ISO17799, 2008); ISO27002, 2008) sectors. There are several ways of achieving this, such as using internal controls or policies El Kharbili (2008). Business rule themselves are one very intuitive way of implementing policies.

We understand that requirements defined on business processes in order to keep up with change and regulations let us observe BPM from a new angle. One important asset companies have are corporate business rules. Business rules exist either as formally modeled or as volatile rules present in business artifacts such as manuals, guidelines or best practices, are the result of years of experience and constitute very important proprietary knowledge for companies. By extracting business rules which are hard coded in the business processes and in the know-how of business specialists, the knowledge on which the business relies could be made much easier to manage. As explained in Figure 1, the direct implementation of compliance measures and business change management logic (represented by the red connections) are bypassed by being implemented as business rules. The control of business processes is done by the business rules.

Currently, business process management does not separate the pure business logic of the business from the control flow organizing and orchestrating activities. The constraints placed on the business have to be outsourced from the business processes in order to be manageable. Through this separation between business processes and business rules, changes on the rules governing the business can be implemented without having to change the processes that are controlled by them. Reactivity to change is made easier. Agility, as far as the business rules management methodology used allows it, can thus be achieved. In this chapter, an introduction to the topic of business process

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