

Chapter 8

How Firms Deal with Discontinuous Innovation: An Empirical Analysis

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ABSTRACT

Management literature has highlighted that under discontinuous conditions, incumbents have encountered serious obstacles in identifying, developing, and commercializing innovations as traditional and validated ‘good’ approaches are not adequate, or even counterproductive. It is therefore necessary to identify and deploy the practices that organisations could apply for enhancing their capacity to manage innovation under such complex environmental conditions. Based on a comprehensive literature review on search practices and on the empirical background of the Discontinuous Innovation Lab - a research network covering around 180 firms in 12 countries - a questionnaire has been submitted to a 500 high tech Italian firm sample (respondents are R&D directors or general managers). This chapter analyses in detail the relations between search practices, their antecedents (culture, organizational context, R&D expenditure, market turbulence, etc.), and performance (in terms of competences and innovation).

INTRODUCTION

Innovation can be defined as a process made up of three subsequent phases named Search, Select and Implement (Bessant & Lamming, 2005). The success of every innovative action is rooted in

the very early phase of the process where firms look both internally and externally in search for new ideas to renew themselves. Most innovation literature is about steady state conditions, where firms are focused on ‘doing what we do but better’, while discontinuous conditions – i.e. ‘doing differently’ – is less researched (Bessant, 2008). At the same time, the old exploration/exploitation

DOI: 10.4018/978-1-4666-0134-5.ch008

question is challenged by the scope of changes in environmental elements and the level of interactivity amongst them, which means that the discontinuities incidence is likely to rise.

In other words: to survive firms must satisfy, at the same time, the requirements of today's customers (in terms of functionality, price, time, quality, place and service) and the needs of the tomorrow's customers, in a context that cannot be expected to have the same characteristics as in the past. While the first requirement develops along a defined pathway – i.e. existing trajectories – and produces incremental as well as radical innovation, the second one also results in small – i.e. incremental – or large – i.e. radical - innovation *but* refers to new trajectories – i.e. new directions. Therefore, it can be argued that the exploit/explore binary divide refers to the direction of the search activity: “same direction” - i.e. along a defined pathway – or “different direction” - i.e. beyond the envelope, out-of-the-box; whilst in both situations we have small or large steps in terms of incremental and radical innovation.

This chapter, as general context, addresses discontinuous innovation (DI) – i.e. innovation beyond the envelope, which occurs under environmental complexity (discontinuous innovation involves a fundamental change in approach or technology). Specifically, it deals with the search phase of the innovation process: in other words the “explore” search. It also studies some antecedents factors and some consequences of the same search phase.

SEARCH PRACTICES FOR RADICAL INNOVATION UNDER DISCONTINUOUS CONDITIONS

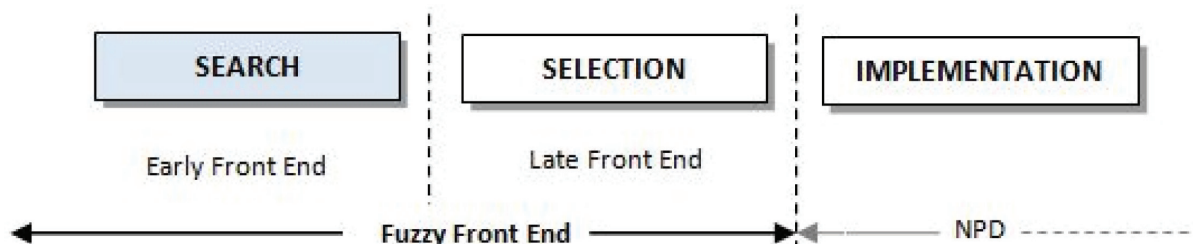
Figure 1 describes the three key components of DI process: *search* for new ideas, *selection* to decide which particular ideas should be investigated and *implementation* of evaluated concepts so as to produce an effective response to the market in terms of reaction to or innovation creation.

Search phase lies at the fuzzy front end (FE), and specifically at the ‘early’ front-end, where activities are related to generate ideas, managing ideas and locate opportunities, while selection and concepts development refer to the ‘later’ front-end – i.e. the selection phase.

In the literature, there are two main activities in the Search phase: idea generation and idea management. Idea generation refers to environmental scanning, seeding ideas and opportunity identification; idea management is the process of capturing, storing, and organizing ideas to be used in the late FE processes.

Under discontinuous conditions, firms need to develop the capacity to ‘see’ weak early warning signals, extending their natural steady state search space (Day & Schoemaker, 2006). However firms that excel at managing innovation in a steady state environment are often the ones to suffer most when discontinuous shifts occur (Christensen, 1997). These firms typically deploy ‘best practice’ steady state routines - i.e. they work closely with customers/suppliers, make use of sophisticated resource

Figure 1. Search phase of the innovation process



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