

Effective Collaboration and Consistency Management in Business Process Modeling

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Theme: Business Intelligence and Business Analytics

Motivation and Justification

There is an ever-increasing demand on modern companies to adapt quickly to fast changes in their environment, such as new opportunities and threats. Agility is the most valuable thing a company should have as a flexible organization – the flexibility to meet new market demands and to seize opportunities before they are lost. Business Process Modeling (BPM) is a promising approach to enable agility in business process adaptation, by exposing business processes to relevant stakeholders at the right level of abstraction and giving them a medium to express and implement change.

One of the keys to achieve agility for creating business processes depends on close interaction between IT department and business units. This partnership is crucial for a successful BPM implementation. Usually, in most companies, after a new business need is identified the IT department is contracted to build an application that satisfies the need and the business operation units do not really care to know details of how the application is built. On the other hand, the IT department builds the application only to the specifications provided and does not really look much further into how this impacts the business. Essentially, IT and business units tend to stay within their own domains, with a border over which the business groups throw projects to the IT group, and IT responds with a technical solution. Having a complete understanding across the groups and, therefore, a true collaborative development process is always challenging.

BPM is an inherently collaborative effort among different groups of experts. Business analysts gather requirements and create high-level process models. Solution architects map the latter to architectural models. System developers implement architectural models in executable languages such as Business Process Execution Language (BPEL) or executable Business Process Modeling Notation (BPMN). Quality assurance engineers ensure that the solutions are properly tested and satisfy user's needs.

A typical BPM environment organizes relevant concepts into several levels of abstraction, each targeting a particular stakeholder role. The Zachman framework for enterprise architecture (<http://www.zifa.com/framework.html>) is a useful example of such multi-level perspective. The high-level business models developed by analysts focus purely on business aspects and ignore any details related to how they would be implemented on top of an existing IT infrastructure. As the design proceeds, IT architects and developers make decisions and add implementation details, while taking into account constraints imposed by the IT infrastructure, refining existing services, and creating new ones.

Thus, we can view BPM as a continuum of definition, refinement and transformation activities for analyzing business requirements, developing solutions for architecture and design, and creating executable models that go into production. The process typically results in many artifacts of different types, such as workflow models, specification documents, and source code. This artifact diversity increases considerably the complexity of the development process and makes effective consistency management a critical necessity.

Companies that adopt BPM solutions rapidly recognize that there are huge gaps among the different stakeholders involved in the modeling and development process, due to differences in terminology, levels of granularity, models, methods, and tools that each stakeholder may use. For example, there is no

guarantee that the requirements are consistently and accurately interpreted across the levels. Additionally, the current state-of-the-art BPM solutions lack appropriate support for collaboration and consistency management within and across different levels of abstraction. In particular, consistency management tasks such as tracing, differencing, comparing, refactoring, merging, conformance checking, change notification, and versioning are frequently made manually, which is time-consuming and error-prone.

In order to improve the collaboration of the stakeholders it is necessary to understand the key needs of each role in the modeling process and their current collaboration patterns, the relations among artifacts produced, ways how business and technical requirements are communicated and how needs of change are propagated across different levels of abstraction. Therefore, it is imperative to find ways to get the stakeholders cooperating in deeper relationships with each other so that they can better respect and understand the needs of the other.

Goals and Outcomes

The goal of this workshop was to bring together researchers and practitioners from industry and academia to discuss challenges, open issues and requirements for an effective collaboration and consistency management in BPM, within and across different levels of abstraction. Relevant questions discussed included: How the different stakeholders involved in BPM collaborate and communicate? How to effectively use BPM tools to capture and communicate requirements in order to improve the accuracy of the communication? What are the key challenges of maintaining consistency of models across levels of abstraction? How are new business and technical requirements communicated and conflicts resolved? What practices can improve the collaboration? How BPM tools can be better equipped for collaboration and consistency management? What is the appropriate level of standardization of business specifications and other artifacts like textual descriptions? Which principles and guidelines are necessary to optimize the alignment of business and IT roles? What is the appropriate way to structure the business-to-IT relationship while keeping consistency and flexibility to allow the organization to quickly adapt to new changes?

Workshop Structure

This half-day workshop featured invited presentations from industry, academia and tool vendors and an open-circle discussion to engage the audience. The presentations covered a range of BPM stakeholder perspectives, including business analysts and system architects. The speaker list included representatives from Scotiabank, Bank of America, Charles Schwab, IBM Toronto Lab, and IBM Research Lab in Zurich. The open-circle discussion fostered the exchange of ideas among the invited speakers and the audience.