Chapter 19
Lightweight Workflow

Hajo A. Reijers
Eindhoven University of Technology, The Netherlands

ABSTRACT

This chapter describes lightweight workflow as a possible approach to counter many of the issues related to the introduction and sustained use of operational workflow management systems. Aside from a description of the essential features of lightweight workflow, this chapter also provides a reflection on the application of lightweight workflow in practice. Lightweight workflow is a very relevant direction to be aware of for practitioners who consider the use of workflow technology. Researchers may find inspiration from this chapter to further the adoption of workflow management technology.

INTRODUCTION

Workflow management systems (WfMSs) are among the core technologies associated with process management. At the introduction of this technology, some two decades ago, many expected that the technology would be widely adopted by industry (White & Fischer, 1995; Koulopoulos, 1995). But despite its supposed effectiveness to support operational business processes in their execution (van der Aalst & Hee, 2002), it is fair to say that the technology has not lived up to this expectation yet.

It can be argued that the reason for this is that the application of a WfMS makes business process execution too rigid, obstructing users to react freely to the breakdowns occurring during their evolution (Bowers et al., 1995). Some blame the rigidity on the use of formal workflow models; others on the strict coupling between modeling and execution (Dourish et al., 1996). Especially the lack of flexibility to deal with unforeseen situations is a very widely felt shortcoming of many commercially available

WfMSs. It has resulted in research as well as industrial approaches to alleviate the problem, for example see (Reichert & Dadam, 1998; Kammer et al., 2000; van der Aalst et al., 2005; Kaan et al., 2006).

Over the years, commercial workflow technology has become an increasingly sophisticated type of software system. A commercial system may include extensive functionalities to deal with both regular and exceptional cases, to support process modeling and simulation, to allow for run-time monitoring as well as for the generation of periodic management information, and many, many other features. Although this development addresses some of the shortcomings of the technology that were just touched upon, a new type of problem emerges: The technology becomes too expensive, too extensive and too complex to use. Many small- and medium sized organizations seem reluctant to look into workflow technology for this reason (Smith & Fingar, 2003). And even if an organization can afford the technology, it may seem a disproportionate investment if the processes that need to be supported are highly structured and relatively simple.

This chapter elaborates on an approach that is opposite to the direction of most developments in the workflow field: It focuses on workflow systems that can do less, not more. We will refer to such systems as lightweight workflow. The purpose of this chapter is not to position lightweight workflow as a replacement of full-fledged workflow technology, but rather as a niche alternative. In this way, the core principles of this idea can be expanded to address the needs of more organizations than currently seem to take advantage of this technology.

The structure of this chapter is as follows. We will first provide some background on workflow in general and lightweight workflow in particular. We will provide a comprehensive overview of the issues that lightweight workflow aims to address and provide a definition and the characteristics of this technology. Next, we will reflect on the actual effectiveness of this technology in two case studies we performed. Finally, we will reflect on related trends in the workflow landscape after which we will come to a conclusion.

BACKGROUND

A workflow management system (WfMS) is a software system that supports the specification, execution, and control of business processes (Jablonski & Bussler, 1996; van der Aalst & Hee, 2002). Conceptually, it can be said to do so by separating the logistics of the business process – as managed by the WfMS – from the content of the process – which is managed with other applications and carried out by various types of performers. The logistic side of a business process is taken care of by a WfMS on the basis of a predefined workflow plan, which can be used to hand out work items to the right performers in the right order, at the right time. The advantages of using a WfMS in this way are fourfold (Reijers et al., 2003):

1. Less coordination effort: The WfMS liberates human actors from the routine work they need for coordination – it's the WfMS that will take care of this.
2. Higher quality: The WfMS will offer to actors at least the work which is required to deliver the preferred quality of service – the plan describes what should be done at a minimum.
3. Higher efficiency: The WfMS will offer to actors at most the work which is required to produce an acceptable result – if the plan did not cover a step under certain conditions, it is in principle not required for the case under consideration.

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