



Chapter II

Organizational Business Dynamics

It was Sterman's (2000) book entitled *Business Dynamics: Systems Thinking and Modeling for a Complex World* that introduced the term "business dynamics." Business dynamics is concerned with learning in and about complex systems. Effective decision-making by growing dynamic complexity requires executives to become systems thinkers—to expand the boundaries of their mental models and develop ways to understand how the structure of complex systems creates behavior.

In the context of system dynamics, a system might be a manufacturing company, a consulting firm, a government organization, an industry, or some other part of the real world that has cause-and-effect relationships to be understood for decision-making. While in the context of system dynamics an information system has a different meaning, a system here is a set of organizational relationships to be explored as different system structures create different system behaviors.

While the structure of a system can be illustrated by a causal loop diagram, the behavior of a system can be illustrated by a reference mode, as was illustrated in the preface. This will be further explained and explored in this chapter.

Dynamic Business Performance

Business dynamics can be understood as the evolution of one single business as well as the evolution of businesses in an industry or in a region. In the latter meaning, OECD (2004) studied business dynamics in terms of the creation of new businesses and the decline or market exit of less productive firms.

The creation and growth of new firms and the decline or market exit of old firms are often regarded as key to business dynamism and economic growth in OECD economies. New firms are thought to be especially innovative and to play an important role as job creators. Based on these ideas, policy makers often believe that institutions, which foster firm entry, may ultimately enhance the overall economic performance of their country (OECD, 2004).

According to OECD (2004), it is frequently reported in the firm demographics literature that most new firms do not survive for long. Chances of survival are especially low for firms that start small, as they usually do. Two-year survival rates for firms born in 1998 do confirm that there is a high risk of newly created firms being forced to exit the market rapidly. Survival rates correspond to the number of firms of the same cohort that have survived a given number of years as a percentage of all firms that entered the same year with them. In Europe, between 12 and 38 percent of all new firms had failed already after the first two years, as the survival rates varied roughly between 62 and 88 percent.

Firm survival can also be assessed on the basis of hazard rates, which correspond to the conditional probability of leaving the market after a certain life span. These are calculated as the share of exiting firms in the number of survivors of the same cohort as of the previous year. While survival rates decline with firm age by construction, *a priori* there is nothing that precludes hazard rates from being comparable at different durations. One- and two-year hazard rates reveal that while entry rates tend to be higher in services than in manufacturing, the risk that these new firms have to exit the market early in life is higher in services, as well (OECD, 2004).

Similar to the study by OECD (2004) is the study by Callejón and Segarra (1999) on business dynamics and efficiency in industries and regions in Spain. They studied business dynamics in terms of firm births and deaths. According to their approach, new firms are seen more as users of innovations than producers of innovations. The results showed that both entry and exit rates contribute positively to the growth of total factor productivity in industries and in regions.

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