

Chapter 1

Development of a Simulation Model for Optimization of Business Process: Focus on Gap Processes

ABSTRACT

Earning profits in business promotes optimization of business processes. For the analysis of business processes, realistic simulation models are an important prerequisite. The research question is as follows: What is business process based on gap processes? The aim of the research is to carry out mathematical analysis of gap processes underpinning elaboration of a simulation model for optimization of a bursty business process. The meanings of such key concepts as “bursty business process,” “binary customer behavior,” “gap,” and “gap processes” are studied. In this chapter, a new simulation model is presented that allows a realistic analysis of business process based on gap processes. The model is based on the assumption that the gaps between two buyers are statistically independent on each other, which has been proofed as a good practical approximation. The novel contribution of the manuscript is revealed in the newly created simulation model based on gap processes. Directions of further research are indicated.

INTRODUCTION

Business environment has shaped and been shaped by various social and political forces within the couple of past decades. Table 1 provides a historical perspective on business development during the past decades (Ahrens, Zaščerinska, Melnikova, & Andreeva, 2017). It should be noted that *business environment*, *business* and *business practice* are used synonymously in the present contribution.

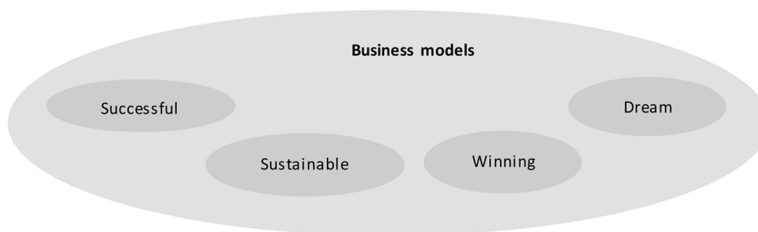
Changing business environment promotes the advancement of business including business processes. As business is traditionally oriented to earning profits via the process of buying and/or selling of goods and/or services, a number of profitable business models such as successful business model, sustainable business model, winning business model, dream business model and etc. as shown in Figure 1 are demonstrated by the business community.

For the purposes of the present manuscript, the terms “the process of buying and/or selling of goods and/or services” and “the business process” are used synonymously. It should be noted that the business process is the fundamental element of a business environment and/or business practice as indicated in Figure 2.

Table 1. Business practice in different historical periods of the past decades

| Phase | Historical Period | Business Approach |
|-------|-------------------|--|
| 1. | 1980s | De-Industrialization (a process of social and economic change caused by the removal or reduction of industrial capacity or activity in a country or region, especially heavy industry or manufacturing industry) |
| 2. | 1980s | Deregulation (the process of removing or reducing state regulations) |
| 3. | 1990s | Global Business (international trade or a company doing business across the world) |
| 4. | 2000s | Hybrid business (enterprise which makes use of traditional methods of distribution and Internet) |

Figure 1. Variety of profitable business models



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