

Abstract

Collaborative Processes of Enterprises: Supporting Global Development

Globalization has been one of the big trends for years in development. Due to diverse countries and cultures, it is still challenging to streamline all collaborating parties and to consolidate the existing expert knowledge in a way that “going global” brings value added to distributed projects. Therefore, global and distributed collaborations often lack effectiveness and efficiency, because workflows and processes usually do not fit together. This, in turn, leads to miscommunication and consequently to higher amount of rework and significant risk of failure in distributed development projects.

Original organizational processes of each collaborating entity should be kept as far as possible to benefit from each organization’s productivity even in a collaborative environment. For this reason, this dissertation addresses the following research questions:

1. How does a structure of a process framework for globally defined development projects look like?
2. What is the added value of such a process framework for process- responsible persons in development organizations?

This work offers a structured approach of how organizations are able to collaborate from a process perspective. For this purpose, several standard collaboration scenarios are created that help development organizations setting up an integrated process environment. These integration scenarios are Integration with equivalent processes, Horizontal Integration, Additive Vertical Integration, Alternative Vertical Integration, Merging Integration, and Hierarchical Integration. These scenarios are in its majority based on practical experiences from industry and literature review. The characteristic of each integration scenario is that it comes with a connector – a so-called Mediator – that can be used for collaborative process definition. A mediator is a process pattern that is used to connect two or more processes resulting in a new collaborative process by simultaneously keeping the original ones as much as possible. This ensures that organizations find themselves in the new collaborative processes environment which enables and motivates them to contribute to distributed projects with full capability.

The scenario approach is the preferred solution idea due to simplicity and intuitiveness when used in practice. Thereby, the number and type of defined scenarios represent most likely business constellations from practice. For modeling the Unified Modeling Language (UML) is used due to standardized and popular character.

The original contribution of this thesis encompasses a) a set of process patterns, b) comprehensive guideline deploying these patterns, c) mathematically formalization of these process patterns graph- based notation for accurate understanding and automation purposes, and d) practice- proven benefits documentation of this approach in two case studies.

The major benefits of this process integration approach are a) Velocity of Process Setup through pre-defined process integration mediators, b) Consistency of Process Integration by having pre-checked and valid process diagrams incorporating control- and objects flow c) Applicability of Approach in every process domain, d) Adaptability of Process Integration Approach to each collaborative scenario if necessary and e) Role Concept to clearly define responsibilities of any defined task.

The approach has been applied in two case studies. Given the limitations of case studies, the results indicate that communication effort was only twice as high as in a comparable co-located development projects that were not using the process pattern approach. This is 20% below the common standard, which says that communication is 2.5 times higher in distributed than projects running on one site. In turn, the amount of rework (15%) and risk of failure (progress of burn down chart) turned out to be same like or at least comparable to projects conducted co-locally.