

Chapter 25

How Multinational Companies Create and Capture Value From Innovation Through Business Model Dynamics

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ABSTRACT

Willing to answer to the research question of how multinational companies succeed in creating and capturing value from a new technology, this chapter aimed at filling the gaps in the existing literature with regards to defining business model dynamics and demonstrating business model dynamics in practice. Through a case study of Monsanto, and of the way the company's subsidiary managed to successfully adapt and innovate in Brazil, this chapter showed that external pressures such as new technology, the need to respond to the customers' demand for information concerning the company's new value proposition, existing regulation (among other external pressures) forced the multinational company to implement changes and create new elements in some of the business model components. Results also showed that to capture part of the value created with a new technology it might be necessary to complete business model design and evaluation with the analysis of the external environment.

INTRODUCTION

Innovation and new product development as major drivers of competitive advantage have been well studied in a variety of sectors (Porter, 1985; Tidd, Bessant and Pavitt, 1997; Tushman, Anderson and O'Reilly, 1997; Gault, 2018; Prange and Schlegelmilch, 2018). Innovation requires transformation of new ideas or technologies into value (Chesbrough & Rosenbloom, 2002), and an understanding of how to adapt the company's business model to a new idea or technology (Teece, 2010).

A company which has managed successfully to stay atop its market, continuously innovate, and adapt to competitive environments is Monsanto - which was the first agrochemical company to enter the genetically modified seed market and which, in little time, became a leader of its sector. In Brazil, as in the rest of the world, Monsanto is a leader in the genetically modified (GM) seed market, with proprietary ownership of many products that have been approved by the Brazilian regulatory institution - the Biosafety National Technical Committee (abbreviated as "CTNBio" in Portuguese) (CIB, 2018). In 2017 Monsanto - on its own - invested US \$1,607 million on research and development of new seeds (Monsanto, 2017). Until 2017, Monsanto had registered 32% of Brazil's commercially approved GM seeds (CTNBio, 2018). On the other hand, despite this positive scenario for Monsanto in the present, historically the company has faced many problems throughout its path to innovation - problems such as the difficulty it faced in communicating the value of the technology present in the RoundUp Ready seeds in the 1990s, and the several years it took the company to collect on its technology present in the genetically modified soybean seeds in Brazil.

According to Mariante, Sampaio, and Inglis (2009), over the past few decades, Brazil has achieved significant results in agriculture-related research due to high investments in science and technology. The country is a world leader in tropical agricultural research and is a reference in forest breeding programs. It is one of the few countries in the world that can probably double food production, using relatively less energy than other commodity-producing countries. Another relevant measure is related to agricultural research, research which, from 1990 to 2005, was responsible for the development of 529 new plant cultivars - commercial plant varieties, including sugar cane, soybean, wheat, oranges, rice, and coffee - adapted specifically to the different climate and soil conditions of Brazil's food-producing regions (Teixeira, 2010).

Brazil, for many reasons, is a promising market for companies working in the genetically modified seed sector. The speed with which producers have adopted biotechnology has been quite impressive lately.

During the 2017 crop year, Brazil planted 50.2 million hectares with biotech crops (26% of the global area) (ISAAA, 2017). Besides Brazil's being the second-largest producer of biotechnology crops in the world, some other aspects of the country have attracted multinational companies' attention, such as Brazil's biodiversity, scientific competences in plant breeding, and seeds that are already adapted to the country's different regions. Brazil has from about 44,000 to 50,000 species of plants - which represents approximately 18% of global plant diversity (Mariante, Sampaio, & Inglis, 2009).

In that context, we pose the research question of 'how multinational companies succeed in creating and capturing value from a new technology'. We propose that business model dynamics and evolution, which involve changes in the business model components to allow adapting a new technology to a new competitive environment, might help answer that question. A company's business model can be understood as the logic used by a company to make money through its value propositions (Teece, 2010).

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