Chapter 11
Extending Workflows for Knowledge Flow Automation

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ABSTRACT

Effective execution of business processes also requires the provisioning of relevant knowledge to workers in various business contexts. Knowledge flow automation aims to enable seamless transfer of knowledge by supporting the capture and sharing of organizational knowledge related to business processes. Given the strong correlation between the flow of work and the flow of knowledge, workflow systems are a natural platform for supporting knowledge flow. However, existing workflow technology does not yet provide the needed mechanisms suitable for supporting knowledge flow. This chapter presents an overview of different types of workflow-based knowledge management systems that provide knowledge workers with the required knowledge while supporting the flow of work. In addition, a new perspective is presented on extending workflows to support knowledge transfer processes by introducing the concept of "knowledge workflows" and outline future research directions in this area.

1. INTRODUCTION

Workflow systems have proven to be an effective tool in improving worker and organizational productivity by helping manage and automate business processes (Choenni, Bakker & Baets, 2003; Kueng, 2000; Reijers & van der Aalst, 2005). However, in today's knowledge economy, a significant portion of business processes involve knowledge work and require knowledge flow support to enable efficient execution of the business processes. According Forrester Inc, economic and business shifts in the global economy such as the shortening of product life cycles, increasing competition, and changing market dynamics are driving a major change in the nature of work

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(Moore & Rugullies, 2005). In this regard, there is an increasing need for an information workplace that seamlessly integrates the disparate information tools and knowledge sources with business and knowledge processes to support knowledge work and improve knowledge worker productivity (Moore & Rugullies, 2005).

Within the past decade, several researchers have emphasized the strong relationships between flow of work and flow of knowledge and the need to extend business process automation systems to support knowledge flow (Figure 1) (Abecker et al., 2000; Fahey et al., 2001; Nissen, 2002). Even from a knowledge management perspective, process orientation is critical to providing task relevant knowledge in the context of an organization's operative business processes (Maier & Remus, 2002).

Given their large scale adoption and use in coordinating and automating structured business processes, workflow system form an ideal platform that can be extended to support knowledge work and knowledge flow. Workflows provide contextual information and the temporal context that is important for just in time knowledge support. In addition, imparting flexibility and integrating tools to support creative tasks and knowledge-based activities can help workflows in structuring knowledge intensive work by interleaving flow of work and flow of knowledge. Workflows can also be used in structuring, automating the activities involved in ad hoc knowledge sharing, and knowledge transfer processes due to their ability to integrate different applications and coordinate activities.

In this chapter, we review the different approaches adopted by researchers in extending workflow systems to support knowledge flow for knowledge intensive work. We categorize the extant literature into two different categories of workflow systems that include (1) knowledge support for workflow tasks, and (2) workflow support for knowledge flow. The first category of workflow systems support knowledge flow

Figure 1. Interrelationship between flow of work and knowledge flow (adapted from Nissen, 2002)