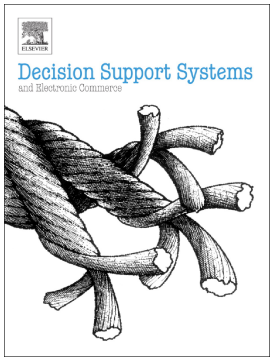

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Data-driven Process Prioritization in Process Networks

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Abstract

Business process management (BPM) is an essential paradigm of organizational design and a source of corporate performance. The most value-creating activity of BPM is process improvement. With effective process prioritization being a critical success factor for process improvement, we propose the Data-Driven Process Prioritization (D2P2) approach. By addressing the weaknesses of extant process prioritization approaches, the D2P2 accounts for structural and stochastic process dependencies and leverages log data. The D2P2 returns a priority list that indicates in which future periods the processes from a process network should undergo the next in-depth analysis to check whether they actually require improvement. The D2P2 contributes to the prescriptive knowledge on process prioritization and process decision-making. As for evaluation, we discussed the D2P2's design specification against theory-backed design objectives and competing artefacts. We also instantiated the D2P2 as a software prototype and applied the prototype to a real-world scenario based on the 2012 BPI Challenge log.

Keywords: Business Process Management, Process Prioritization, Process Improvement, Business Process Architecture, Process Logs

1 Introduction

Process orientation is an accepted paradigm of organizational design and a source of corporate performance [1,2]. Due to substantial progress in process identification, analysis, implementation, and improvement [3,4], business process management (BPM) receives constant attention from industry [1,5]. In particular, process improvement has received significant attention in recent years [6]. However, more than 60% of process improvement projects are reported to fail [7], as organizations focus on