

Enhancing trust and buy-in from business: a platform for business -driven development of B2B transactions

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Abstract. A measure for the quality of software is the extent to which it corresponds to the business objectives and requirements it was designed for. The earlier those who elicit the requirements and those who will use the software can be involved in the development process, the better the results will be, and the lower the cost and time for development. This applies especially to the development of complex B2B transactions, which may be a long and tedious task, as it requires the collaboration of business and IT experts from all business parties of the value chain. This paper presents an integrated approach and a toolset to develop B2B transactions based on a sketch of the business model that the business collaboration is embedded in.

1. Introduction

A measure for the quality of software is the extent to which it corresponds to the business objectives and requirements it was designed for. The earlier we can involve the key stakeholders (users, sponsors) into the software development process, the better the results will be. A participative approach that elaborates the final software product in a progressive way, in that the users are given the possibility to validate intermediate results also enhances the buy-in and hence the level of trust in the final product. This is especially important for the development of complex B2B transactions, which require the collaboration of all business parties of the value chain.

This article examines the requirements engineering task in B2B transaction development. It refers to the link between business requirements, that is, *what is done*, *with whom* and with regards to *which business goals*, and business process that rule the business collaboration, that is, *how* business is done. This article presents an integrated methodology and a platform for business-driven transaction development. It starts with a sketch of the business model, which is transformed step by step into an operational business process. In section 2, the overall architecture of the platform is introduced. Section 3 discusses the methodology for business transaction development and section 4 finally points the way forward.

2. EFFICIENT – an Architecture for the Design and Validation of B2B Transactions

In the Efficient project, the CRP Henri Tudor has developed an integrated toolset (called EFFICIENT) to support the design and the validation of integrated B2B transactions. Business experts within a business network are guided throughout the process of the design of a new electronic business transaction, from the identification of the business model to its implementation as a message-based B2B process chain.

The EFFICIENT methodology ([1], [2]) for the development of electronic transactions involves the following steps:

- The modeling of the business requirements for the new B2B transaction in UML.
- A formal verification step, to ensure that the UML models are sound and respect all syntactic requirements.
- A business validation step, to ensure that the UML models correspond to the business requirements.
- The re-use existing transaction components and standards to both reduce the complexity of the final transaction and the development time.

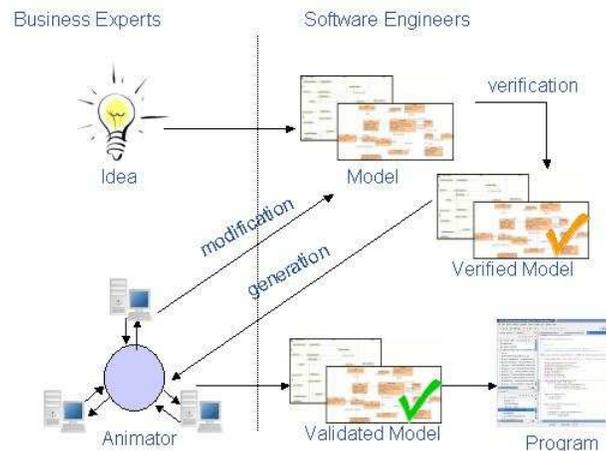


Fig. 1. EFFICIENT allows business experts to validate the transaction at design time

The EFFICIENT architecture is composed of 3 layers:

The *business layer* provides a top-level view on the business model. It allows the business partners involved in the value creation to have a common understanding of the business collaboration. In this layer, a UML use case diagram models the actors and the business activities they are involved in. A UML class diagram depicts the core business concepts (e.g. products and services, entities) of the value chain together with the relationships that hold between them.

The *specification layer* details the course of action of the transaction, i.e. the sequence of activities in the value chain and the information exchange between the various stakeholders. UML class diagrams model a UML activity diagram models the

dynamic aspects of the transaction, and the information exchange. For each business document (e.g. an order) there is a class diagram that specifies its content. To meet more sophisticated requirements, each message can be annotated by a set of business rules ([2]).

At the *technical layer*, after the transaction models have been formally verified, the transaction is then executed using a workflow engine. The infrastructure of this layer (workflow engine, interfaces, XML messages, rule checker) is automatically configured in an intermediary step, where the transaction models designed in the upper two layers are translated into a set of specification files for the technical layer.

3. On the Link between Business Model and Business Process Models

From a business point of view, the following challenges must be addressed to enable electronic business collaboration:

On a *conceptual level*, the common planning and coordination of business activities presupposes that all parties involved have the *same understanding of the business model*. They need to agree on which customers they will address and understand their respective needs. They need to have a common view on the products and services they produce to meet those needs, and they need to clarify who adds what to the value creation and what each party expects in return.

On an *operational level*, the business processes of each partner in the supply chain must be aligned with those of its suppliers, intermediaries and customers. This involves a fairly detailed conception of the ideal *flow of goods, financial resources and information between the supply chain parties* throughout the value creation process. The question that must be answered in this phase is “how do we organize ourselves in terms of our value creation activities, the information exchange needed to support them and the rules that help us coordinate and manage our collaboration?”

The common understanding of the business model among all business partners is generally a question of vocabulary alignment, and clarifying their respective stakes. Existing work, as the Business Model Ontology ([3]), provide a coherent ground for business players to describe their economic and organizational context, and understand each other. The respective concerns of every involved actor, on the other hand, shape his needs and the extent to which he will be willing to contribute in adding value to the transaction proposition. Goal-driven approaches, as proposed by Yu ([4]), allow clarifying the stakes, wishes and dependencies of each partner. A combination of aspects of these two approaches ([5]) allows the actors to comprehend the implications of the transaction they plan to realize.

Any business process that would implement the business model must fulfill the goals of each actor. We therefore propose a step-by-step methodology ([6]) that refines these business requirements into a process model, while asking the business expert some strategic questions, stating for instance the level of risk he would be ready to cope with, or the level of cost he might support when realizing a single flow of good.

An intuitive tool has been implemented, based upon an expert system, to drive the partners in the choices to be made for refining their initial business goals into a practical feasible business process. This tool allows selecting amongst well-known commercial exchange relationships a combination of which that would satisfy the requirements of all partners, building upon common commercial patterns such as the International Commercial (or Payment) Terms ([7]).

4. Conclusion

This article introduced shortly an extensive business-driven transaction design framework supporting the fostering of new commercial ideas into a sound and feasible business process, well-understood by business people and well-specified for IT experts.

Experimentations of this business-driven approach are being conducted in various fields (finance, e-government...) and will believably lead to improving the framework. Expected enhancements should augment the set of typical commercial relationships reusable, better the reasoning for selecting them, and improve the overall user-friendliness of the methodology and related tools.

To our knowledge, no other approach exists that supports the design of commercial transaction from its business understanding down to its process implementation, and we welcome any contribution that might improve this assistance.

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