

A Collaboration Support Environment for Decision Enhancement in Business Process Improvement

Mercy Amiyo and Josephine Nabukenya

School of Computing and Informatics Technology, Makerere University, Uganda
{mamiyo, josephine}@cit.mak.ac.ug

Abstract. Continuous Business Process Improvement (BPI) in light of increased business process agility demand necessitates continuous process analysis and exploration of several improvement alternatives. These activities are knowledge intensive thus require multi-disciplinary skills. Furthermore, the cross-cutting nature of business processes as a result of having several people working on related activities in order to attain business goals necessitates collaboration among stakeholders in any business process improvement effort. However current suites provide limited to no support for this kind of collaboration especially in the decision process involved. In light of this, we designed a decision enhancement studio environment consisting of 4 suites to support collaboration, business process analysis and dissemination of information in order to enhance group decision making and achieve business process agility. Evaluation results from testing sessions at two organisations show that the BPI alternative exploration collaboration process supported by the analysis tools and group support systems provides a BPI decision enhancement studio which is a suitable environment to generate and select a BPI alternative. The BPI Decision enhancement studio is thus useable and useful for collaboration support in the BPI decision process.

Keywords: Business Process Improvement, Business Process Agility, Collaboration Support, Decision Enhancement, Studio.

1 Introduction

Business process agility (BPA) is the ability to ‘swiftly’ and appropriately adjust a set of related activities performed to achieve a given business goal in response to unpredictable internal and external changes that occur in a business environment, beyond the normal level of ‘flexibility’ [1]. The ever changing business environment has increased the demand for BPA in organisations today thus many BPM suites [15, 2, 24] consisting of tools and/or services that support each step in a business process life-cycle have been developed [14]. These suites facilitate business process agility by providing means to easily and flexibly monitor the performance of a business process, and to modify the business process model [15, 2, 14]. Most of them concentrate on enabling the flexible adjustment of business rules within their business processes. Examples include Corticon business rule management studio [7], the IBM BPM suite, that focuses on business measures and business rules points of agility [15] and the BizAgi suite that supports the whole business process life-cycle [2].

To improve or to further support business process agility, BPM suites have been combined with other technologies such as Service Oriented Architecture (SOA) [6, 8, 16, 14, 18], Event Driven Architecture (EDA) [6, 11] and Collaborative tools [6]. This advancement improved BPA by increasing flexibility [8, 18, 16], support for sense-and-respond patterns [5], extension of limited visibility offered by business activity monitoring dashboards [6] and improvement of communication between SOA services [11, 19]. However, most of these BPM suites do not support collaborative interactions between stakeholders yet, considering that BPM activities such as analyzing and exploring ways of improving a business process require intensive knowledge, involvement of and collaboration among key stakeholders to achieving business process agility [2, 6]. To bridge this gap, research in Collaborative BPM was begun to support collaborative interactions that may take place during the execution of business processes [6]. So far it has been used in three areas; Exception Handling, Case Management and Research process [6].

To this end, we sought to design a Business Process Improvement (BPI) decision enhancement studio to provide an environment to support stakeholder involvement, collaboration and sharing of knowledge to perform this process. A *studio* has been defined by Keen and Sol [17] as an environment or shared space or forum, which contains a set of integrated tools/technologies that enable stakeholders (people) to interactively collaborate to generate and analyze ‘what-if’ scenarios of the possible solutions to a given problem. An overview of challenges facing collaboration in business process improvement is presented in the following section. Following the design science research approach in section 3, the BPI decision enhancement studio was designed. This design has been detailed in section 4. A prototype of the studio was developed and tested using two case studies described in section 5. Also in this section, the test results and an evaluation are given. We conclude the paper giving directions for future work.

2 Collaboration and Business Process Improvement: Challenges

Based on the preceding discussion, we observe that the involvement and collaboration of business process stakeholders is thus paramount for successful and continuous business process improvement [10, 3, 2]. This is so because of the cross-cutting nature of business processes; several people take part at different stages of the business process and thus any changes in the business process would have effect on the various stakeholders. Additionally continuous BPI, is knowledge intensive and calls for multiple skills and expertise. Notwithstanding the various approaches and BPM suites that have been developed to provide BPA as described in the previous section, the aspects of stakeholder involvement and collaboration have received minimal support. This can be attributed to the limited support for collaborative BPM in the recent past [6] though it is observed that collaborative BPM has since then become a fast rising research area [3, 6].

In addition, coordinating the process of BPI to continuously adapt to new conditions needs to be carefully managed to avoid chaos. Involving stakeholders and top management in the decision process involved in business process analysis and BPI alternative exploration would increase their commitment and acceptability of