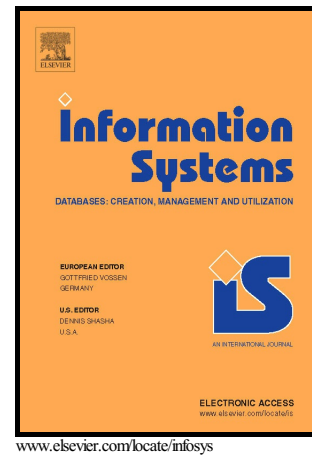


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Change Visualisation: Analysing the Resource and Timing Differences between Two Event Logs

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Abstract

With organisations facing significant challenges to remain competitive, Business Process Improvement (BPI) initiatives are often conducted to improve the efficiency and effectiveness of their business processes, focussing on time, cost, and quality improvements. Event logs which contain a detailed record of business operations over a certain time period, recorded by an organisation's information systems, are the first step towards initiating evidence-based BPI activities. Given an (original) event log as a starting point, an approach to explore better ways to execute a business process was developed, resulting in an improved (perturbed) event log. Identifying the differences between the original event log and the perturbed event log can provide valuable insights, helping organisations to improve their processes. However, there is a lack of automated techniques and appropriate visualisations to detect the differences between two event logs. Therefore, this research aims to develop visualisation techniques to provide targeted analysis of resource reallocation and activity rescheduling. The differences between two event logs are first identified. The changes between the two event logs are conceptualised and realised with a number of visualisations. With the proposed visualisations, analysts are able to identify resource- and time-related changes that resulted in a cost reduction, and subsequently investigate and translate them into actionable items for BPI in practice. Ultimately, analysts can make use of this comparative information to initiate evidence-based BPI activities.

Keywords: Event Log Comparison, Comparative Process Visualisation, Visual Analytics

1. Introduction

Business Process Improvement (BPI) is concerned with identifying opportunities for business process redesign bearing in mind the potential impact that these redesign actions may have on different dimensions such as time, cost, quality and flexibility [1]. It is essential for organisations to constantly engage

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