Chapter 6
The Impact of Enterprise 2.0 Principles on Business Processes: Emphasizing Human Decisions

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ABSTRACT

The impact of Enterprise 2.0 principles on business processes is a hot research topic and involves several aspects. In particular, this chapter addresses knowledge-intensive processes in which participants are not considered as mere resources needed to carry out tasks that are not automatable, but their involvement is required at a higher level where they can take decisions that affect the control flow of the process. Participants must be given as much information as possible on the decisions they have to take and on the business entities to be acted on and produced by the tasks they have to perform. For this reason, this chapter proposes a business process notation that integrates the data flow and the control flow and focuses on three kinds of decisions, referred to as data selection, task selection, and performer selection. It also illustrates the structure of to-do lists, which are the major interface between the participants and their tasks.

INTRODUCTION

During the past few years, organizations have taken important steps to make their business practices explicit and shared through the adoption of the business process technology (Davenport & Short, 1990). However, most of the attention was devoted to processes aimed at repetitive, standardized work and the point of view adopted is that of a central coordinator who orchestrates the work among the various participants involved, which may be persons (referred to as participants) playing

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specific roles or automated services. Participants receive work assignments through to-do lists; by clicking on the entries of their to-do lists, they can perform the corresponding tasks, usually by means of graphical user interfaces. When a task has been completed, a notification is sent to the process engine, which goes on with the next step in the process description. Process descriptions contain sufficient information for the engine to be able to decide which task to activate next. Although participants may exert influence on such decisions, they do so within the tasks assigned to them; they are not able to autonomously decide what has to be done next.

The impact of Enterprise 2.0 principles (Carbone, Contreras & Hernández, 2010) on business processes is a hot research topic and involves several aspects. In particular, this chapter addresses knowledge-intensive processes (Marjanovic & Freeze, 2011), in which participants are not considered as mere resources needed to carry out tasks that are not automatable; instead, their involvement is required at a higher level where they can take decisions that affect the control flow of the process.

In the domain of Process-Aware Information Systems (Dumas, van der Aalst & ter Hofstede, 2005), participants, by taking decisions and performing tasks, are meant to act on the business entities residing in the underlying information system. The data flow is then essential to give the readers of process models clear indications on which entities the tasks are performed and the decisions are taken. Participants' decisions affect the control flow of the process, but, in their turn, they are affected by the entities to be acted on. A stronger integration between the control flow and the data flow is then needed, and, to this end, a clear distinction must be made between intrinsic decisions and extrinsic ones.

Intrinsic decisions are limited in scope as they affect the entities involved in the execution of tasks; an example is the evaluation of a conference paper. In this case, the decision may simply amount to selecting a score in a given range, but nevertheless, it may be a difficult one. Extrinsic decisions are broader in scope; they are needed when: a) there are several tasks that can be performed with the same data and a choice has to be made, b) when it is up to the performer to select the input data from among those available before working with them, or c) when the performers of subsequent tasks are decided by the performers of previous tasks. These three kinds of extrinsic decisions are referred to as task selection, (input) data selection, and performer selection, respectively.

To show how such decisions can be represented in process models, this paper introduces a notation, called Chant, in which the control flow and the data flow are integrated. As to its graphical representation, Chant draws on Petri nets (Murata, 1989) and hence it is made up of places and transitions connected by oriented arcs. Transitions represent tasks and places represent run-time entities called events: events point to business entities.

This chapter is organized as follows. Section 2 presents background information on flexible business processes, on the complementarity of activity-centric models and information-centric ones, and on the role of to-do lists. Section 3 describes the Chant notation with the help of an example. Section 4 illustrates the basic data-flow rules that establish the input and output requirements for the tasks. Section 5 addresses decisions and the grouping of tasks implied by decisions. Section 6 deal with the organization of to-do lists, which are the major interface between the participants and their tasks. Section 7 presents the final considerations.

BACKGROUND

Processes aimed at repetitive, standardized work received great attention in past research and efficient solutions based on the notion of orchestration have been proposed (Weske, 2007). Orchestration is the distribution of work among the various