

## Chapter 7

# Declarative Service Modeling through Adaptive Case Management

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### ABSTRACT

*Adaptive case management addresses the shift away from the prescriptive process-centric view of operations towards a declarative framework for operational descriptions that promotes dynamic task selection in knowledge-intensive operations. A key difference between prescriptive services and declarative services is the way by which control flow is defined. Repeatable and straight-thru processes have been successfully used to model and optimise simple activity-based value chains. Increasingly, traditional process modeling techniques are being applied to knowledge intensive activities with often poor outcomes. By taking an adaptive case management approach to knowledge-intensive services, it is possible to model and execute workflows such as medical protocols that have previously been too difficult to describe with typical BPM frameworks. In this chapter, the authors describe an approach to design-level adaptive case management leveraging off existing repositories' semantically annotated business process models.*

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## 1 INTRODUCTION

Research in business process management (BPM) has recently been heavily focused on the operational activities of organisations. One crucial research challenge in the space is that of activity fulfilment in dynamic environments. Recently, there has been an increasing drive for the examination of case handling and management as an alternative to traditional straight-thru processing (Zhu et al., 2013). Straight-thru processing deals with the construction and operation of repeatable workflow and process designs, whereas, case management investigates roles, life cycle, and activity implementation from a more consumer or interactional point of view (Ly, Rinderle-Ma, Göser, & Dadam, 2012). This chapter addresses the shift away from the prescriptive process centric view of operations toward a declarative framework for operational descriptions. This movement promotes intelligent task diversity in knowledge intensive operations. A key difference between prescriptive processes and declarative process is the definition of control flow. Repeatable and straight-thru processes allow easy modeling and optimisation of basic activity based value chains (Morrison, Ghose, Dam, Hinge, & Hoesch-Klohe, 2012). Poor outcomes typically result from the application of process modeling techniques to knowledge intensive activities (Zhu et al., 2013). An adaptive case management (ACM) approach to process management makes it possible to create knowledge intensive workflows that are not possible to model using traditional BPM systems.

“Case management is built around the concept of processing a case, a collection of information and coordinated activities, by organisational knowledge workers” (Zhu et al., 2013). Typically, a case is a focused view of an interaction with a business unit or organisation by an external entity (customer). A customer, driven through some desire or need, engages with an organisation. These engagements typically result in mutual exchange for services and resources. Through these

interactions, various processes compositions and choreographies appear to create a semi coherent procedure aimed at satisfying the customer’s primary goals or desires. This differs from traditional workflows, which make personalised customer transactions and narrative based progressions impossible. Prescriptive processes also typically mean that a customer engaging at multiple touch points will need to repeat activities, such as explaining goals several times for each process context. Within a case management framework, a customer engagement case contains all details of the customer’s goals and past interactions, sharing case details throughout the execution cycle. As such, all relevant data and information are available from within the processes and also for the composition engine.

During the creation of workflow systems, process designers strive to create process models and designs that benefit many varying use cases (Bleistein, Cox, & Verner, 2006; Edirisuriya & Johannesson, 2009; Wang & Ghose, 2010). The problem for these activities is in defining processes that can be used in varying contexts based on customer demands and intentions (Koliadis, Ghose, & Padmanabhuni, 2008; Wang & Ghose, 2010; Gordijn, Soetendal, & Paalvast, 2005). Being able to dynamically construct a process that effectively works to satisfy consumer goals as well as business goals taking into consideration operational and historic context is necessary in a business setting (Koliadis & Ghose, 2006; Koliadis et al., 2008; Gordijn et al., 2005). To ensure that enterprise context is realised we presuppose that process models contribute to some part of an organizational strategy and also satisfy customer desires.

In this chapter, we describe the use of adaptive case management (Khomyskov & Bider, 2000; Mundbrod, Kolb, & Reichert, 2012; Strijbosch, 2011; Hildebrandt, Mukkamala, & Slaats, 2011a, 2011b) and strategic alignment (Morrison et al., 2012) to model task composition and choreography that will provides declarative support to organizations with existing process management

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