ELSEVIER

Information & Management 36 (1999) 301–311

INFORMATION & MANAGEMENT

www.elsevier.com/locate/econbase

Competence and impact of tools for BPR

Il Im*, Omar A. El Sawy, Alexander Hars

Department of Information and Operations Management, Marshall School of Business, University of Southern California, University Park, Los Angeles, CA 90089-1421, USA

Accepted 21 March 1999

Abstract

Software tools for Business Process Reengineering (BPR) promise to reduce cost and improve quality of projects. This paper discusses the contribution of BPR tools in BPR projects and identifies critical factors for their success. A model was built based on previous research on tool success. The analysis of empirical data shows that BPR tools are related to effectiveness rather than efficiency of the projects. Process visualization and process analysis features are key to BPR tool competence. Also success factors for BPR tools are different from those for CASE tools. © 1999 Elsevier Science B.V. All rights reserved.

Keywords: Business process reengineering (BPR); BPR tool competence; BPR success; Computer aided software engineering (CASE); CASE tools

1. Introduction

Since the emergence of Business process reengineering (BPR), a large number of software tools have emerged to help BPR efforts. However, studies show that the lack of user-friendly, yet flexible, software to support BPR is seen as a major problem [3,13]. It is surprising that despite the discrepancy between user needs and available tools, there have been only a few studies about BPR tools. In order to provide a basis for evaluation and proper selection of BPR tools, research is needed to examine their features and their contribution to BPR success.

Since BPR tools have many similarities with Computer-aided software engineering (CASE) tools, the failures of CASE tool have led to concern about similar failures of BPR tools. This research, therefore, focuses on the following questions.

1. Which features are important in BPR tools?
2. How important are BPR tools in BPR success?
3. Does the failure of CASE tools also portend similar failure for BPR tools?

To answer these questions, important features of BPR tools and CASE tools experiences were identified through a literature survey. A model was built to explain the relationship between BPR tools' success and determinants of success such as features, costs, and organizational conditions.

2. BPR perspectives

Hammer and Champy [9] defined BPR as "the fundamental rethinking and radical redesign of busi-

*Corresponding author. Tel: +213-740-7283; fax: +213-740-7313

E-mail address: iim@rcf.usc.edu (I. Im)

0378-7206/99/$ – see front matter
PII: S0378-7206(99)00023-3

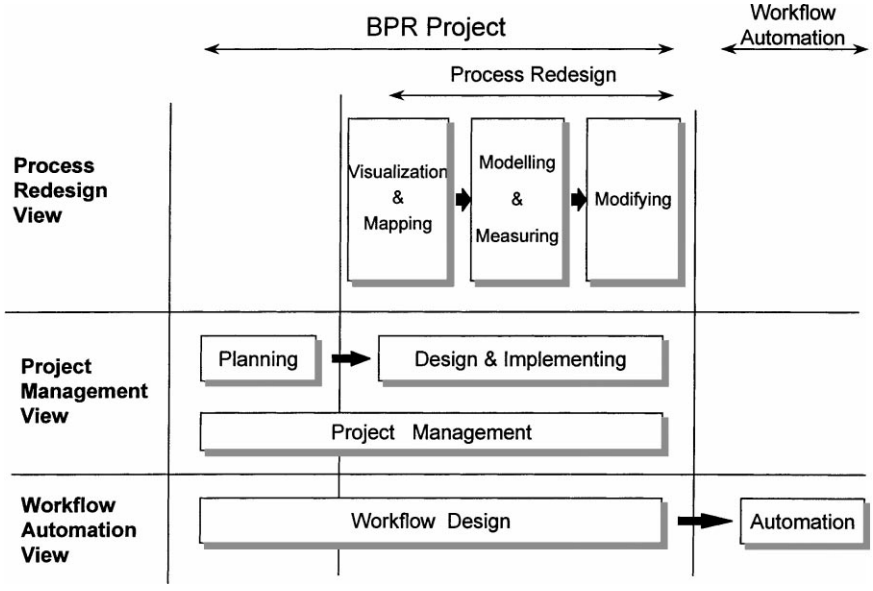

Fig. 1. BPR viewpoints.

ness processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed''. Thereafter, various BPR approaches and methodologies have been proposed [1].

In addition to BPR, some efforts to automate workflow have emerged. Workflow automation aims to improve work processes through developing applications for managing, measuring, and revising processes that span the efforts of multiple workers, applications, and organizations. Workflow automation is closely linked to BPR because sometimes it is used as a step towards workflow automation.

Different perspectives of prior studies about BPR were mapped according to their range as illustrated in Fig. 1. In its narrowest view, BPR is considered as a *redesign of process* that can be carried out through predetermined steps, such as those proposed by Furey [5] and Kim and Kim [14]. Some designers focus on the *project management* side of BPR, which requires organizational and social considerations for successful planning and implementation. McPartlin [16] deals with BPR in this context. He includes process redesign as a part of the BPR project. If its purpose is workflow automation, effort consists of two parts–workflow design and workflow automation. The *Workflow view* in the figure reflects this perspective.

The *project management view* was selected for analyzing BPR tools features in this research, because it clearly identifies three separate areas that can be supported by BPR tools: (1) planning; (2) design and implementing and (3) project management. The *process redesign view* was also used to break down the *design and implementation* phase of BPR project into three sub-categories: (1) visualization and mapping; (2) modeling and measuring and (3) modifying.

3. BPR tools success model

Here we attempted to determine those success factors for a BPR project that are linked to tools. These success factors were used to build a testable model that covers key variables. Grover et al. [8] have identified important problems that people generally encounter when they try to implement BPR. They found that those more directly related to the conduct of a project, such as process delineation and project management, were perceived to be highly related to project success. Since BPR tools can support process delineation and project management, a close relationship between the use of BPR tools and BPR success was expected.