A New Framework for Reusing Business Processes Via Mashup: BP_Mashup

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ABSTRACT
This article describes how in the last decade, business process repositories have grown significantly and the need for new processes to answer increasing market demands, has become a central interest of modern enterprises. However, developing open source business processes (BP) from scratch is one of the most time-consuming and high-cost tasks. Therefore, reusing mechanisms becomes a priority to deal with this issue. In this article, it is proposed that an open source user-friendly framework that mixes parts of existing process components to build a new process, in order to respond to a particular goal. This is known as business process mashup (BP_Mashup). The BP_mashup framework presented in this article allows users to perform a mixture of process fragments using a simple interface with a set of graphical and temporal events operators based on a formal model.

KEYWORDS
BP_Mashup, Business Process Fragments, Formal Model, Framework, Reusing

INTRODUCTION
Over the past decade, most companies have changed to better satisfy the requirements of the end user, improve internal processes, and adapt their offered services. At the same time, the evolving environment in web technologies has gained in popularity, so it is customary that researchers try to design large-scale solutions that integrate new solutions and exchange and share business processes (BP). Business process can be considered to have an active role in the evolution of social software and Web 2.0.

Most of the time, companies use processes developed from scratch to achieve their goals; however, these are complex. The number of business processes is extensive, but these processes have not always provided the form favored by end users’ needs, and they have not been used autonomously. However, reusing BP has become a major issue and a priority in both scientific and practical use, considered as one of the concepts decreasing software development time and improving quality. Based on these assumptions, reuse old open source BP fragments to build an entire process is the focus of this paper, called “Business Process Mashup” (BP_Mashup).

In recent years, open source business process software has emerged as one of growing software development technology. The explosion in adoption triggered by its openness in terms of codes (authorization of code authorship) and the ability of making changes and redistributes. The availability of source code is an important property that motivates practitioners to lounge more in this discipline
where they have a wide landscape of practicing the technology (Bakar, Sultan, Zulzalil & Din, 2014). As web 2.0 technologies have been spreading quickly across the internet (O’Reilly, 2005); they have substantial amounts of data and services waiting to be used such as major web data sources: Google, Yahoo, Amazon, and eBay. However, end users are involved in content creation of modern web applications, as in social networks like YouTube and Facebook, where users can exchange information easily and remix APIs (Benslimane, Dustdar & Sheth, 2008) and Young (2008). This is the concept commonly known as “Web Mashup.”

Web Mashup is driven mostly by reusing the different existing types of data/information coming from multiple sources or web applications in order to produce useful outputs and present them through new user interfaces.

Current Mashups are primarily based on existing data, information, and services across Internet. Mashups have recently attracted the attention of the company, as there are emerging technologies able to: (1) reuse existing applications and services on the web and (2) deploy automated interactions between distributed and heterogeneous applications.

The purpose of this work will significantly decrease the effort to develop a new process and make business process management of companies more efficient and more transparent to user-centric innovation by enabling easy interaction between them and the execution environment such as Design and development of business processes often represent a significant proportion of costs. For cost saving and in order to avoid building from scratch new business processes, reusing process fragment leads to disclosure of the business activity of the tenants. In fact, there has been a great deal of hype about cloud computing, promising infinite scalability and high availability at low cost, On (Turban et al., 2009). The increased availability of such Web services has opened new opportunities for organizations for rapid and cost-effective development of their business processes even if they lack the capability to perform all of the tasks required for the business processes.

In this paper, the authors propose an approach that links the desired parts of open source business process. The contribution consists of the reuse of the already existing BPs by mixing parts of them as process fragments, or “BP fragments,” in order to create a new BP, or “BP_Mashup,” which deals with user requirements, facilitates communication in the professional world, and has a particular execution scheme to achieve the company’s objectives.

Nowadays, with emerging technologies like cloud computing, the enterprises / organizations increase drastically their interest for business process outsourcing to BP providers (Anstett, 2009). Alsouri, Katzenbeisser and Biedermann (2011) investigated the execution of BPEL processes in different cloud computing delivery models, and the authors propose a formal model.

According to Abiteboul, Greenshan and Milo (2008), many dedicated models and development tools exist. All of them are characterized by the reuse of existing components from a data-oriented aspect. Our goal is to extend traditional data mashups toward processes, which would simplify the reuse of process fragments and reveal new business opportunities within business scenarios. Web 2.0 Mashup composition tools are usually simple enough to be used by end-users. They generally do not require programming skills and rather support visual wiring of GUI widgets, services, process and components together.

We define a BP_Mashup-based framework (“BP_Mashup Framework”) open source tool contribute to create new process, responsible for mixing a set of existing process fragments; Rather than building new processes from scratch, end users can access this tool. Each process fragment consists of some business activities, where each activity performs a particular functional.
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