International Journal of Innovative
Computing, Information and Control
Volume **6**, Number **2**, February **2010**

 ISSN 1349-4198
pp. 567–575

BUSINESS PROCESS VERSION MANAGEMENT BASED ON PROCESS CHANGE PATTERNS

Dongsoo Kim[1], Namhun Lee[2], Sukho Kang[2], Moonsoo Cho[1] and Minsoo Kim[3,*]

[1]Department of Industrial and Information Systems Engineering
Soongsil University
511 Sangdo-Dong, Dongjak-Gu, Seoul, Korea
{ dskim; jmsu }@ssu.ac.kr

[2]Department of Industrial Engineering
Seoul National University
599 Gwanangno, Gwanak-Gu, Seoul, Korea
namhun1@naver.com; shkang@snu.ac.kr

[3]Department of Systems Management and Engineering
Pukyong National University
San 100, Yongdang-dong, Nam-gu, Busan, Korea
*Corresponding author: minsky@pknu.ac.kr

Received November 2008; revised April 2009

Abstract. *In order to manage business processes in a dynamic business environment, it is required to manage process changes effectively by incorporating a proper version management method. However, the traditional delta method for business process version management cannot cope flexibly with structural business process changes. Also, the delta method does not provide a flexible version execution mechanism such as a method for handling multiple coexisting versions of a business process. In this paper, we propose a new process version management method based on process change patterns and the version stamp method. We present business process change patterns which occur frequently, and explain how the proposed version management method is executed based on these change patterns. An example scenario of process version management which is applied to our method is included. We expect that the proposed method integrated with BPM systems would enable organizations to deal with dynamic situations and business process changes more flexibly.*

Keywords: Version management, BPM, Change pattern, Version stamp

1. **Introduction.** BPM (Business Process Management) systems have been recognized as a process-centric enabler for integrating enterprise information systems such as SCM (Supply Chain Management) [13,14] and ERP (Enterprise Resource Planning) [15,16]. Recently, many organizations are adopting BPM systems in order to adapt themselves to rapidly changing business environments by managing their dynamic processes flexibly and efficiently. To help organizations achieve the objective of BPM system adoption, it should provide lifecycle support functions such as process design, execution, monitoring and improvement [7]. However, most BPM systems do not support the whole BPM lifecycle adequately. Especially, tools and techniques for the improvement stage are insufficient, and therefore the researches on this issue are urgently needed.

For this reason, the flexibility of most current BPM systems, one of the most important characteristics, is quite limited, so that those systems cannot cope with continuous changes in business processes caused by changes in business environment such as advances