Chapter III

Simulation Modelling: The Link Between Change Management Approaches

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ABSTRACT
Although change management approaches have been widely discussed in the business and management literature for several decades, not many publications address the role of simulation modelling in supporting these approaches. This chapter investigates several management innovation and change programs, including TQM, JIT, BPR, Process Innovation and Knowledge Management, and discusses how simulation modelling could increase their effectiveness. These change management approaches are compared and contrasted, and the applicability of simulation modelling to support the principles of these methods is investigated. It is argued that simulation could be viewed as a missing link between these approaches.

INTRODUCTION
Organizations continuously need to adapt to new conditions and respond to competitive pressures. As a response to this need for constant change and improvement, various change management approaches have been developed. The subject of managing innovation and change has been widely discussed in the business and management literature for several decades. Every few years, a new management philosophy, method or technique (or panacea or fad) is developed...
which is believed to enhance business performance (Land, 1996) that emanate from North America and are developed by practicing management consultants.

This chapter investigates five management innovation and change programs: Total Quality Management (TQM), Just in Time (JIT), Business Process Re-engineering (BPR), Process Innovation (PI) and Knowledge Management (KM) in the context of their methodological similarities and suitability for simulation modelling. These change management approaches are discussed in chronological order beginning with TQM and ending with the currently popular Knowledge Management. They are compared and contrasted, and the applicability of simulation modelling to support the principles of these methods is investigated.

The study has revealed that, although these approaches are developed from different disciplinary or functional areas within management, they share a common set of key characteristics. For example, they advocate a company-wide approach to managing change, they seek to change the philosophy or culture of the organization, they are developed largely by management consultancies rather than the academic community, and they are intended to improve business performance. To be successful, they must be top-down led and managed. Simulation models may be used to measure their impact on business processes and performance.

The history of these change management programs shows that, eventually their popularity and applicability declines and they are replaced by ‘new’ panaceas which, although labeled differently, are in many ways similar to their predecessors. The main objective of all these panaceas is to improve business processes, reduce costs and provide better products and services to customers. This chapter explores the role of simulation modelling in achieving these objectives.

The chapter is structured as follows. First an overview of five management innovation and change programs is given and the concept of simulation modelling is introduced. Subsequently, the suitability of this method to support change management programs is discussed. The five management panaceas are then compared and contrasted from a methodological and simulation modelling perspective, and the conclusions present the main findings of this research and identify future trends in this area.

**BACKGROUND RESEARCH**

The analysis of the relevant literature reveals that there have been very few comparative studies that consider the use and effectiveness of management innovation and change programs (Currie, 2000). However, one such study by Waterson et al. (1997) analyzed the results of 12 manufacturing practices: Business Process Re-engineering (BPR), Supply-chain Partnering, Outsourcing,
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