# Chapter 11
# Business Model Innovation and Dynamic Capabilities Development in IoT Start-Ups: A Case Study

**Paolo Di Toma**
*University of Modena and Reggio Emilia, Italy*

**Cecilia Correggi**
https://orcid.org/0000-0003-3523-7123
*University of Modena and Reggio Emilia, Italy*

## ABSTRACT

*This research addresses the relationship between dynamic capabilities and business model innovation in start-up firms operating in high-technology environments. More specifically, this chapter seeks to explain how and why these companies, which are characterized by a high level of uncertainty and resource scarcity, are able to transform individual managerial capabilities into dynamic capabilities to sense and seize new opportunities and to reconfigure the business model to welcome the change. Findings highlight those specific modes of interaction among the entrepreneurs involved - which are influenced also by a strong sharing of value and objectives - fuel the development of these capabilities. These findings were achieved thanks to the exploration of the phenomenon through a single case study on a start-up which develops internet of things products for the health sector. This research proposes a theoretical advancement about business model innovation in start-ups and explores how and why these companies develop proper dynamic capabilities to do that.*

## INTRODUCTION

In a dynamic competitive landscape, firms constantly renew and adapt their Business Model (BM) to cope with emerging and disruptive phenomena, such as social changes, global environmental or health

DOI: 10.4018/978-1-6684-4895-3.ch011

emergencies, and digitalization. Both scholars and practitioners identified the BM as an insightful unit of analysis for understanding the firms' competitiveness and Business Model Innovation (BMI) as a key driver for pursuing above-average performance (e.g. Berends et al., 2016; Foss and Saebi, 2017; Karmeni et al., 2021; Wirtz et al., 2016). This is especially true for start-ups; indeed, BMI is a key challenge for these companies in their effort to gain their place in the environment and the need to enrich the analysis is pivotal to shed light on more design options (Haaker, 2021). New ventures - especially if they operate in a highly technological sector - continuously need to align themselves to the external environment (Hanlon & Saunders, 2007) and be very agile to do that. In addition, they often suffer from a limited knowledge base (Sapienza et al., 2006) and they deal with the knowledge gap (Chrisman et al. 2005; Johnson et al. 2007) between the knowledge needed for successful ventures and that available in the firm.

However, little has been said about how start-ups develop Dynamic Capabilities (DCs) (Teece, 1997) for BMI. The DCs Framework is a promising lens to explore and better understand the process by which start-ups, operating in a high-tech environment, sense and seize new opportunities, and transform themselves to welcome the change (Teece, 2007). Through a Single Case Study on a start-up which operates in the Internet Of Things area, this research seeks to explain *how* and *why* interaction between managers as well as between managers and external partners fuels the development of DCs for BMI. Findings highlight how the process of transforming individual knowledge into DCs unfolds and leads to innovative Internet of Things BM.

In recent years, digital technologies and, more precisely, the Internet of Things, has become central in the development of new and innovative BM (Metallo et al., 2018; Glova et al., 2014; Haaker et al., 2021; Palmaccio et al., 2021). Internet of Things refers to the networked interconnections of everyday objects, many of which are equipped with ubiquitous intelligence (Xia et al., 2012). These objects have gained more and more importance in the health, social and wellbeing sectors (Laya et al., 2018) and the development of these products requires high level competences and a continuous readjustment of the BM. For these reasons, the research site is considered adequate to investigate the phenomena of BMI through digitalization in start-ups.

## BACKGROUND

Business Model, which has gained increasing attention during the last thirty years both for scholars and practitioners, is today a well-known and influential topic in the management literature. The BM concept allow to identify and explain how companies create value through the exploitation of business opportunities (Amit & Zott, 2001) and, how this value is delivered to customers (Magretta, 2001) and transformed into profit (Teece, 2010). Despite the importance the concept has both for companies and researchers, there is absence of a unique and accepted definition of the notion across studies and scholars. The current paper embraces the one given by Zott and Amit (2010; p. 2016) that conceptualized BM as a "*system of interdependent activities that transcends the focal firm and spans its boundaries*".

Literature reviews on BM have highlighted the importance of the construct in research on technology (Foss & Saebi, 2016). Indeed, the strength of BM concept is that it is considered as a potential unit of innovation (Zott, Amit, & Massa, 2011) which is pivotal considering the advent of new technology and the evolution companies are living due to that (Carayannis, 2014; Mezger, 2014; Hossain, 2017; Ibarra et al, 2018). Innovative BM may lead to superior performance (Casadesus-Masanell & Zhu, 2013) and new technologies allow firm to experiment new forms of value creation. A new wave of BMI is due to