Chapter XIII
The People Integration Challenge

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ABSTRACT

This chapter discusses the challenges associated with integrating work performed by human agents into automated workflows. It briefly recounts the evolution of business process support systems and concludes that although the support for people integration continues to evolve in these offerings, in broad terms it has not advanced markedly since their inception several decades ago. Nevertheless, people are an integral part of business processes and integration of human work deserves special consideration during process design and deployment. To this end, the chapter explores the requirements associated with modelling human integration and examines the support for people integration offered by WS-BPEL, which (together with its WS-BPEL4People and WS-HumanTask extensions) currently represents the state of the art when defining and implementing business processes in a service-oriented environment. In order to do this, it utilises a common framework for language assessment, the workflow resource patterns, both to illustrate the capabilities of WS-BPEL and to identify future technical opportunities.

INTRODUCTION

Processes don't do work, people do. – John Seely Brown, Former Chief Scientist, Xerox

Inspired by the work of Hammer and others (Hammer and Champy, 1993; Davenport, 1993) on business process reengineering, modern corporations are increasingly adopting process-orientation and Business Process Management (BPM), as the fundamental rationale for structuring and managing their organisations. Integrating people both within and outside of the organisation into the enactment of these business processes is a crucial aspect of BPM. This trend coincides with the service enablement of enterprise systems, an architectural approach commonly referred to as the Service-oriented Architecture (SOA). While techniques for the composition and orchestration of enterprise services have considerably advanced in recent years, the challenge of integrating people into these automated processes has mostly been overlooked.

This applies in particular to service orchestration languages such as the Web Service Business Process Execution Language (Alves et al. 2007). While WS-BPEL promises easy integration of enterprise systems exposed via Web Services, it initially did not accommodate human-performed activities, an issue later remedied by two language extensions, WS-BPEL Extension for People (Agrawal et al. 2007a) and Web Services Human Task (Agrawal et al. 2007b). The purpose of this chapter is to provide a compelling case for people integration. It examines the common requirements and challenges of people integration documented in the literature. Given the priority of service enablement on the agenda of organisations, it proceeds to assess the capability of web service technology to effectively deal with people integration in a manner which is generically applicable.

Furthermore, we will explore the reasons why people integration deserves special consideration during business process design. Process-orientation and the division of labour have led to a high degree of specialisation in the individuals that make up an organisation. It is of paramount importance that in this context, the individual units of work that are part of a business process are routed to the right individual such that they can be executed on a timely and efficient basis. Indeed, many commercial systems have not markedly advanced in their support of the wide range of ways in which humans may wish or be required to interact with a business process. To this end, we will discuss patterns frequently observed in people-centric business processes and the implications of these when modelling human integration. On a general level, these encompass patterns observed in Process-aware Information Systems (PAIS) such as case handling, delegation, escalation and reallocation. Recent research has led to the classification of these requirements into a comprehensive catalogue of *resource patterns*.

From an industry perspective, WS-BPEL4People and WS-HumanTask constitute the state of the art in regard to people integration in a service-enabled environment. Although the specifications target a particular application domain, namely Web Services, they provide insights into the general, technological challenges of integrating people into automated business processes and provide a basis for an assessment of contemporary systems. We will examine the lessons that have been learnt in this area and explore the recent architectural and technological challenges associated with integrating human resources in automated business process solutions. In this light, the section introduces and discusses concepts underpinning WS-BPEL4People and WS-HumanTask. We conclude by giving an outlook on future challenges for people-centric process management that go beyond the technical integration of human tasks and put forward several recommendations that may help to improve the way humans interact with automated processes in the future.

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