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# The Role of Process Representations in Business Process Redesign Projects

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**Abstract:** Markets and the desires of customers change. Thus, also organizations and their business processes need to change at certain points in time. To achieve this, organizations engage in different activities related to Business Process Redesign (BPR). BPR involves, among others, analysing business processes and identifying suitable possibilities to improve them. One of the key steps preceding any business process redesign project is to appropriately capture and represent the respective processes of an organization. Over the past years, particularly process models have been advocated as the most suitable artefact for doing so. However, to the present day, there is no empirical evidence that process models are indeed a superior representation format in the context of BPR. While theory confirms that creative problem-solving tasks are highly dependent on the type and format of information provided to the problem-solvers, the general superiority of process models in this context has not been demonstrated. Therefore, in this thesis I will study the role of process representations in the context of BPR. To this end, I will adopt a qualitative research approach and conduct multiple case studies in organizations that have conducted BPR projects in the past. My overall goal is to shed light on the role and importance of process representation formats in BPR projects.

**Keywords:** BPR, Process Representations, redesign project.

## Introduction

There are many ways how to capture and represent knowledge about organizational procedures. Examples include flow charts [An05], textual documents [We17], state transition diagrams [MJ17], process models [Ko09], and checklists. Research has shown that organizations employ several of these representation formats. What they all have in common is that they often serve as a starting point for analysis and re-design initiatives [He09].

Many authors have investigated the advantages and disadvantages of these formats for different purposes [Ni98]. Some argue that graphical process representations and particularly process models are best suited for analysing and redesigning processes [Mo09]. This is also emphasized in [AJ05], where the authors argue business process models are useful for visualizing and analysing the flows and complex relationships among operations.

While process models are widely believed to be the superior choice for representing processes, there is no evidence that process models are really the best starting point in the context of redesign projects. Against this background, my main research question is:

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*What is the role of process representation in BPR and how does the choice for a particular process representation affect process redesign efforts?*

By answering this question, I aim to shed light on the importance of process models in the context of redesign and whether other representations formats are a suitable alternative. What is more, I will contribute to academic literature as well as industrial practice.

## **Context and Importance**

In this section, I clarify the context and importance of my research. I first explain the goals of business process redesign (BPR). Then, I will review related work and highlight the research gap.

## **Business Process Redesign**

Business Process Redesign is an important step within the Business Process lifecycle and the technical challenge of creating a new process design after its analysis [Ni98]. BPR was initially introduced as Business Process Reengineering as a radical approach for organizational change [HC93]. BPR has received different names throughout the years including “*business process improvement*” [Be09], “*business process re-engineering*” [DS90], “*core process redesign*” [Ja14], “*business restructuring*” [Pe17], “*continuous improvement process*” [Ze11]. Business Process Redesign represents an incremental and intended transformation of a business process [LR07]. The goal of BPR is to decrease the time required to handle a particular problem, lowering the execution-cost of the process, adding value to the quality of the service delivered, and increasing the flexibility of the business process to deal with changes that might occur over time.

## **Related Work on Business Process Redesign**

Research on BPR has resulted in many contributions that discuss options to improve the quality, efficiency, and economic viability of business processes [Da94]. There is a lot of work on how BPR shall be executed. These so-called *methods* or *frameworks* typically define particular steps how to transform a given business process into an improved version [Ze11]. Many of the existing methods and frameworks differ with respect to their emphasis [Re17]. They can be distinguished based on their *impact* and *nature*. In this context *impact* refers to the efforts and the pace, and *nature* to how BPR is done in a more abstract way [LR07]. When categorizing *impact*, there are two types: Gradual and Radical. *Gradual* methods support the identification of problems or bottlenecks in a process and then help to resolve these in a cumulative way [Du13]. As such, these methods do not challenge the foundations of the existing process, but seeks to improve the overall process gradually, e.g. benchmarking, Six Sigma, Lean, etc. *Radical* approaches aim to transform drastically the way how it is done, change on a grand scale.

This type of methods contradict the fundamental assumptions and principles behind an existing process and try to radically overcome them [Du13], e.g. Business Process Reengineering, NESTT, Product-Based Design, etc.

Focusing on the *nature* of BPR methods, we can distinguish between analytical and creative methods. *Analytical* methods are generally based on mathematical or quantitative techniques. They are supported by tools and techniques, in particular to analyze process problems or to generate process improvement alternatives [Ko09]. *Creative* methods bring forth human creativity and awareness. Basically, it is created from group dynamics and its insights. People creativeness and subjectivisms take place to come up with new ideas on how to organize a business process, workshops and focal groups represent a great way for its implementation [RL05]. It is important to note that the choices along the methods can vary. A method, for example, could be *gradual* and *creative*, e.g. 7FE [Du13].

There are also a few tools available to structure the redesign phase. That is why many of the tools used in redesign are also process modeling tools. They support the use of a notation to capture a business process in a diagram or somehow represent it. There is a variety of tools to access business process models evaluation, generally focusing in simulation techniques [AJ05].

Despite all the contributions made through years in BPR there are still pending issues that still need better understanding, even with a widely targeted topic such as BPR. In this research our foremost concern will be process representations in BPR.

## **Proposed Research**

### **Goal and Objectives**

It is known that the preference for a representation format might not always correspond to performance in using it [Co94]. Research points out that the problem-solving phase (process analysis and process improvements implementation), in a BPR project, became easier when an appropriate representation was included in the redesigned process [Mo09]. These representations capture, in some graphical and/or textual notation, the activities, logs, states, business rules and possibly other information that is relevant to a business process [Re09], creating the opportunity for analysts to choose among them which format better represents their business processes [Wo10]. The importance of choosing the right representation approach is an important piece of the redesign process [KM01]. This research will look into this importance while addressing its real relevance and role throughout a BPR project. The main objective of this thesis is to determinate whether Process Representations play a role in BPR or not and how.

## Methodology

I already conducted a literature review to better understand the topics of BPR and process representations. To this end, I used Google Scholar and ResearchGate, which can be considered as the most comprehensive search engines for academic literature at this point. The search terms were “*business process redesign*”, “*business process redesign projects*”, “*process representation formats*” and “*types of process representations*”.

As a next step, I intend to conduct an Expert Panel with practitioners from different companies with experience in BPR projects. The goal is to obtain an overview of the role that process representations play in BPR projects in practice. Based on these insights, I will design and conduct an experiment to empirically test relevant hypotheses related to the role of process representations in BPR projects.

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