

Semantic Compliance Management in Business Process Management

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Abstract: Processes count to the most important assets of companies. Ensuring the compliance of processes to legal regulations, governance guidelines, and strategic business requirements is indispensable to controlling business behavior. Implementing business process compliance requires means for modeling and enforcing compliance measures. In this work, we motivate the need for automation in compliance management and introduce the role of policies. We propose a policy-based framework for business process compliance management and detail its architecture as part of the SUPER research project on semantic business process management.

1 Problem Definition & Research Motivation

Business Process Management (BPM) is the discipline of capturing, modeling, implementing, and controlling all activities taking place in an environment defining the enterprise, and this, in an integrated manner. Several languages, frameworks, and tools that support one or many of the listed aspects are available. Organizations do not only own business processes, they are also subject to regulations. Not being compliant to regulations diminishes the added-value that business processes represent for a given organization, e.g. through non-optimal alignment with, among other aspects, (i) quality standards, (ii) business partner service agreements or (iii) non-identified security flaws¹.

Non-compliance to regulations can also be the cause of judiciary pursuits as many financial scandals in recent years have shown. Consequently, non-compliance has both short-term (e.g. cost savings, reduced governance effort) and long-term (e.g. judiciary pursuits, market confidence) consequences. Compliance management is the term referring to the definition of means to avoid such harming outcomes by controlling an enterprise's activities. By extension, compliance management also refers to standards, frameworks, and software used to ensure a company's observance of legal texts and behavior according to pre-defined business requirements. In the context of BPM, compliance management applies on business processes and all related resources like data, people and systems.

¹ Non-identified security leaks can drop the overall quality of the business processes by making them vulnerable to malicious attacks.

2 Problem Domain & Preliminary Results

One possible approach to formalizing regulations in order to be able to verify and validate them is the use of policies and rules. Placed in the context of semantic business process management (i.e. modelling, configuring, executing and analyzing semantically enriched business processes as defined by the SUPER project²), our work tackles compliance management proposing the use of ontological representations of regulations as semantic policies and semantic rules.

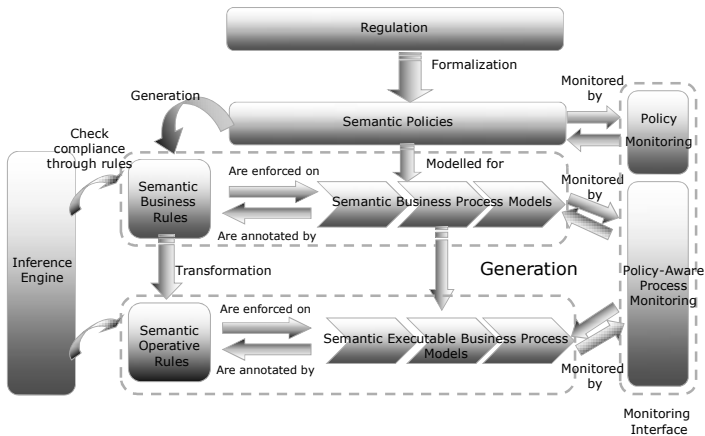


Figure 1: Overall approach to semantic compliance management in BPM

The main rationale here is that policies can model decision-making while business rules model action-taking. Another rationale is that different levels of description of business processes and services require different representations of these policies and rules. The overall approach we propose (Fig.1) has been introduced in [Kha08]. An ontology stack called the BPRO (Business Policy and Rules Ontology) [Kha09] has been designed for this purpose. Using the BPRO, BP descriptions can be extended to contain semantic information necessary to conduct compliance checking. A case study and a concrete rule language for serialization of regulation ontologies are the next steps in showcasing the use of our framework for compliance checking.

References

- [Kha08] El Kharbili, M.; Stein, S.; Markovic, I. & Pulvermüller, E. Towards a Framework for Semantic Business Process Compliance Management *Proceedings of the workshop on Governance, Risk and Compliance for Information Systems (GRCIS 2008) CEUR Proceedings, Vol. 339*, 1-15.
- [Kha09] El Kharbili, M.; & Pulvermüller, E. A Semantic Framework for Compliance Management in Business Process Management. *Proceedings of the international conference on business process and services computing*. March 2003. To appear.

² www.ip-super.org