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Discussion Paper

## Valuation of Manual and Automated Process Redesign from a Business Perspective

by

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## **Valuation of manual and automated process redesign from a business perspective**

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## **Structured Abstract:**

**Purpose** The continuous redesign of processes is crucial for companies in times of tough competition and fast-changing surrounding conditions. Since the manual redesign of processes is a time- and resource-consuming task, automated redesign will increasingly become a useful alternative. Hence, future redesign projects need to be valued based on both a manual and an automated redesign approach.

**Design/methodology/approach** In this paper, we compare the manual and automated process redesign on the basis of the Business Process Management (BPM) lifecycle. The results form the basis for a mathematical model that outlines the general economic characteristics of process redesign as well as for the manual and automated approaches. Subsequently, we exemplarily apply our model to a set of empirical data with respective assumptions on particular aspects of the automated approach.

**Findings** In the problem setting described in the paper, our valuation model shows that automated process redesign induces an equal or higher number of optimized processes in a company. Therefore, we present a decision support that outlines how much to invest in automated process redesign.

**Research limitations/implications** Our model considers the cost side of automated process redesign; therefore, further research should be conducted to analyze the possibility of higher returns induced by automated redesign (e.g., through a quicker adaption to real-world changes). Moreover, for automated redesign, there is no requirement for broad empirical data that should be collected and analyzed as soon as this approach leaves the basic research and prototyping stages.

**Practical implications** This paper presents an approach that can be used by companies to estimate the upper limit for investments in manual and automated process redesign. Working under certain general assumptions and independently from actual cost and return values, we demonstrate that automated process redesign induces an equal or higher ratio of optimized processes. Thus, companies introducing automated redesign can not only apply the model to evaluate their investments but can also expect a higher ratio of optimized processes for this approach.

**Originality/value** As existing literature primarily focuses on the technical aspects of automated process redesign, our findings contribute to the current body of literature. This paper discusses a first decision-support for the economic aspects of automated process redesign, particularly with regard to the investments that are required for it. This information is relevant as soon as the approach leaves the stage of a prototype.

**Keywords:** Semantic Business Process Management, Automated Process Redesign, Business Process Modeling, Optimization Model

**Article Classification:** Research paper

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