

Chapter 1

Pattern–Based Task Management as Means of Organizational Knowledge Maturing

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ABSTRACT

This paper presents the principles of pattern-based task management (PBTM) that aims at knowledge maturing based on the integration of task and knowledge management. It takes into account that knowledge does not only manifest in artifacts but also in actions. The approach supports knowledge workers in the execution of their tasks by offering guiding task patterns without restricting their freedom of execution. Task patterns are collaboratively managed and support the sharing and development of work experience in a way, which makes this experience easily applicable to new tasks. The collaborative origin of task patterns requires offering obvious benefits to knowledge workers to motivate their contributions. In this regard, PBTM establishes an organizational knowledge maturation process that prevents the loss and ensures the development of organizational knowledge.

INTRODUCTION

Knowledge work has been declared the central paradigm of the new century (Drucker, 1994). However, it is a misunderstanding to see a knowledge worker as a person whose work is explained by the fact that he or she requires knowledge for it. We rather find that knowledge is a critical

factor in any kind of work. The central feature of knowledge work is rather the velocity with which persons who pursue such occupation have to update and extend their knowledge to keep pace with the speed of business and scientific development. Moreover, this updated and extended knowledge often determines the way how knowledge workers actually proceed. For instance, if an unexpected problem occurs, they must find a solution and adapt the work process appropriately. We find

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that knowledge workers' actions consist in the processing of information while at the same time information determines the flow of these actions. Consequently knowledge workers have to constantly learn. In addition, they have to do this in an informal and self-controlled manner (Pinchot & Pinchot, 1996). Due to the increasing importance of knowledge work it is crucial for organizations to support their knowledge workers as efficiently as possible. However, this requires new ways of thinking and using technology.

Any support of knowledge work must be based on a thorough understanding of its nature. One controversy in this respect is the question whether the required knowledge can be treated as an object or must be handled as a process – see, for example, the discussion in (Gourlay 2006). Indeed this question is far from academic and cannot be answered by simply deciding for one of the two options; we rather have to support both sides of knowledge. While the management of knowledge objects or artifacts such as electronic documents or person profiles can look back to a long history of more or less successful approaches in Information Technology (IT), the support of the dynamic side is less well understood and technically leveraged. The central question in this respect is how we actually handle knowledge as a process and support knowledge work in this respect.

Hereby a central insight is the understanding of the mutual dependence of knowledge and action (Riss, 2005). Knowledge without its actualization in action is pointless while action requires knowledge to be predictable and controllable. Moreover, action is the most important source of knowledge – we learn by doing. This raises the question how people's knowledge and actions work together in organizations and how this interaction can be intensified. Most technologies that support actions are focused on the execution of tasks and processes. Task management (TM) and process aware information systems (PAIS) effectively support the flow of work, however, they mainly disregard knowledge management

(KM). These systems mostly rely on predesigned support of work activities – even if they focus on knowledge work – but largely neglect the question how in return work activities can be used to collect work experience and how the latter can then be reused in processes again.

This article presents the results of our work on these research questions that we have obtained during the last 5 years in the EU-funded Integrated Projects NEPOMUK (*nepomuk.semanticdesktop.org*) and MATURE (*mature-ip.eu*). It presents the idea of activity-centered knowledge management (ACKM), which integrates TM and KM, and the realization of ACKM by means of pattern-based task management (PBTM). The central idea of PBTM consists in the creation of action-centric information objects that serve both requirements, that of KM and that of TM. We will present the fundamental principles of PBTM and shows its essential elements of implementation. Further implementation details of PBTM have been described in a number of other papers (Grebner, Ong, & Riss, 2008; Grebner & Riss, 2008; Ong, Riss, Grebner, & Du, 2008; Grebner & Riss, 2008; Schmidt & Riss, 2009; Hu, Du, Chen, Riss, & Witschel, 2009) and will not be repeated here.

However, PBTM does not only aim at the improvement of the individual knowledge worker's situation but likewise at the improvement of the organizational performance. Both targets are closely related. The organizational benefits can only be realized if knowledge workers significantly participate but this requires clear benefits for the individual knowledge worker. On the other hand it is the aggregation of information from the entire organization that makes it possible to produce considerable benefits for the individual employee. In this respect another aspect of PBTM comes into play, the development or maturing of knowledge. Recently, the concept of knowledge maturing has been brought up in the context of organizational learning (Maier & Schmidt, 2005). Here knowledge is described in terms of a coordinated development of knowledge artifacts and

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