Chapter 18
WPKT:
Work Process Knowledge Template for Codification of Organizational Process Knowledge

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ABSTRACT

The knowledge embedded in organizational processes has been difficult to codify and make available to other members who need access to this knowledge either because they perform complementary processes or may need to take over the processes in question. Previous approaches to the codification of such knowledge have recognized the difficulties of capturing the context within which the knowledge is utilized. In this design-science based work, the authors propose a work process knowledge template (WPKT) which follows a systems' approach to capturing work processes that balances complexity of the template with capturing relevant context. The template was pilot tested during development, and empirically evaluated for usability, ease of use and learnability in multiple real world settings.

1. INTRODUCTION

Organizational knowledge has several facets. According to (Davenport & Prusak, 1998) "Knowledge is a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents and repositories but also in organizational routines, processes, practices and norms."

Organizational knowledge is often differentiated into explicit knowledge that can be easily elicited and codified, and tacit knowledge, that is often based on heuristics (Dreyfus & Dreyfus, 1986) and in

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pure form, is considered expressible only by demonstration (Blair, 2002). However, a significant portion of organizational knowledge has both explicit and tacit dimensions to it (Nonaka, Toyama, & Nagata, 2000; Polanyi, 2012), and the problems of eliciting and codifying this knowledge are well acknowledged (Alavi & Leidner, 1999; Gold, Malhotra, & Segars, 2001). According to Jeffrey Miller of Documentum, "Every afternoon our corporate knowledge walks out the door and I hope to God they'll be back tomorrow," (Miller, 1998). In (Klein, 1998), naturalistic decision making is described as including "time pressure, high stakes, inadequate information (information that is missing, ambiguous or erroneous), …. poorly defined procedures…"

Tacit aspects of organizational knowledge are often used when performing tasks in environments of varying context (Ambrosini & Bowman, 2001; Augier, Shariq, & Vendelø, 2001; Hall, 2006). For example, consider a commercial loan officer in a local bank who creates loan proposal for applicant firms. She may follow several structured steps when creating each loan proposal, which would constitute the explicit knowledge that is required to perform the task. In addition, she may consider several issues subjectively, drawing from her tacit knowledge of the local environment. These issues may include the business viability of the project for which the loan is sought, or an assessment of the competence of the project's management. Based on her explicit and tacit knowledge, the loan officer may ask for more documents and evidence, and take different steps for each loan proposal she prepares. We see that many knowledge aspects of this organizational task are clearly context dependent.

The inclusion of context when codifying organizational work processes remains a challenge. For example, in (Hall, 2006), the tacit knowledge transfer project described was unsuccessful largely because "much of the process was occurring with no sense of an end-use context, or who the knowledge was being codified for….it is difficult to codify knowledge when there is no sense of end-use context.." Based on past works, organizational process knowledge is not easy to codify partly because of its variability due to context. The primary contribution of this work is the proposal of a template that incorporates the context of the task when codifying organizational processes or activities. We call this the Work Process Knowledge Template (WPKT). Our approach provides a bridge between two approaches that were hitherto considered mutually exclusive. The first approach involves depicting explicit organizational knowledge in the form of highly structured, context-independent processes that are easy to codify. These are usually represented using process diagrams. For example, a process diagram such as the data flow diagram (Gane & Sarson, 1982) or a UML Activity diagram (Fowler, 2004) can be used to depict the structured or explicit aspects of the loan proposal process described earlier.

The second existing approach involves capturing knowledge that is unstructured and context-dependent and usually captured in the form of video or textual wikis (Majchrzak, Wagner, & Yates, 2012). For example, the contextual aspects of the loan proposal process described earlier may be captured using text wikis or video snippets. However, codifying this becomes challenging because of the variable sequence of steps and the inputs that may be needed in order to perform the activity successfully each time in a varying context.

WPKT attempts to capture both the explicit and context dependent aspects of a task in one diagram, by defining context in terms of dimensions along which it can vary, and allowing specification of steps for varying context. While being able to incorporate context is a primary requirement of WPKT, another important design goal is the perceived usefulness and perceived ease of use of the template. We pilot tested WPKT during development, and then tested it in diverse real world situations in order to validate its applicability.