

Chapter I

Business Process Modelling in the jABC: The One-Thing-Approach

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ABSTRACT

The one thing approach is designed to overcome the classical communication hurdles between application experts and the various levels of IT experts. Technically, it is realized in terms of eXtreme Model Driven Design, a technique that puts the user-level process in the center of the development. It enables customers/users to design, animate, validate, and control their processes throughout the whole life cycle, starting with the first requirement analysis, and ending with the demand-driven process evolution over its entire life span. This strict way of top-down thinking emphasizes the primary goal of every development: customer satisfaction.

WHY “ONE THING”: THE CULTURAL GAP

Globalization is a general and inevitable trend. It started with enterprises and politics and is now increasingly characterizing the process landscape: global operations require a global process modelling, global coordination, and, at least since Sarbanes-Oxley Act and Basel II, global transparency. This trend puts enormous pressure on

the process management, its efficiency, its compliance, its reliability, and its agility. Especially in large organizations it requires a large amount of automation and standardization, and often radical re-organization, in order to minimize the total cost of ownership, to control risks, and to protect the corresponding investment. These are necessary preconditions for enterprises to be able to consolidate their business leadership by using innovative processes as their distinguishing

intellectual property. At the same time, they need to obey new regulations, like the Sarbanes-Oxley Act and Basel II, which ask for just-in-time audits and retraceability of any business-relevant decision and operation.

This need to be flexible yet comply to changing regulations contrasts with the current state of the art in business process development, where essentially:

- Each business process, even if modelled by business developers, requires the manual support of IT experts for their realization,
- The (IT-supported) realization is a totally separate 'thing' from the original model, even though perhaps partially and semi-automatically generated from it, and where
- Changes in one thing (the model or the implementation) typically do not show up at the respective other level, let alone they are automatically taken care of.

We follow instead a holistic approach to close the classical gap between business-driven requirements on one side and IT-based realization on the other. We provide for this a seamless method called the *one thing approach*, described below, and a matching toolset that supports this method along the entire life span. The toolset is based on the jABC Framework (Jörges et al., 2006) to cover the business development phase and the business-to-IT transition, and on Integrated Development Environments (IDEs), like e.g. the popular Eclipse or NetBeans (<http://www.netbeans.org>), to support the IT development and deployment.

The name 'One-Thing Approach' (OTA) (Steffen & Narayan, 2007) reflects the fact that there is only one artefact during the whole systems' life cycle. This artefact is successively refined in various dimensions in order to add details concerning roles, rights, permissions, performance constraints, simulation code (to animate the models), productive code, pre/post conditions, etc.. The central effect is that all stakeholders, including the

application expert, can follow the progress from their own perspective (view): initially, application experts may for instance only browse the documentation and annotate the models, but as soon as some simulation code is available, they may start playing with the system in order to check and enforce an adequate user experience. The user experience gets the more realistic the further the development progresses. This continuous involvement of the application expert allows one to control the harm of the classical business/IT gap, because misconceptions and misunderstandings become immediately apparent.

Key to our solution for reducing this classical cultural gap is the tight combination of two central principles of software and system design: *service orientation* and *model driven design*.

- **Service-orientation** helps reducing the gap between requirements and implementation in the software development process in a very pragmatic fashion: in service oriented environments, a very high-level kind of programming in terms of orchestration *coordinates and harmonizes* application-level 'things' that are provided as services. Realizing the individual services is a clearly distinct task, which may well follow the classical software engineering practice, but it may also be hierarchical within the service world, in the sense that provided services may well be themselves composed of other services. This approach has the potential to truly include the application expert (typically the business developer and the business analyst) in the early development process: at the level of orchestration-driven service requirement, definition, and early refinement, which are close to the area of expertise. This inclusion of non-IT stakeholders as owners of the artefacts is a promise that object-orientation failed to achieve. Thus service-orientation, seen as a paradigm, has a potential to achieve a far

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