Chapter IX
Modelling Business Process Variability for Design-Time Configuration

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ABSTRACT

A reference process model represents multiple variants of a common business process in an integrated and reusable manner. It is intended to be individualized in order to fit the requirements of a specific organization or project. This practice of individualizing reference process models provides an attractive alternative with respect to designing process models from scratch; in particular, it enables the reuse of proven practices. This chapter introduces techniques for representing variability in the context of reference process models, as well as techniques that facilitate the individualization of reference process models with respect to a given set of requirements.

INTRODUCTION

Some business processes tend to recur in different organizations or even in different industries. For example, process analysts often use the term *order-to-cash* to refer to a business process that starts from the moment a purchase order is received by a supplier, to the moment this purchase order has been fulfilled (and the supplier has received the corresponding payment). Virtually all order-to-

cash processes include activities related to invoicing, delivery and payment. However, variations can be observed across order-to-cash processes. For example, an order-to-cash process for the delivery of goods (e.g. delivery of office supplies) is different from an order-to-cash process for the delivery of services (e.g. delivery of consultancy services). In the first case, there is a physical delivery that happens at a discrete point in time and the condition of the goods can be checked upon receipt. On the other hand, the delivery of a service may occur over a long period of time (say 6 months). Over this period, several invoices may be issued for the same original purchase order. Also, checking the quality of a consultancy service is often trickier than checking the quality of a box of reams of paper. Not surprisingly, the corresponding order-to-cash process models will have many differences.
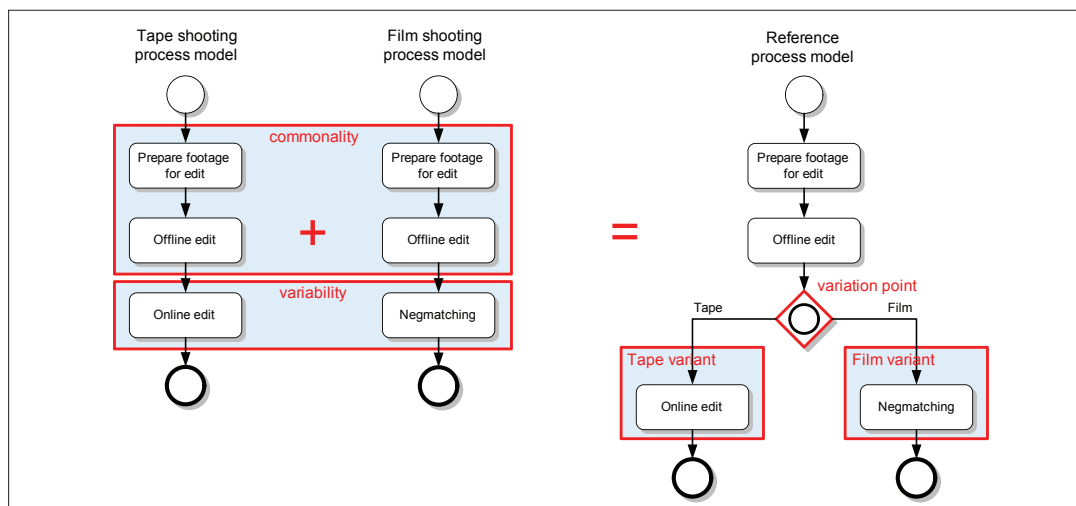
But despite such differences, companies have a lot to learn from each other when it comes to analysing and re-designing their order-to-cash processes. It would be inefficient if every time a company wants to model its order-to-cash, it did so completely from scratch, without consideration for how other companies perform their order-to-

cash process. In this setting, this chapter deals with the following question: *How to model business processes that are similar to one another in many ways, yet differ in some other ways from one organization, project or industry to another?* If we can do so, it then becomes possible to capture multiple order-to-cash processes in a single model. This combined order-to-cash process model can then be used as a starting point to derive order-to-cash process models for specific companies.

This idea is captured by the concept of *reference process model*. A reference process model combines a family of similar process models together. A reference process model is designed in a generic manner and is intended to be configured to fit the requirements of specific organizations or projects. Thus, it is an alternative to designing process models from scratch.

In this chapter, we will use examples taken from the film industry, in particular from the *post-production* phase of a screen project. Figure 1 shows two process models for screen post-production: *shooting on Tape* and *shooting on Film*. The modeling language used in this figure is BPMN (cf. Chapter X). These process models share some commonalities, represented by the first

Figure 1. A reference process model is an integrated representation of several variants of a process model

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