

Chapter 8

Innovation Management in Modern Organizations: An Evolutionary Approach

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ABSTRACT

The present context of the knowledge-based economy and society has brought relevant changes with respect to how innovation has been conceptualized and explained. This chapter discusses the characteristics of learning and uncertainty as intrinsic components of innovation over the course of time. A number of views that explain the innovation process are discussed in terms of evolutionary momentum, from the science-push strategy to the market-pull model, culminating in the holistic, integrating view of innovation. The case study illustrates the path of technological development of a Portuguese footwear company, based on the licensing of technology, the capacity for continuing learning and absorption, and a culture of innovation as key elements for success.

INTRODUCTION

Globalization has led to the need for changes in the institutional culture of all economic and social agents, most particularly, businesses, universities and governments. The gradual opening of national markets to international competition has required companies to make investments in R&D and innovation in the broadest sense, lest they become obsolete and simply disappear. Success in business therefore increasingly depends on the ability to compete in this new scenario.

However, innovation is today a key factor of competitiveness. It is known that competitiveness and productivity depend on multiple factors, related not only to companies but to all social organizations (Macgregor & Carleton, 2012). These priority factors should not be confined to the material; they should increasingly include the immaterial (Caraça, 1993). In a time of transition to a knowledge-based economy, the need to implement an integrated policy to support innovation is clear; such a policy is understood as the creation or use/adoption of new knowledge as key competitive

DOI: 10.4018/978-1-4666-8637-3.ch008

factors (Laranja, 2009). Innovation seen in this way focuses not only on the material dimensions of processes, products and services, science and technology, organization and management, but equally on the intangible dimension of knowledge and information, implying primarily a change in terms of attitudes, behaviours and even social relations. Economic innovation is thus inextricably linked to social and organizational innovation, and covers not only companies but a wide variety of institutions. However, firms are at the very heart of this process (Etzkowitz, 2008) and integrated innovation policies should be focused on supporting their own capacity for initiative.

The purpose of this chapter is to describe and discuss the management of innovation in modern organizations. It outlines how this has changed from a linear perspective, based on a conception of science as central to innovative activity (science-push) and moving on to emphasise the market and consumer needs (market-pull), to arrive at a holistic perspective of innovation management. This view is based on the interaction between different economic and social operators, the academic community, businesses and governments in an overall momentum of sharing and exchanging knowledge and information.

The chapter has seven sections. After the Introduction, Section 1 sets out some concepts related to the topic in the light of the knowledge-based economy and society. Section 2 discusses the importance of learning throughout the innovation process and Section 3 focuses on the uncertainty of the outcomes of the innovative drive. Section 4 explains and discusses the evolution of views on innovation and the implications for management. Finally, Section 5 illustrates the concepts and models via a case study of a Portuguese footwear company. The final conclusions sum up the ideas presented and underscore the thesis that innovation has progressively taken on a key role as a driver of economic and social development in today's world.

1. CONCEPTUALIZING INNOVATION

Innovation advances through the innovative effort that is developed within society and the economy, with the intervention of all kinds of agents. They may be public or private and include firms, the state, universities and not-for-profit institutions (Etzkowitz, 2008; Lundvall, 1992). It is therefore useful to define some core concepts in order to facilitate the understanding of innovation models. First, we distinguish the notions of technology and innovation, which are so often used synonymously. By technology we mean:

(...) the body of scientific or empirical knowledge directly applicable to the production, improvement or use of property or services. (Caraça, 1993, p. 68)

It envisages a restricted view of the concept, insofar as it excludes the idea of the technology only embracing equipment, machinery, and other physical devices. But Caraça emphasizes the practical and applied nature of technology, seeing it as information and scientific or empirical knowledge directly applicable on the market, "associated with" equipment and hardware in general, as opposed to the neoclassical view of technology that would regard it as "knowledge embodied in" machinery and/or equipment (Dosi, 1982; OECD, 1992).

Similarly, according to Carayannis, Rogers, E., Kurihara, (1998, p. 3):

Technology is the information that is put to use to accomplish a task.

Of the ideas presented, we highlight the character of knowledge and information inherent to technology, which almost always includes a tacit component (Winter, 1988), that is rarely expressed completely in exact standards and theories.

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