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 formal-
ize 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 identi-
fied 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; Daven-
port, 1993), and related change management
techniques have been studied and validated
(Kettinger & Grover, 1995; Stoddard & Jar-
venpaa, 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 rede-
sign 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 en-
gineering 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 require-
ments 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 tech-
niques, such as semantic analysis of natural
language descriptions of requirements (Sawyer
et al., 2005). Yet other requirements engineer-
ing approaches place emphasis on the use of
multiple modeling techniques (Ebert, 2006).
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