Chapter 12

ALBIS: ALigning Business Processes and Information Systems – Software Environment and Case Studies

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ABSTRACT

The evaluation of the alignment level existing between a business process and the supporting software systems is a critical concern for an organization, as the higher the alignment level is, the better the process performance is. Monitoring the alignment implies the characterization of all the items it involves and definition of measures for evaluating it. This is a complex task, and the availability of automatic tools for supporting evaluation and evolution activities may be precious. This chapter presents the ALBIS Environment (Aligning Business Processes and Information Systems), designed to support software maintenance tasks. In particular, the proposed environment allows the modeling and tracing between business and software entities and the measurement of their alignment degree. An information retrieval approach is embedded in ALBIS based on two processing phases including syntactic and semantic analysis. The usefulness of the environment is discussed through two case studies.

DOI: 10.4018/978-1-4666-3664-4.ch012
INTRODUCTION

Alignment of business process and software system was conceptualized in the literature in many ways (Chan and Reich, 2007). Actually, a precise definition of the alignment concept misses, even if the concept is clear. It is described at two different abstraction levels, i.e. strategic and functional (Henderson and Venkatraman, 1993), and involves different aspects, such as enterprise goals, business entities, strategies and processes, information systems and data. This chapter deals with the alignment degree existing between business processes and software systems at the functional level.

In general terms, a view of business and technological alignment defines at which extent the information technology mission, objectives, and plans, support and are supported by the business mission, objectives, and plans (Reich and Benbasat, 2000). Measuring the alignment level existing between business process and software systems entails an evaluation of the software and its components used for supporting a business process when it is executed.

It can happen that a business process and supporting software systems appear to be aligned in an operative context, but modifications may cause their misalignment. This can be due to either technological and/or management innovations, or unchecked change of the way the activities are executed or the supporting software systems are exploited. Furthermore, a modification does not only regard the considered objects but also impacts on other objects having a dependence relation with the modified ones. Therefore, modifications may cause the decreasing of the performance of the business process and require the execution of further evolution activities. In this context, knowing the business process and monitoring its alignment and links existing with the supporting software systems are very helpful during the execution of the software evolution activities. These tasks require the characterization of all the items composing business process and software systems and definition of measures for evaluating their alignment level. This duty is quite complex to be performed and the availability of automatic tools for supporting evaluation and evolution activities may be precious.

This chapter proposes a software environment named ALBIS – Aligning Business processes and Information Systems (Aversano et al., 2011). It supports an alignment strategy including modeling, tracing and evaluation tasks. In particular, ALBIS can also be applied for understanding the used software systems and the business activities they support.

The next section discusses related works. The subsequent section briefly describes the ALBIS strategy. Then, the ALBIS components and their main functionalities are presented. A discussion of the ALBIS application in two case studies follows. Finally, future works and concluding remarks are outlined in the last sections.

BACKGROUND

In literature, several works deal with the alignment process management, aiming at easily evaluating and identifying the software components impacted by a business and/or software change.

In Zou et al. (2009), the authors argue that understanding the code and locating the portion of the code to be changed is a time-consuming process if the developer does not have the support of automatic tools. Therefore, they present the BPE—Business Process Explorer—tool integrated in Eclipse. It supports the evolution of a business application, automatically recovering business processes from the User Interface and business logic tier of a business application and establishes the links between the recovered processes and their implementation.

In Ramel et al. (2009), the alignment between Business and Software Services is considered and tool “Efficient” is used as automatic support. The
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