Representation Type Preferences in Operational Business Process Redesign: A Quasi-Experimental Field Investigation

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ABSTRACT

This paper reports on a quasi-experimental field study in which business process redesign groups in four different US organizations used two different business process representation types. One of the representation types emphasized an activity flow (or workflow) view of business processes, which appears to currently be the most prevalent in actual operational-level business process redesign projects; the other emphasized a communication flow view. The study suggests that, contrary to assumptions likely underlying most of the current business process redesign practice, communication flow-oriented representations of business processes are perceived by those involved in their redesign as significantly more useful in the following aspects than activity flow-oriented representations: identification of opportunities for process improvement, application of process redesign guidelines, visualization of process changes, and development of generic information technology solutions to implement new business processes. Important implications for managers and researchers stemming from these results are discussed.

Keywords: Business Process Redesign, Contrast Analysis, Data Triangulation, Field Research, Nonparametric Techniques, Organizational Communication, Quasi-Experimental Research

INTRODUCTION

Business process redesign (or, simply, process redesign) approaches have become very popular in organizational circles, particularly since the emergence of the business process reengineering movement in the early 1990s (Hammer, 1996; Hunt, 1996; Reijers et al., 2003). In spite of being touted as a new and revolutionary idea, it can be argued that process redesign has a long history, dating back to Taylor’s (1911) scientific management movement.

Perhaps the similarity between today’s process redesign practices and those propounded by the scientific management method has extended to one aspect that, this paper argues, has negative implications for the modern practice of process redesign. That aspect is the focus of much of today’s process redesign approaches on what seem to be a “times-and-motions” view of business processes, which is reflected in an emphasis on modeling and understanding processes primarily as chronological sequences...
of interrelated activities (Harrington et al., 1998; Kock, 2003; Kock et al., 2009). It is argued in this paper that such focus, although appropriate for materials-handling processes, is problematic when the targets of process redesign efforts are information-intensive processes.

The main goals of this paper are to formalize a theoretical model that addresses the role of process representations in redesign projects. This is accomplished through the comparison of two approaches to process redesign. One is a communication flow-oriented approach, which is arguably well aligned with the information-intensive nature of most modern processes. The other is an activity flow-oriented approach, which reflects much of the current practice in connection with business process redesign.

RESEARCH BACKGROUND

The broad area of business process redesign and management has been a fertile area of research, with or without a strong focus on information technology (IT), particularly in the last 15 years (Baskerville & Smithson, 1995; Newkirk et al., 2008). Many important research issues have been addressed, and many relevant research questions have been successfully answered. Harmful misconceptions regarding process redesign have been exposed (Davenport & Stoddard, 1994), and the role of IT as an enabler of new redesigned processes has been identified and explained (Cunningham & Finnegan, 2004; Venkatraman, 1994). Key preconditions of process redesign success have been identified (Bashein & Markus, 1994; Clemons et al., 1995; Teng et al., 1998), approaches to assess success have been proposed (Berente et al., 2009; Börjesson & Mathiassen, 2004; Davenport, 1993), and related change management techniques have been studied and validated (Kettinger & Grover, 1995; Stoddard & Jarvenpaa, 1995). New methods and automated tools for process redesign have been proposed (Nissen, 1998), and successful approaches for implementation of new process designs have been identified (Grover et al., 1995).

In spite of the progress above, some areas of research in connection with process redesign have received relatively little attention. One such area is that of process representation approaches and their impact on the outcomes of process redesign projects (Katzenstein & Lerch, 2000). This area arguably needs its share of research attention, since the way processes are looked at is likely to strongly influence the way in which they are redesigned (Berente et al., 2009).

The above area of inquiry is related to that of requirements engineering, which is arguably one of the most important phases of a software project (Bhat et al., 2006). Broadly speaking, requirements engineering involves defining the characteristics needed by a piece of software from the users’ perspective. Requirements engineering is closely related to business process redesign because the introduction of a piece of software in an organization invariably leads to changes in the business processes of the organization (Ramos et al., 2005). Also, while not all business process change decisions are implemented through software systems (Sarker & Lee, 2002), many are. One key point derived from the requirements engineering literature, which is well aligned with the findings of this study, is that different approaches to requirements engineering lead to different business process redesign and IT implementation outcomes (Bleistein et al., 2006; Damian & Chisan, 2006).

Often what characterizes a requirements engineering approach and differentiates it from other approaches is where its main modeling emphasis lies, where modeling often refers to business process modeling. Some approaches place emphasis on the use of non-automated techniques to elicit requirements such as use scenarios (Laurenzi et al., 2006). Other approaches place emphasis on automated techniques, such as semantic analysis of natural language descriptions of requirements (Sawyer et al., 2005). Yet other requirements engineering approaches place emphasis on the use of multiple modeling techniques (Ebert, 2006).
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