

Chapter 1.17

Product Innovation as a Result of Knowledge Development Processes in Organisations

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ABSTRACT

The main purpose of this chapter is to conduct a theoretical analysis of how product innovation is influenced by the process of knowledge management, and to show that it is necessary to complete the entire process in order to develop incremental as well as radical innovations. Other studies have associated different knowledge development processes with different types of product innovation by specifically linking radical innovation with exploration processes, and incremental innovation with exploitation processes. We differ from this point of view, since we consider both processes as being necessary to the development of the two kinds of innovations.

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INTRODUCTION

Product innovation is one of the visible results of the capability to create knowledge (Un and Cuervo-Cazurra, 2004), since the knowledge that is created must be justified by introducing innovations (Nonaka, von Krogh and Voelpel, 2006). Schumpeter (1934) already claimed that new combinations of knowledge and of learning were transferred to the creation of innovations in the enterprise. An innovative context is going to require the combination of different knowledge bases, as well as the creation of new knowledge. Thompson (1965) defined innovation as the generation, acceptance and implementation of new ideas, processes, products or services, while the definition put forward by Zaltman, Duncan and

Holbeck (1973) states that innovation is an idea, practice or material artefact perceived to be new by the relevant unit of adoption. In this chapter we will focus on product innovation, which may be radical or incremental. Radical (or disruptive) innovation is *an innovation that has a significant impact on a market and on the economic activity of firms in that market* (OECD, 2005: 58), but it is important to recognise that an innovation can also consist of a series of minor incremental changes (OECD, 2005: 40). Thus, following this idea and also following definitions put forward by Dewar and Dutton (1986), Ettlie, Bridges and O'Keefe (1984) and Gopalakrishnan and Damanpour (1997), we consider radical innovation as that producing fundamental changes in the activities of an organisation and incremental innovation as that which produces minimal changes. Radical and incremental outcomes are thus considered as two dimensions. Consequently, we understand that innovation outcomes must include radical and incremental innovations (Damanpour, 1991; Gopalakrishnan and Damanpour, 1997). Knowledge created by an organisation may be reflected in the whole range of these outcomes.

Furthermore, the knowledge development process in organisations requires exploration and exploitation activities. Initially, the concepts of exploration and exploitation were proposed from the literature on Organisational Learning. More specifically, March (1991) defines exploration as those activities related with searching and experimenting, whereas exploitation is the expansion of existing competencies, technologies and paradigms. Both activities are necessary for the continuous development of learning (Bontis, Crossan and Hulland, 2002; March, 1991) and therefore for the development of organisational knowledge.

Nevertheless, some authors conceptualise exploration and exploitation as outcomes and not as capabilities, and they specifically associate exploration with radical and exploitation with incremental innovation (e.g. Benner and Tush-

man, 2002). The framework that we propose here departs from those studies and suggests that the degree of novelty is not the aspect that differentiates exploration and exploitation activities. Our approach considers exploration and exploitation as two types of activities that are both necessary for successful knowledge development, and therefore for the development of innovations. Those ideas help to further our comprehension of how knowledge management facilitates innovations in firms. It is not enough to direct and foster processes within the organisation that are aimed at just exploration or exploitation separately, as can be deduced from studies that associate these processes with different types of innovation; rather, both of them must be fostered.

Thus, the main objective of this chapter is to analyse how product innovation is one of the outcomes of the process of creating organisational knowledge and, how all the phases of the process are required to develop both incremental and radical innovations. In the section that follows, we shall examine what the process of knowledge creation is like, associating it with the terms exploration and exploitation. We will then review the conflicts that exist in the use of these two concepts, in order to highlight the need to treat them as ex-ante variables, which together exert an influence on another variable that can be considered as their result, i.e. innovation. Following that, future lines of research will be proposed and last section will contain the conclusions drawn from the study.

BACKGROUND

The ability to innovate on a continuous basis is important to be able to maintain a competitive advantage in such a changeable environment as the one that firms have to work in today. Innovation in the firm will depend on its capability to apply and to develop new knowledge (Cavusgil et al., 2003). The importance of analysing what organisational knowledge is like and how it is developed, so as

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