A Generic Perspective Model for the Generation of Business Process Views

Horst Pichler and Johann Eder

Universitaet Klagenfurt
{horst.pichler,johann.eder}@uni-klu.ac.at

Abstract. Overwhelmed by the model size and the diversity of presented information in huge business process models, the stakeholders in the process lifecycle, like analysts, process designers, or software engineers, find it hard to focus on certain details of the process. We present a model along with an architecture that allows to capture arbitrary process perspectives which can then be used for the generation of process views that contain only relevant details.

1 Introduction

The complexity of big business (workflow) process models may contain hundreds of connected activities, augmented with information of diverse perspective, which are – corresponding to the application domain – required for the presentation of the process’s universe of discourse. Accordingly it is hard for various stakeholders in the process lifecycle (e.g., analysts, process managers, software engineers) to get a focus on the areas of interest. This can be accomplished with process views, which are extracts of processes that contains only relevant (selected) activities or aggregations of them. Most process view-related research publications solely focus on control flow issues. They assume that a set of already selected view-relevant control flow elements is given and aim at the generation of process views corresponding to diverse correctness criteria. Their findings are important for the generation of process views, but they do not show how view-relevant control flow elements are selected corresponding to specified characteristics [4,2,5].

These characteristics are usually defined as parts of process perspectives (also called aspects), where the most frequently mentioned are: behavior (control flow), function, information (data), organization, and operation. However, this list is neither complete nor fixed and may therefore be arbitrarily modified and extended depending on the application domain or workflow system [6]. Correspondingly most standardization efforts are likely to fail. Furthermore, especially in ERP-systems, complex perspectives can not always be captured directly in the process model, but through referral to an external resource repository.

We aim at the generation of process views for analytical purposes, based on queries which formulate combinations of constraints on diverse perspectives. In the following we present an architecture to import process models and related information from arbitrary sources (workflow systems, process modelling tools,
ERP-systems, etc.) into a predefined generic perspective model, which is then used to formulate user-queries for the generation of process views. Very similar to workflow data warehousing approaches [1] the structure and components of perspectives must suit the queries required to answer relevant questions. Furthermore it must be possible to extract information from various external sources, prepare (e.g., with aggregation operations) and transform it to the target perspective structures, to be loaded into the target perspective model, which can then be queried for further view generation.

2 Architecture Overview

The architecture of our systems, as visualized in Figure 1 consists of several components.

How to use this architecture is indicated by the encircled numbers: (1) an expert specifies the perspective structure of a given model type (like XPDL) which must be stored in the perspective database. (2) Then he implements an import interface for every perspective of this model type and an XPDL-transformer for the control flow perspective and imports all processes (or process model instances respectively) into the instance database. (3) Now a user can access the system by formulating queries with the query interface, which guides (4) the user’s with model-specific context-aware information from the perspective database for a selected model type and process model instance. (5) When this specification-step is finished the query engine generates and executes the queries, that results in a list of relevant components. Then a view can be generated, followed by an export as XPDL-document. The white boxes are future components for a complete architecture - a definition tool that helps the expert during the definition phase by scanning external data structures and the import (e.g., an ETL-tool similar as