

# Chapter 3.11

## The Role of Simulation in Business Process Reengineering

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### ABSTRACT

This chapter discusses the importance of business process simulation, while illustrating the relationship between business process reengineering (BPR) and change management, it focuses the discussion on the role of simulation in supporting BPR and the effect of simulation on business environment related skills, business management related skills, leadership related skills, employees empowering level, process improvement, ethical issues, and stakeholders' management skills. The chapter discusses the value of simulation in implementing reengineering strategies and argues the future challenges of business process simulation and describes the limitations of simulation technology in reengineering business processes. Finally, it concludes with a discussion of the characteristics of successful simulation and simulation applications.

### INTRODUCTION

#### Business Process: Definitions and Concepts

The logic of business is to create an advantage and/or utilize an opportunity, given this context; it implies the necessity to identify driving forces in order to fully exploit this idea. In general, one or more of the following issue(s) has the tendency to drive any probable business improvement:

- **Customer:** His/her requirements, culture, expectations, consumerism and even his/her feedback on the final product/service may enforce an organization to change its policies in order to gain their satisfaction, since low satisfaction will negatively impact product promotion.

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- **Cost:** Basic notion within business logic for both seller and buyer, and the complex side of this logic appears when this perception is related to quality sensitivity.
- **Competition:** Results from micro and macro business environment, that is, market status, legal issues, consumerism situations, and so forth.

The question here is how organizations can remain competitive and, protecting itself from increasing competition threats at the same time dealing with its revenue from costly operations, attract more customers? Surely the answer to this question is not easy; the question here links the company assets (resources) as inputs, how to treat these assets (processing) and the outcome of the business operations, where the acceptance of the product by customers echo its success. Therefore it can be noted that processing operations are stressed, since it determines the success or failure of any product. Accordingly organizations revise their processes so as to maintain their competitiveness.

Prior to carrying out the hows of redesign and improve organization processes, it is necessary to demonstrate some process definitions and the sagacity behind each one of them. There are many definitions of process; this is due to viewpoint, background and trends of the researcher as well as the market common strategies; that is, push/pull strategies, where the adopted strategies demand considering certain outlooks and neglecting others. Each definition considers one or more of the following perspectives: input (resources), activities, output (product/services), and customer and organization objectives. For example, Pall (1987) expressed process as arranging different organization resources (for example: people, materials, energy, equipment, and procedures) reasonably to accomplish work activities leading to specific work product. Correspondingly, Davenport & Short (1990) described it as a collection of sensibly interrelated tasks executed to attain a certain

business product. Moreover, Harrington (1991) stated that business process is making use of the organization inputs by collection of judiciously interrelated tasks that facilitate achieving the organization's goals. Omrani (1992) argue that process is the result of cycle of activities that are collectively taken to attain business goals. Likewise, Talwar (1993) defined the process as a series of identified activities implemented to achieve a specified type of outcome. Hammer and Champy (1993) considered the customer perspective when they defined the process as a collection of activities that, all in all, generate a consequence of importance to a customer. The next definition stressed the process boundaries; this characterization was presented by Davenport (1993) who defines process as "an organizing work activities across the place, with a start, an end and obviously identified inputs and outputs." Earl (1994) characterized process as a lateral or horizontal form that sums up the interdependence of tasks, roles, people, departments and, functions required to supply a customer with a product or service. Ferrie (1995) defined processes as being a definable set of activities that form a known foundation. Finally, Saxena (1996) explains business process as a set of interrelated work activities characterized by specific inputs and value-added tasks that produce specific outputs.

### **Change Management Approaches: Comparative Study**

There are many approaches to change management, in the following discussion the researchers will focus on total quality management (TQM), business process reengineering (BPR), and knowledge management.

#### **Total Quality Management**

Total quality management (TQM) can be seen as a non-ending process to achieve necessary quality improvement, which needs effort and

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