Applying Model-Driven Integration Engineering to e-business – striving towards a framework concept *

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Changing business requirements such as providing new business services lead to an ongoing need for fast and flexible adaptation of the underlying information systems and infrastructure. Thus integration is a recurring task to realize complex e-business processes. Often integration problems are solved through integration service providers. This paper outlines a concept for a model-driven framework for process based integration in the area of e-business. The goal is automating the process of developing integration solutions to fully support integration with model-driven technologies. The concept combines several approaches to address these problems.

A new way of leveraging abstraction and handling complexity are model-driven methods. Formal models in terms of domain-specific abstractions become the first-class artifact of software engineering which are transformed to concrete implementations. To apply model-driven software engineering to integration means solving modeling and transformation challenges. At first the results of domain engineering within three different companies are presented and used to crunch the domain knowledge of e-business integration. This aims at identifying e-business specific application systems and processes as domain specific concepts. To ensure the fit with existing approaches we propose to extend existing enterprise architecture modeling languages for integration purposes.

Identifying schematic redundancy and using generators instead of manual programming is a base idea of model-driven software engineering. Ways to capture schematic redundancy are patterns, which are widely discussed in software engineering. Our concept proposes to use high-level, domain-specific integration pattern as input for the transformation. These patterns use the identified domain-specific concepts and combine them with business and architectural integration pattern. Using these abstractions, the concept will lead to the closure of the gap between business requirements and technical implementations and help raising the reuse of solution knowledge of system integrators.

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