A Human-Oriented Tuning of Workflow Management Systems

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Abstract. Workflow Management Systems (WfMS’s) offer a tremendous potential for organizations. Shorter lead times, less mistakes in work handoffs, and a better insight into process execution are some of the most notable advantages experienced in practice. At the same time, the introduction of these systems on the work floor undoubtedly brings great changes in the way that professionals work. If a WfMS’s work coordination is experienced as too rigid or mechanistic, this may negatively affect employees’ motivation, performance and satisfaction. In this paper, we propose a set of measures to “tune” functioning workflow systems and minimize such effects. The measures we propose do not require undue cost, time, or organizational changes, as they characteristically lie within the configuration options of a WfMS. We have asked an expert panel to select and validate the 6 most promising measures, which we present in this paper. From our evaluation of three commercial WfMS’s, we conclude that it depends on the specific system to what level these general measures can be easily implemented.

1 Introduction

A workflow management system (WfMS) is a software system that supports the specification, execution, and control of business processes [19]. Commercial WfMS’s have been around since the early nineties, while their conceptual predecessors range back even further, see e.g. [6]. They have become “one of the most successful genres of systems supporting cooperative working” [5]. The worldwide WfM market, estimated at $213.6 million in 2002, is expected to redouble by 2008 [38]. Furthermore, WfM functionality has been embedded by many other contemporary systems, such as ERP, CRM, and call-center software. WfM technology, in other words, has become quite successful and widespread. The reason for this popularity is fourfold [33]:

- The coordination of work becomes easier. A WfMS liberates human actors from the efforts to coordinate their work (“what do I do have to do next?”,” “where is the *#& client file?”,” “who must check this proposal next?”)
- A higher quality of service is delivered. The WfMS will ensure that the process is executed in correspondence with the intended procedure: important steps can no longer be forgotten, work will not get lost, and authorization policies are automatically enforced.
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- The work is executed more efficiently. Work items will only be allocated to workers by the WfMS if and when they are required to be executed.
- The process becomes more flexible. Ejecting the business control flow from traditional applications and moving it towards a WfMS simplifies the redesign of the process.

Recent successful implementations of WfMS’s are e.g. reported within the banking, automotive and IT industry [2,3,25]. Despite its success, WfMS’s have received their share of criticism as well, see e.g. [5,7]. Skeptical arguments are mainly raised by employees - the potential users - and work psychologists, who fear that workflow systems might lead to a mechanical approach to office work where man is seen as an exchangeable resource, e.g. like a machine, and not as a human being. In a study by Küng [24], an interviewee at an organization described the effects of a WfMS introduction within his organization as follows: "Jobs became more monotonous. The system forces the employees to work strictly according to the process definition. Through the use of the workflow system, we now have some kind of ‘chain production’ in the office."

The image of a WfMS as a rigid system is also produced very glaringly in the well-known case study of a WfMS implementation in the UK print industry [1]. The respective system was not accepted by the end users, who invented various ways to work around the intended procedures. The previous examples illustrate that through the rigid structure of a workflow system there is a risk of creating similar problems as to mass production and assembly line work in the previous 19th and 20th century, e.g. boring work, decreasing performance, unsatisfied and unmotivated employees.

This paper proposes measures that can be taken to reconfigure an implemented WfMS so that it becomes more agreeable to the needs of performers working with such a system. An important driver in the creation and selection of these proposals was to come up with measures that have a wide applicability and are easy to implement. The proposals have emerged from the confrontation of mainly two perspectives. On the one hand, we have considered the general characteristics that positively influence the motivation, performance and job satisfaction of performers. On the other hand, we looked at the policies that WfMS’s generally use for distributing and assigning work to performers. Even though such policies do not affect the work that has to be executed itself - as specified in an underlying workflow definition - they have a direct impact on the way people experience performing that work.

The paper is organized as follows. In the following section, we will give the theoretical background of the perspectives we mentioned, as used for generating the proposals. In Section 3, we will describe the various proposals, how they have been selected, and how they were validated by an expert panel. In Section 4, we present the evaluation of three current, commercially available WfMS’s to determine to what extent these specific systems can be reconfigured in accordance with the presented general proposals. This paper ends with our conclusions and recommendations.