Subject-Oriented Adaptive Case Management
Extending Subject-Oriented Business Process Management to Knowledge-Intensive Cross-Enterprise Business Processes

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Abstract. Adaptive Case Management is a Business Process Management approach that is quickly gaining the attention of practitioners and scientists. In an effort to examine how Subject-oriented Business Process Management relates to Adaptive Case Management, this contribution proposes extending an existing ACM approach inspired by multi-agent systems with the capability of defining temporal-logical dependencies between tasks using Subject-oriented Business Process Management.

Keywords: adaptive case management; knowledge work; metamodel; subject-oriented process management; multi-agent systems.

1 Introduction

Classical Business Process Management (BPM) offers a rich and tested set of methods for well-structured and routine processes. The Adaptive Case Management (ACM) concept is an increasingly popular concept which promises to bring the benefits of BPM to the area of weakly structured knowledge-intensive business processes [1, 2]. Contrary to classical BPM systems which focus on automating business processes, ACM provides capabilities to adapt processes during runtime. “This form of runtime flexibility allows process participants to respond to challenges or new requirements that were not considered during designing the business processes.” [3]

However, both classical BPM as well as ACM assume that all process participants work towards the same goal. This assumption is increasingly becoming unsustainable as processes are more and more spanning multiple enterprises. In order to address this issue, [3] extends the ACM-approach of [4] based upon the paradigm of Multi-agent Systems (MAS). [3] proposes a distributed approach for managing and supporting knowledge-intensive cross-enterprise processes (KXBP) as well as a corresponding case metamodel. Although being a first step towards a comprehensive KXBP methodology for ACM, [3] currently focusses on defining and breaking down the work within a case. Therefore, the KXBP methodology offers no way to specify the temporal-logic dependencies of tasks.

This manuscript addresses this gap from a conceptual perspective by using the Subject-oriented Business Process Management (S-BPM) approach as a method for
defining the temporal-logical dependencies of a KXBP case. As this Subject-oriented ACM (S-ACM) approach relies on the S-BPM methodology, S-ACM not only extends the ACM-based KXBP approach of [3] but also demonstrates how S-BPM and ACM can be combined. Thus, this contribution demonstrates how S-BPM can be applied in knowledge-intensive cross-company business processes that may be changed while executing these processes.

2 Adaptive Case Management

ACM was first made popular by the well-renowned book [1]. [2] complements this book with practice reports and case studies. Although major principles of ACM are outlined in [1], it provides no concrete method for using ACM in a real-world environment. This gap has been closed by the method described in [4] that integrates classical BPM and Case Management with the Enterprise 2.0 paradigm. As the method from [4] serves as the foundation of this contribution, this section presents an excerpt from [4].

In ACM, knowledge workers are no longer expected to follow strictly defined business processes regardless of their suitability for a given problem. Instead, they are empowered and encouraged to adapt the case behavior if necessary. According to [4], the case behavior is described using a case process. Therefore, changing the case behavior means changing a case process. This includes changing the processes of running cases. This kind of runtime flexibility is a key characteristic of ACM. It allows case workers to respond to new challenges which arise after a case has been started.

Each case is represented by a case workspace and is assigned objectives the case is expected to achieve. The workspace contains a process which is constituted by a hierarchy of tasks. Tasks assist in coordinating knowledge work between multiple case participants. [4]

Tasks are not the only object type of a case workspace. Workspaces also contain artifacts like documents or hyperlinks. These artifacts may be added to, removed from, or modified in a case workspace. While automation is not the primary objective of ACM, workflows may be linked to tasks in order to provide automation to those parts of a case that are unlikely to change and, therefore, can be automated efficiently. [4]

Every case object may be created from scratch. For improved efficiency, the method advises to use object libraries for storing and retrieving commonly used case objects. Similarly, case workspaces can be instantiated from predefined templates stored in the template library. This instrument allows to standardize and manage similar cases while retaining a high degree of flexibility for the knowledge worker. [4]

Once several instances (cases) of a case template have been completed, it is advisable to review the respective cases for common changes which should be integrated back into the templates. This adaptation of case processes is a vital instrument for the continuous improvement of case templates. [4]