

Chapter 15

How to Create a Breakthrough Innovation: Futures Research Methodologies for Disruptive Innovation

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ABSTRACT

We are witnessing the biggest transformation in the technology in the modern society increasing dramatically the data usage, more efficient services, and customized product/services. In the globalized world, the traditional incremental innovation, in some cases, might not be enough to defeat the competition and make a successful business in the long term. In order to compete in a competitive market, the entrepreneurs constantly look for new ways to create a breakthrough innovation. The aim of this chapter is to discuss disruptive innovation and strategies for creating disruptive business combining futures research methodologies with business model framework. In order to meet the objective, an analysis of state of art has been carried out providing an overview of disruptive Innovation and the main “future research” methodologies (Delphi method, casual layered analysis, scenario method, and technology roadmapping). A combined model of technology roadmapping methodology with business model canvas is proposed to model disruptive innovation and a case study is presented.

INTRODUCTION

The constant search for improvements on the competitiveness and market expansion by countries and private companies put innovation and the technological development as a competitive differential in a competitive market. Develop innovative products and connecting efficiently the results of R&D processes with the business world and consumer needs have become an indispensable strategy for increasing the existing market share and dominating new markets.

The growing literature over the past three decades about tools and methodologies to support decision-making process and strategic planning aims to support innovation as a process. In this chapter, we discuss

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the need for disruptive Innovation and mythological approach for support disruptive innovation. The principal aim of this work is to contribute to the Disruptive Innovation Theory helping promote economic growth. The rest of the paper is organized as follows: in section 2, we review the literature on innovation and disruptive innovation exploring some competitive advantages of innovation as a process. Section 3 analyses the theoretical overview of future research methodologies such as Delphi method, Casual layered analysis, Scenario method, and Technology Roadmapping exploring the contribution of these methods for strategic development. Section 4 introduces business models overview and proposes a conceptual framework for integrating future methodologies with strategic management tools for business models as a tool to help the generation of breakthrough Innovation. Section 5 reports the experimental analysis of the method exploring the framework application into three well-known examples of breakthrough Innovation: Uber, iPhone and one case study of a product in development stage (interchange-designer). Finally, section 6 concludes the chapter discussing the disruptive innovation process.

LITERATURE REVIEW

The term “innovation” was used with the modern meaning for the first time by Schumpeter in 20th century. According to Schumpeter, innovation is defined to a product, process or organizational changes, stressing that they do not necessarily originate from new scientific discoveries (Schumpeter 1934). The definition of innovation provided by Gibbons et al. (1994) emphasized that the technology must satisfy the market needs. Abernathy and Clark (1985), suggest that disruptive innovations destroy the value of existing technical competencies.

However, as pointed by Bower and Christensen (1995) the traditional companies tend to focus on current customers and markets, not address customer’s needs, contributing to the failure of leading companies to maintain at the top of their industries. This myopia of the established leaders in seeing the customer needs and learn from the experience of previous failures, helps disruptors (normally small organizations able to change the product and market strategy quickly) gain a competitive advantage in the market.

In a recent detailed examination of disruptive Innovation, Christensen et al. (2015) categorized the innovation in 3 groups.

1. **Sustaining Innovations:** Represented by improvements in products that companies can sell with higher profits to their best customers. Usually provide performance improvements in attributes that are the most valued by the most demanding customers. For example, a company that create a better / quicker / lighter / more beautiful computer is not necessary disrupting apple’s macbook business, but a sustaining innovation
2. **Low End Disruptions:** Target well customers at the competitive market. Traditionally developed for companies already in position in a market, introduce a higher quality products to satisfy their most profitable customers (high end of market), overshooting the needs of low end and the mainstream customers. This leaves an opportunity for new entrants to find footholds in the less profitable segments. These usually offer ‘good enough’ performance.
3. **New-Market Disruptions:** Opening new markets, by focusing on customers who may lacked the money or skills to buy/use the product.

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