



UNIVERSITAT DE BARCELONA

Exploring what disruptive innovation is and its influence on Spanish incumbents

Sucet Jimena Martínez Vergara

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PhD in Business | Sucet Jimena Martínez Vergara

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PhD in Business

Exploring what disruptive
innovation is and its influence
on Spanish incumbents

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Dedicado a mi familia

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CHAPTER 1 | INTRODUCTION

CHAPTER 1

INTRODUCTION

1.1. MOTIVATION, CONTEXT AND RESEARCH OBJECTIVES

A few years ago, my attention was captured by a paper on entrepreneurship and poverty reduction by Si et al. (2015). This study put into context the role of peasant entrepreneurs with limited resources that successfully use disruptive innovation (DI) to reduce poverty. They achieve this by viewing low-end segments of the market as a different group of customers and satisfying their needs by providing them with simpler, cheaper, and more convenient products. DI thus fosters entrepreneurship and creates new opportunities and jobs. Such innovation can help poor countries to reduce indicators of extreme poverty and unemployment (Hopp et al. 2018a), on the understanding that DI presents opportunities to overcome these issues and start to identify the untapped potential of the lower segments of the market for making money. Motivated by the arguments cited above, I began my research on disruptive innovation theory by looking in greater depth at the principles behind this type of innovation.

In 1997 Prof. Clayton Christensen (1952-2020) published his first book titled “The innovator’s dilemma”, where he introduces the concept of “disruptive innovation” using examples whereby small companies with few resources have developed disruptive technologies. This is very different from incremental innovation. In order to achieve this type of innovation it is better not to listen to customers, and instead to invest in developing lower-performance products with lower margins and to target small markets with simple, and usually more convenient, innovations that are available at low prices. It should also be noted that these products—underperform the established products of the incumbents, i.e. traditional, well-managed companies with a strong reputation in a mainstream market. However, all

over the business world, these successful, competitive companies will usually find their leadership threatened when faced with DI. Because of such a ground-breaking approach, Christensen's book caught the attention of researchers, scholars, and practitioners alike.

In an effort to explain the principles of this theory better, Christensen and Raynor (2003) present its evolution in the form of two types of DI –*Low-end disruption*, as already emphasized in the first book, and *New market disruption*, which creates new consumption, and unlike the former does not attack the mainstream market. Gholampour (2017) argues that through this type of disruption, entrants find a way to turn non-consumers into consumers. What are usually small companies identify an opportunity to satisfy the needs of a less-discerning niche of the market, usually the low-end market, or create a new market by arousing new needs among the low-end and mainstream market. The disruptive innovation model is illustrated in Figure 1.

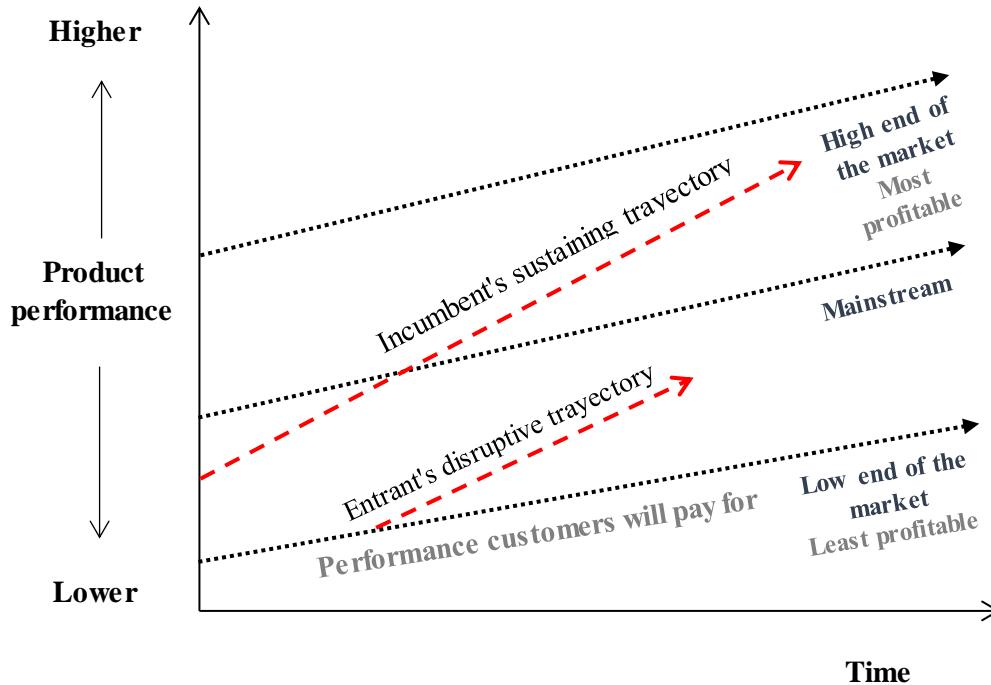


Figure 1. Model of DI presented by Christensen et al. 2015

The extant literature provides insight into DI, most of it using case studies as this theory is relatively ‘new’, and which has helped to build on the preliminary theory by searching for patterns that reflect the principles that it identifies (Fayolle and Wright 2014:235). These articles make up a rather large and tangled web, but some have endeavoured to research its definition (For example: Govindarajan and Kopalle 2006; Yu and Hang 2010; Christensen, Raynor, and McDonald 2015; King and Baatartogtokh 2015; Hopp et al. 2018b). Yu and Hang (2010), in a study analysing the basics of this theory, argued that its conflicting and disperse nature may be a barrier to future research. Nagy et al. (2016) argued that “*unambiguously defining a DI is essential for both academic and practical reasons.*” The basic definition of DI is considered unclear among disruption researchers and practitioners alike (Markides 2006; Schmidt and Druehl 2008; Yu and Hang 2010; Nagy, Schuessler, and Dubinsky 2016; Hopp et al. 2018b) and it has been subject to misinterpretations, as was even recognised by the pioneer of the theory itself (Christensen, Raynor, and McDonald 2015).

DI is complex to understand, but a preliminary review of articles on the subject yields a relevant set of themes such as: low-end markets, available prices, simple and more user-friendly products, “enough” performance, customers’ needs outside of the mainstream market and quality. Another important factor pointed out by this theory is that DI is a threat to the incumbents’ leadership and even survival, because it encroaches on the mainstream market where they operate. What is more, if the core definition of DI is misunderstood, then this also has a negative impact on incumbent leadership, which raises such questions as: What is DI? What is already known about the theory? What are its main characteristics? How can scholars provide a meaningful answer? From the perspective of “messy information, messy decisions”, if incumbents are to deal with this threat, then it is crucial for them to first understand its principles, grasp the challenges and opportunities of its theory, and understand what it involves in order to build a consistent definition that will help to harness the principles that bear its name.

While there is still debate in the literature about DI’s definition, another debate has addressed numerous articles related to the challenges that incumbents have to face because of DI and how they should deal with them

(Christensen and Raynor 2003; Danneels 2004; Ansari and Krop 2012; Ansari, Garud, and Kumaraswamy 2016). This implies considering certain drawbacks of the theory, such as the evidence that in the short term these innovations perform more poorly than mainstream products, offer less profits, and attract a much smaller market (at first). DI may therefore appear unattractive to incumbents, because it does not generate profits like the mainstream market does, at least when it starts in the low-end market. But over time it can lead to a successful business and conquer the mainstream market. DI can give companies a major competitive advantage (Dijk, Wells, and Kemp 2016). Corsi and Di Minin (2014) argued that the new challenge for incumbents of the twenty first-century is to develop innovations *for the mass markets of less affluent populations of emerging markets* which are normally unattractive for them.

Many examples of disruptive innovations have been identified, such as, for instance, Internet (Latzer 2009), MacDonald's, personal computers (Christensen and Raynor 2003), 3D printing (Hahn, Jensen, and Tanev 2014), electric bicycles (Ruan, Hang, and Wang 2014) Uber and AirBnB (Tham 2016), cellphones (Govindarajan and Kopalle 2006), Netflix (Park 2017), email, digital animation, Canon photocopiers and portable diabetes blood glucose meters (Yu and Hang 2011), among others, and these enterprises are usually globally accepted and are reaping healthy business profits. Because of that, many companies are interested in exploring what DI can do for them or investigating ways to develop a DI. The expected growth of these companies will probably offer new opportunities for expansion to citizens, small enterprises, and incumbents, and so DI has attracted huge attention among scholars and practitioners (Yu and Hang 2011; Klenner, Hüsigg, and Dowling 2013; Hopp et al. 2018b) and has become extremely influential (Reinhardt and Gurtner 2015). Indeed, it has become one of the most renowned types of innovation in the business world, and due to being such a popular term among the general public and being in such great demand (Gans 2016; Benzidia, Luca, and Boiko 2021) it is addressed in many research contributions.

1.1.1. RESEARCH OBJECTIVES

The results of the preliminary review of the literature on this theory have revealed interesting questions about how exactly DI is to be understood. The complexity of this theory has given rise to a series of inquiries aimed at generating a full understanding of the true position of DI in the business world. Consequently, the overarching objective of this thesis is to contribute to the literature on DI theory by exploring such questions as what is already known about this theory, and how much it influences incumbents located in Spain. Hence, in this dissertation, our research is aimed at answering the following four questions:

Research questions (RQ)

- ▶ **RQ1** What is disruptive innovation? Exploring its antecedents, definitions, typology, and main characteristics.
- ▶ **RQ2** What business behaviours are adopted by the actors associated with DI (that is, incumbents, entrants and customers)?
- ▶ **RQ3** How do Spanish incumbents attend to, interpret, and respond to disruptive innovation?
- ▶ **RQ4** What are the main management priorities, key factors, and challenges for incumbents in relation to tackling disruptive innovation?

These questions are going to guide our research process as we seek to provide answers in the context of the DI phenomenon, focusing on contributions to the improvement of knowledge of this theory that can support reflection, and motivate business strategies. These research questions will help to understand the potential role that DI can play in supporting business competitiveness, and how its visualization can increase awareness of the

most cutting-edge business practices. Finally, this dissertation can provide a point of reference for the overall discussion on the topic.

1.1.2 STRUCTURE OF THE THESIS

In this dissertation, the formulated questions are addressed from both the theoretical and empirical angles in three articles presented as chapters 2, 3 and 4 respectively. The content of each chapter is summarized in Table 1.1, where the reader can also view the publication strategy followed by the author and Table 1.2 shows the participation in workshop, conferences, and book chapter.

Chapter 2. The starting point is that there is an unanswered research question, namely “what is DI?” If DI theory is to be employed in research, it needs to be more clearly understood. This chapter presents a review of the literature on DI theory in order to answer research questions Q1 and Q2 by identifying what has been written about the topic and any new conceptual frameworks and questions requiring more research (Paré et al. 2015). But it is also important for such a review to create knowledge maps and serve as a significant element and determinant of the value of the research project as a whole (Fayolle and Wright 2014:48). Due to the particular objectives of this chapter, a critical review was carried out in order to provide an interpretive analysis of the existing literature and reveal its strengths, weaknesses, controversies, contradictions, and other important issues with respect to this particular topic (Paré et al. 2015).

By adopting such a critical review methodology, this chapter provides a general overview of DI in relation to the established research questions. A timeline was developed to show the evolution of DI. Two important milestones related to its origins, and which may have provoked some misunderstandings, were observed. We analyse 17 previous definitions of DI and propose a definition, as well as identifying 32 characteristics and two types of DI and analysing the behaviours adopted by incumbents, entrants and customers with regard to DI. These findings vastly increase our knowledge of DI and are helpful for understanding the complexity of the phenomenon. The contents and results of chapter will therefore assist

practitioners, scholars, and graduates to find, evaluate, and synthesize the contents of many empirical and conceptual papers related to the principles of DI theory.

Chapter 3. In order to understand the theoretical principles of DI and considering that incumbents must respond to big changes under the current economic paradigm, the next step is to examine the challenges in the incumbents' domains. This topic is covered in Chapter 3. On the one hand, the existing literature argues that DI can generate an important competitive advantage for companies (Dijk, Wells, and Kemp 2016). On the other hand, DI theory provides a “*general useful warning about managerial myopia*” due to the fact that many managers disregard or misunderstand the power of an emerging threat (King and Baartartogtokh 2015). Consequently, question Q3 (How do Spanish incumbents attend to, interpret, and respond to disruptive innovation?) is addressed by conducting qualitative research by means of semi-structured interviews with 20 top managers of incumbents located in Spain. The interviews explored the managers' perceptions of DI theory.

Even though the role of incumbents and DI has been studied, managers' knowledge and insight on the matter has rarely been addressed. Therefore, this chapter provides valuable information about what managers currently understand DI to mean, describes the types of managerial strategies that they apply to tackle DI, their priorities when innovating, the influence of this theory on their activities, and their strategies to get their ideas to disrupt the mainstream market and its incumbents. Incumbents are up to date about what is happening in the market and aware that there are a wide variety of opportunities, but also challenges that they must overcome. In such a scenario there is a clear interest in developing innovations that are focused on the present and that will be helpful to face future events. Therefore, DI is not going unnoticed. This study introduces new insights and presents a variety of fresh answers from managers in relation to DI. Consequently, the findings help us to understand the relevance they attribute to this theory, offering a new understanding of the complexity of DI and the practices employed by incumbent managers.

*Chapter 4*¹. Chapter 3 has already shown that the bulk of incumbents are interested in DI and that there is a common assumption that it leads to transformation and is an effective means of standing out from other incumbents in more and more competitive markets. In other words, today's slogan seems to be: "It is time to be a disruptor." Now, more than ever, if incumbents are interested in developing DI, it is crucial to clearly identify the managerial priorities, key factors and challenges that they take into account in order to do so. Thus, chapter 4 deals with question Q4: "What are the main management priorities, key factors, and challenges for incumbents in relation to tackling disruptive innovation?" As was the case with chapter 3, the data collected through the semi-structured interviews was useful for answering this research question.

The fieldwork required a huge effort to visit the headquarters of the companies in order to carry out the interviews, which were recorded and managed using NVivo. A significant amount of information was gathered, and this data will be used to develop two contributions that are expected to be published in indexed journals. The first contribution (chapter 3) explores incumbents' knowledge of DI and how it influences them, while the second (chapter 4) presents important approaches used by incumbents to tackle and harness DI.

In this chapter, we present interesting managerial priorities, key factors and challenges that incumbents take into account to tackle DI. The results emphasize the importance of quality and price as well as emerging markets to develop DI. By examining these previous approaches in detail, this study makes a novel contribution because its findings confirm existing assumptions about DI.

As a whole, our three contributions (chapter 2, 3 and 4) aim to offer scholars, practitioners, and students access to this intriguing theory, exploring the approaches, interpretations, attitudes and contexts in which DI is developed,

¹ At the beginning of the research process, the planning was to develop this third contribution during an international research stay at the Innovation management Chair led by Dr. Carsten Dreher at the Freie Universität Berlin. The research stay was accepted but unfortunately it has to be cancelled because of the effects of the pandemics.

and thereby contributing to the advancement of theoretical and managerial knowledge of disruptive innovation by answering a series of questions such how DI can be viewed to help business, how it can be adapted to incumbents and how it can be utilized to support new businesses. This type of knowledge is needed at the company level to avoid becoming victims of DI. This dissertation therefore provides interesting approaches to existing knowledge, as well as encouraging new behaviours and insights by supporting personal reflection and collective exploration within an appropriate business context of DI theory.

Finally, the remainder of the dissertation consists of four chapters, in addition to this introduction (chapter 1). Figure 1.1 shows the structure of this dissertation.

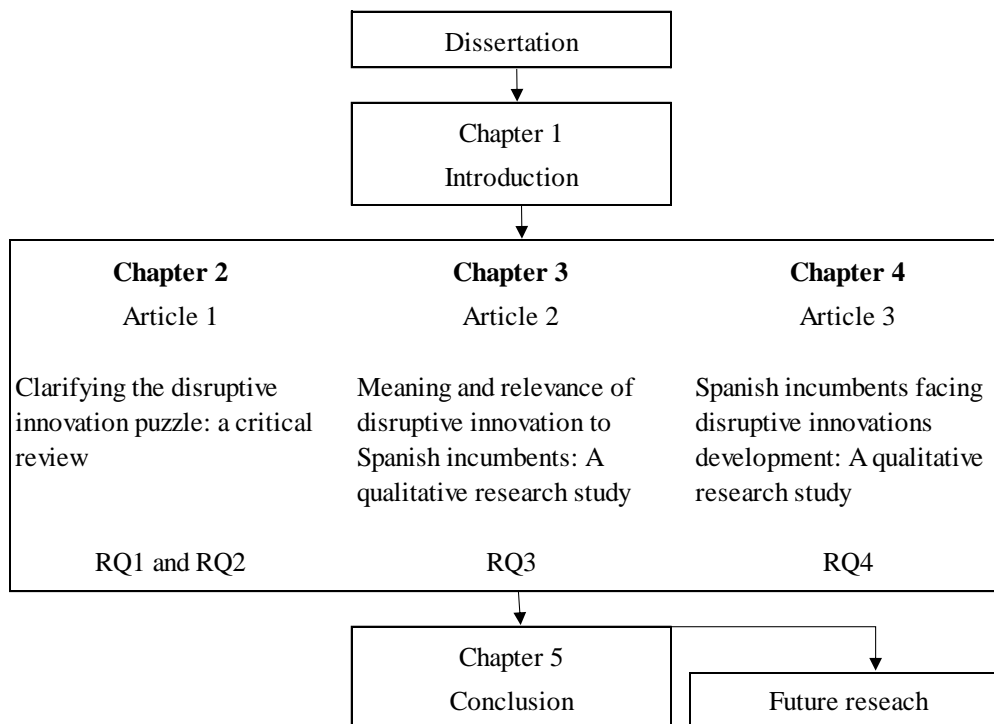


Figure 1.1 Structure of the dissertation by chapters

Table 1.1 Overview of the main studies included as a chapter in the thesis and publication strategy


	Chapter 2 (First Article*)	Chapter 3 (Second Article)	Chapter 4 (Third Article)
Title	Clarifying the disruptive innovation puzzle: a critical review	Meaning and relevance of disruptive innovation to Spanish incumbents: A qualitative research study	Spanish incumbents facing disruptive innovations development: A qualitative research study
Research question	(1) What is DI? Analysing its antecedents, definitions, typology and characteristics (2) What behaviours are adopted by the actors associated with DI (that is, incumbents, entrants and customers)?	How do Spanish incumbents attend to, interpret and respond to disruptive innovation?	What are the main management priorities, key factors, and challenges for incumbents in relation to tackling disruptive innovation?.
Methodology	Literature review- Critical review	Qualitative research- using the principles of grounded theory, semi-structured interviews were held with to 20 top managers of incumbents located in Spain	Data-base of semi-structured interviews was also useful to produce this contribution.
Main finding	Disruptive innovation has its own elements to be identified, and requires in-depth analysis to avoid confusing it with other innovation approaches Its impact on practice is huge and incites further efforts to establish a stronger theoretical grounding	The findings suggest that disruptive innovation is popular and attractive for incumbents but there are many challenges due to a lack of understanding of this theory This study provides new insights on this theory in the context of incumbent environments	Findings reveal several approaches identified by incumbents to enhance their possibilities to develop disruptive innovation as well as common challenges they need to overcome in relation to the principles of this theory. There is a trend towards harnessing DI more than viewing it as a threat
Publication strategy	European Journal of Innovation Management Impact factor 1,98- JCR -Q2; SJR- 0,618 Q2) Submitted: July 2019 Accepted: February 2020	Journal of Product Innovation Management Impact factor 5- JCR - Q1 Submitted: March 2021	Journal of Product Innovation Management Impact factor 5- JCR - Q1 Finished
Status	Published: April 2020	Under review	Pending submit

* It took one and a half year to publish the first article. This seems reasonable considering that the overall time from initial submission to publication can be well over a year and two years in most cases if the article is accepted (Fayolle and Wright 2014:35).

Table 1.2 Workshop, conference, and book chapter participation

	First article		Second and third article		
	Institution	Name of the article	Institution	Name of the article	
Workshop	Universitat de Barcelona PhD inBusiness	What We Talk About When We Talk About Disruptive Innovation: A Critical Review February 2019	Conferences papers	13th International Conference on Industrial Engineering and Industrial Management XXIII Congreso de Ingeniería de Organización Gijón, Spain, July 11-12, 2019	Factors Influencing Disruptive Innovation Development Within Spanish Firms: A Qualitative Research
Book chapter*	Chapter title : Business Strategies and Disruptive Technologies: An Overview Within the Disruptive Innovation Theory (pp. 1-30). Authors: Martínez-Vergara, S. J., & Valls-Pasola, J. Book title: Disruptive Technologies for Business Development and Strategic Advantage Published by IGI Global, Pennsylvania USA. 2018 ISBN13: 9781522541486, DOI: 10.4018/978-1-5225- 4148-6. www.igi-global.com		X Congreso Internacional de la RIDIT Facultad de Economía y Empresa de la Universidad de Barcelona 20, 21 and 22 de November 2019	Exploring the Influence of Disruptive Innovation on Spanish Firms: A Qualitative Research	

*The chapter presents key issues taken from the review of existing literature on disruptive technologies and their importance for successful business strategies.

**CHAPTER 2 |  CLARIFYING THE
DISRUPTIVE
INNOVATION
PUZZLE: A
CRITICAL REVIEW**

CHAPTER 2

CLARIFYING THE DISRUPTIVE INNOVATION PUZZLE: A CRITICAL REVIEW

Abstract

Purpose: Disruptive innovation theory has attracted the interest of researchers and practitioners across many areas, resulting in the development of new business models and strategies. Despite the increasing scholarly attention, its definition has not yet been understood, the understanding of the term “disruptive” and the complex nature of this innovation has provoked some misinterpretations, and the meaning remains ambiguous. To address this confusion, this article undertakes a critical review of disruptive innovation in an attempt at providing a solid theoretical grounding.

Design/methodology/approach: The review examines the key issues of published articles, identified after conducting a search in the Web of Science scholarly database. The analysis highlights the basic definitions of disruptive innovation, showing its evolution, types, and its characteristics. This article also examines the behaviours adopted by the actors associated with disruptive innovation (i.e. incumbents, entrants, and customers).

Findings: Overall, this article finds that disruptive innovation has its own elements to be identified and requires in-depth analysis to avoid confusing it with other innovation approaches. The findings suggest that disruptive innovation affects businesses and sectors in varied and complex ways because customers from low- end market and mainstream market appreciate this innovation. Further, its impact on practice is huge and incites further efforts to establish a stronger theoretical grounding.

Originality/value: Our research contributes on the evolution of this theory, helping to better understand the phenomenon of disruption and can be used for different types of research settings.

Keywords: Innovation, Business strategy, Disruptive innovation, Customers, Disruptive technology

Paper type: Literature review

2.1 INTRODUCTION

The theory of disruptive innovation (DI) has attracted much attention, has been widely analysed in the literature in the last 20 years (1985-2017) and continues to attract both scholarly interest and popular attention (Ansari et al., 2016). There is widespread use of the term “disruptive innovation” within academia and industry (Tellis 2006; Yu and Hang 2010; White 2017) and a business which disrupts the market and is deemed economically successful is commonly viewed as an “agile” effective business (Taylor 2017). Christensen's work (well-known as the pioneer of this theory) has been cited extensively by scholars in diverse disciplines and research fields, including marketing, strategy, and technology and innovation management (Vecchiato 2017). It has been widely applied to many different industries, such as airlines, transportation, consumer buying, and more recently, 3D printing (Hahn, Jensen, and Tanev 2014; Allahar 2017). The impact of DI is enormous, companies operate their business using this theory, potentially transforming business and society at large and it is the axis of many transformations. Researchers and practitioners are thus increasingly interested in understanding how companies can either create or compete against DI.

In the mid-1990s, the winds of change blew with great force and intense competition, even threatening some of the strongest companies, according to Clayton M. Christensen, a professor at Harvard Business School. In his 1997 book, *The Innovator's Dilemma*, he provided an explanation for the failure of respected and well-managed incumbents. Good managers are faced with a dilemma, he argued, because by doing the same things (i.e., listening to their

customers, investing in the business, and creating distinctive capabilities that would provide their customers more and better products of the sort they wanted), they run the risk of ignoring “disruptive innovations (DIs)” and lose their positions of leadership, because DI proposes that there are times at which it is right *not* to listen to customers, right to invest in developing lower-performance products that promise *lower* margins, and right to aggressively pursue small, rather than substantial, markets. In this context, some innovations have the potential to disrupt the market for competing products and services, while others sustain the competitive position of incumbent firms (Hang, Garnsey, and Ruan 2015). By focusing on maintaining their competitive position, established incumbents open the door for new entrants to identify business opportunities and to introduce DIs.

A DI attacks an existing business, offering great opportunities for new profit growth (Assink 2006a) and requiring major changes in established business models (Kranz, Hanelt, and Kolbe 2016). It results in a substantial change in the market (Assink 2006a). DI arises from globalisation, technological advances, and cultural changes, and a change always presents threats and offers opportunities (MacFeely 2016). Such has been its influence that this theory has affected businesses in varied and complex ways. In Silicon Valley disruption has become a mantra, a call for action, and instead of using the word “innovation” now just refers to disruption and disruptors (Hogarth 2017). Notwithstanding its huge influence, this theory has not been universally accepted among business theorists (Weeks 2015; Steenhuis and Pretorius 2017). Its definition remains somewhat vague, as a specific innovation characteristic, or set of characteristics, is not identified (Nagy, Schuessler, and Dubinsky 2016). Therefore, a singular definition of DI is difficult to identify and there is still not sufficient research for a clear understanding of this theory (Assink 2006a; White 2017).

Likewise, Christensen et al. (2015) have also recognised that there is still much to be learnt, and are eager to continue expanding and refining the theory. More importantly, DI has been used outside the context of its specific definition has been widely misunderstood and its basic tenets frequently misapplied (Christensen, Raynor, and McDonald 2015; Steenhuis and Pretorius 2017). This concern is shared by other researchers who claim that the definition of DI is routinely misused or improperly broadly applied in

research (Danneels 2004; Markides 2006; Tellis 2006; Yu and Hang 2010; Kushins, Heard, and Weber 2017). The term *disruptive* is often misunderstood and can be so easily misconstrued, and despite the ubiquity of the term, managers often have a hard time identifying a DI (Schmidt and Druehl 2008).

In common language the meaning of the word disrupt is associated with the idea of “interrupting the continuity of; bringing disorder to; breaking apart.” Thus, the meaning of the term “disruptive” and a lack of understanding of DI theory can also be a barrier to arriving at a common understanding of what it is. In other words, the absence of a clear definition and the imprecision with which the term is employed create confusion among those striving to understand, implement and develop optimum business strategies, and lead to errors. Christensen (1997) argued that DI is intended to help a wide range of managers, in slowly evolving or rapidly changing environments. A better recognition of DIs by managers will lead to a new dominant logic that pursues new strategic actions (Gholampour 2017). Consequently, a clear definition of DI is still one of the major hurdles to be overcome.

Nevertheless, this situation has not stopped the development of a broad-based body of literature examining the theory. Sufficient literature exists about the various aspects and facets of DI. Many of the works are empirical cases studies, and very few studies have been published that attempt to understand what is meant when we talk about DI (Schmidt and Druehl 2008; Yu and Hang 2010; e.g. Christensen, Raynor, and McDonald 2015; King and Baatartogtokh 2015). Taken together all the previous point of views, one critical goal in our review involves the definition of DI and providing a clear and comprehensive framework for the theory.

Another important point is that the importance of DI arises from its potential impact on the fortunes of incumbent and start-up firms, as well as the opportunities created for new entrants in both existing and new markets (Parry and Kawakami 2017). Thus, the key idea behind DI is that incumbents are focused on improving products and services for their most demanding,

and usually most profitable, customers thereby exceeding the needs of some segments. Entrants' early technologies have inferior capabilities and begin by successfully targeting the overlooked lower-end segments, so that over time capabilities improve, and they move up-market, delivering the performance that incumbent mainstream customers require (Steenhuis and Pretorius 2017). Inferring from Christensen (1997) and Christensen and Raynor (2003) entrants with DIs threaten the existence of leading incumbents in the market. Consequently, this part introduces the second goal of determining what actions are taken by incumbents, entrants and customers (actors of DI) under this theory.

Therefore, a study based on a critical review would clearly represent a timely addition to the literature, delivering information about current thinking on important aspects of this theory and identifying the lessons that DI has to offer researchers and practitioners.

In this context, the main aim of our work is to conduct a review of DI, identifying major works in order to answer two research questions: (1) What is DI? We conduct an analysis by focusing on three broad categories: the evolution of this theory (antecedents and definitions), typology and characteristics and 2) What business behaviours are adopted by the actors associated with DI (that is, incumbents, entrants and customers)?

DI is gaining increasing interest among researchers and business practitioners, and so researchers can use this study to understand the state of the art in DI, and practitioners can find an instrument for developing strategies, and business models, and take advantage of an opportunity or a way to survive over time. A deeper understanding of this theory could contribute to better decisions and counteract the risk inside the business world.

Our research is important for four reasons. First, as noted above “disruptive innovation” is used by researchers and practitioners, but there is no clear understanding of what exactly it means; what are the tenets supporting this theory? This article provides insight into this theory from the time of its birth,

through evolution and recent research advances. Second, this currently fashionable theory is affecting many businesses, the process that DI follows between incumbents, entrants, and customers can help managers implement effective early strategies to respond to this kind of innovation. Third, this article examines the phenomenon of disruption and complements perspective and insights into the state of DI theory in order to facilitate an easy understanding and identification of its basic principles. Fourth, this analysis contributes to clarifying the present state of knowledge of DI and can help to establish a common theoretical ground.

Subsequent to this introduction, this article is structured as follows. First, we set out the methodology used in conducting our review. Second, we report the results obtained to answer our two research questions. Third, we discuss our main results. Finally, the last section is devoted to conclusions.

2.2 RESEARCH METHODOLOGY

This article presents a critical review of DI. This section explains the literature research method taken in order to address our research questions. We developed an exhaustive coverage approach in order to ensure that all relevant studies were included in the review.

Ours process of analysis comprised the following steps: definition of a search strategy, selection of key words, research period, definition of inclusion and exclusion criteria, and process of selection of the articles applying the criteria.

- a) *Search strategy.* Web of Science was the main database used for the literature research for the most comprehensive results.
- b) *Key words.* We used the key words related to this DI theory. The data sources were searched using the Boolean search terms of “disrupt* innovat*.”
- c) *Research period (Articles retrieved).* We conducted the research from 1964 to 2017 so as to determine the chronological evolution of DI.

A total of 934 documents were retrieved. The analysis included journal articles (647) published up to 1985 (inclusive); before this date we

found no articles about DI. Therefore, our study does not include sources such as reviews, letters, news, and other documents that report on this kind of innovation. Journal articles are widely considered the repositories of valid knowledge (Podsakoff et al. 2005; e.g. Ordanini, Rubera, and DeFillippi 2008; Savino, Messeni Petruzzelli, and Albino 2017) and additionally, we included five seminal books related to the theory: two published by the author of the theory (Christensen 1997; Christensen and Raynor 2003) one on creative destruction (Schumpeter 1942), and the other two linked to the hierarchy of needs (Maslow 1954) and the diffusion of innovations (Rogers 2003). The 934 documents were analysed following the steps established in Figure 2.1.

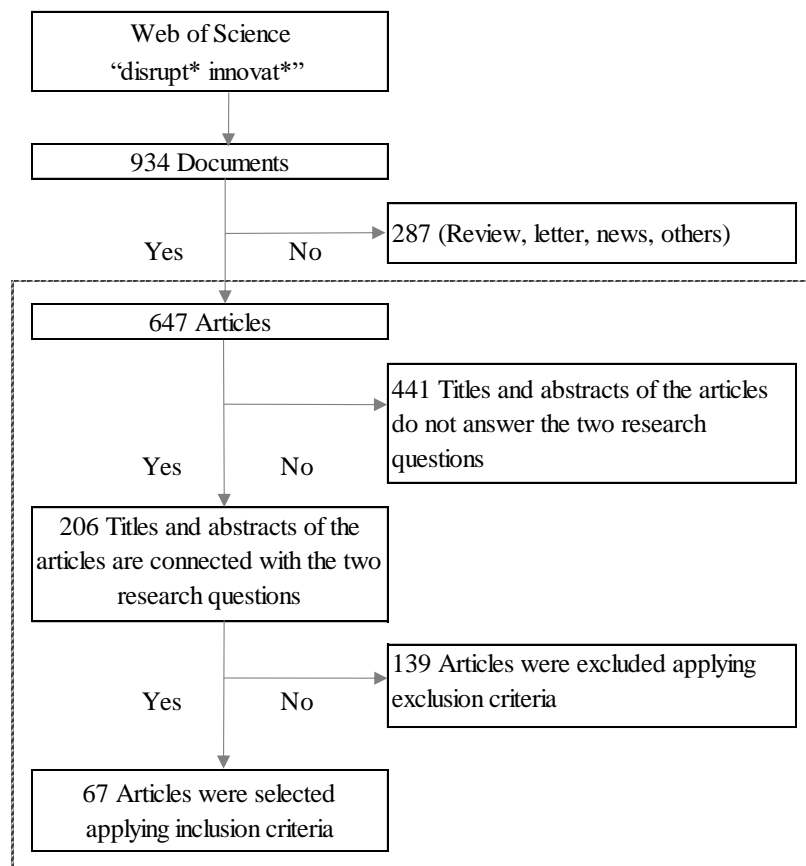


Figure 2.1 Steps followed to select the final sample of articles

All 647 articles constitute reports on DI theory. Within our defined objectives, this work advances the critical review of DI theory, since its

first antecedents and its conceptualisation. Figure 2.2 shows the evolution in the number of articles dedicated to DI theory.

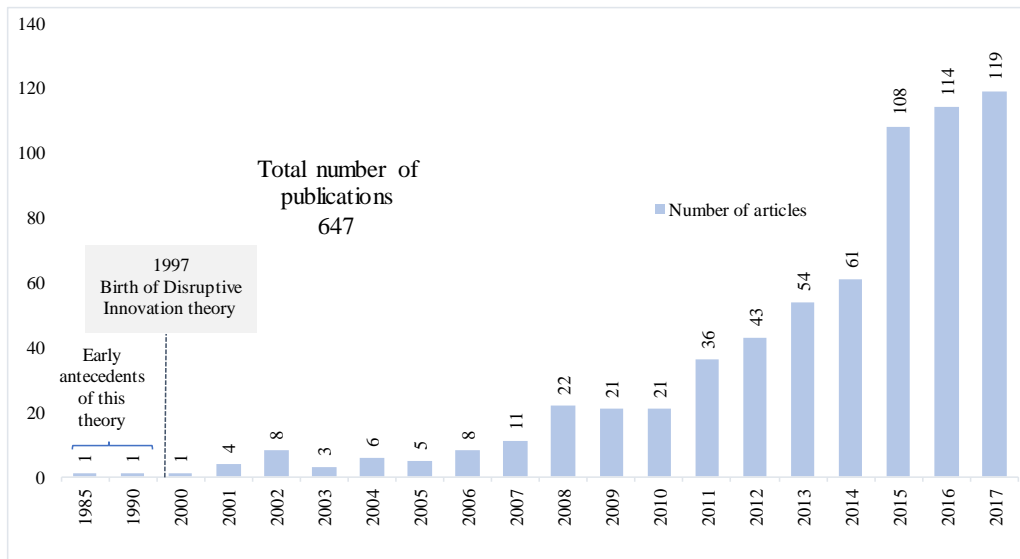
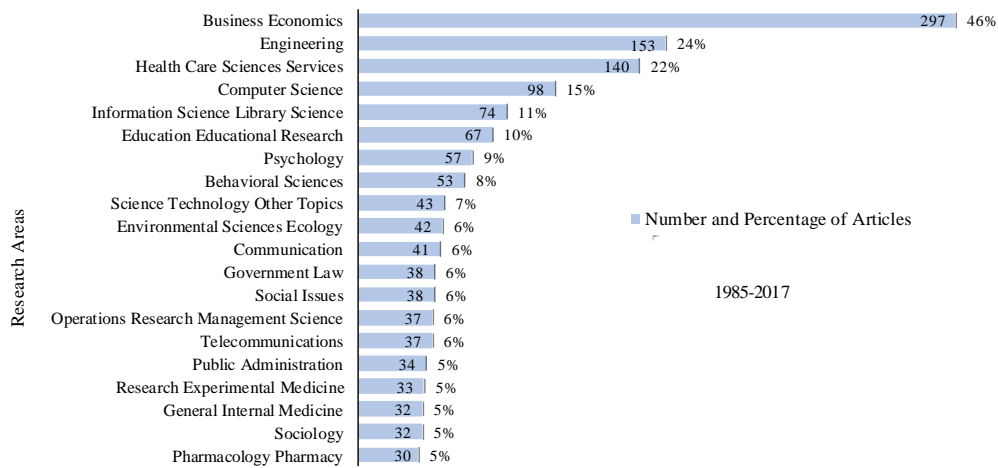


Figure 2.2 Number of articles on disruptive innovation by year

As reported in Figure 2.2, the number of publications has increased markedly since 2011. Indeed, between 2014 and 2017, the number of articles almost doubled in number (from 61 to 119), highlighting the emerging nature of the theory of DI. Figure 2.3 shows the 20 main research areas in which these 647 articles were published.



An article can be connected to two or more research areas because a journal can report on several areas and therefore the percentage of each research area shows the percentage with respect to the total of 647 articles (i.e. 647 represent the 100% in each area).

Figure 2.3. Articles on disruptive innovation by research area

The highest percentage of publications on DI is concentrated in Business Economics 46% (297 from a total of 647 articles), followed by engineering 24% (153 articles). Clearly, DI has greatest relevance in the business world but there are many other research areas that have been receptive to DI.

- d) *Definition of inclusion and exclusion criteria.* When defining criteria for article selection, we did not restrict our search to specific fields, on the understanding that DI theory has been applied to many areas of research. We included all research areas to ensure we captured all definitions, characteristics and so on, to answer our research questions. In selecting the articles, we took both theoretical and empirical studies into account. An iterative process of analysis between the research questions established and theoretical approaches of the revised articles was carried out. From that process selection criteria arise that then were grouped into inclusion and exclusion criteria established in Table 2.1.

Inclusion criteria	Exclusion criteria
DI is the article's main topic	Focus on other kinds of innovation
Focus on the importance of DI	Focus on exploring or referring to examples that may be future examples of DI
Focus on the potential benefits of DI	Focus on assumptions made using DI
Focus on the impact of DI	Focus on unit analysis or a specific topic other than DI
Focus on the opportunities created by DI	(e.g. ecology, medicine, nursing, education, law, technology, social media, big data and social change)
Focus on an analysis of examples of DI	DI is mentioned but not analysed
Focus on factors that influence DI	Not possible to determine actual focus on DI
Focus on potential cases of DI	

Table 2.1 Inclusion and exclusion criteria

The inclusion criteria were all sufficiently inclusive to identify the most relevant articles for responding to our two questions, and the exclusion criteria were exclusive enough to eliminate less relevant articles.

- e) *Applying the inclusion and exclusion criteria.* After reviewing the 206 articles against the inclusion and exclusion criteria, we were left with 67 relevant articles. Of the 67 articles studied here 76% (51) are

empirical studies and the remaining 24% (16) are theoretical studies. Not surprisingly, the majority of the empirical studies 84 % (43 articles) are published in journals related to business economics (business economics 29 % (15), business economics, engineering, computer science, information science library science, education educational research, mathematics, geography, government law, and other topics 55% (28)). The remaining 16% (8) are concentrated in the health care sciences services. It is worth noting that a high percentage of the theoretical articles are published in business research and engineering research areas 81% (13), the rest of the articles 19% (3) are published in health care sciences services, arts humanities other topics, mathematics, social sciences and sociology research areas.

2.3 RESULTS

This section examines the two research questions raised by our research.

2.3.1 What is DI?

In recent years, researchers have used several standards to classify or explain DIs. The importance of accurately understanding DI theory has been debated in many studies. In this section we provide an analysis of the articles reviewed in order to accentuate and reinforce a definition of disruptive innovation. To do this, we have divided this section in three parts: evolution of the theory, types of DI and the main characteristics of this kind of innovation.

Evolution of DI. The theory of ‘creative destruction’ developed by Schumpeter (1942), was the guide for early works focusing on examples related to the role of technology in competitiveness (e.g. Abernathy and Clark 1985; Henderson and Clark 1990; Bower and Christensen 1995; Christensen and Bower 1996). Figure 2.4 shows a timeline of the antecedents of DI theory.

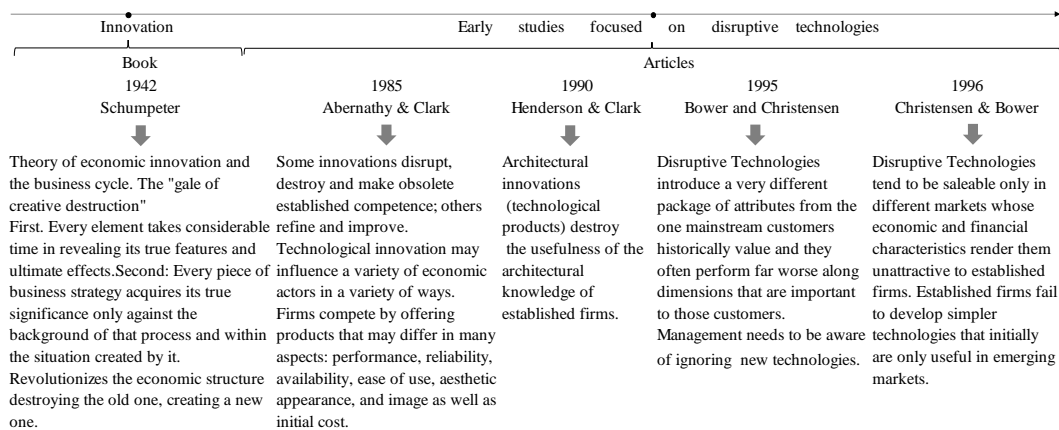


Figure 2.4 Timeline of antecedents of disruptive innovation theory

In 1997 DI theory was proposed by Christensen within a broader technological conceptual framework. He argued that a sort of technological change, called disruptive technologies, was what toppled the industry's leaders. At that time, he argued that the principles of DI show that when good companies fail, it has often been because their managers either ignored these principles or chose to fight them. In early works, he refers to *disruptive technology* as an "innovation that results in worse product performance in relation to mainstream markets" (Corsi and Di Minin 2014). This first definition was focused on examples of technologies whose characteristics were simpler, cheaper, and affordable with good enough performance compared with incumbents' products. A few years later, Christensen and Raynor (2003) changed the term "disruptive technology" to "disruptive innovation" and widened the application of the theory to include not only technological products, but also services and business models (Markides 2006; Yu and Hang 2010; Wan, Williamson, and Yin 2015; Dijk, Wells, and Kemp 2016). Figure 2.5 shows two key milestones in the birth of DI theory.

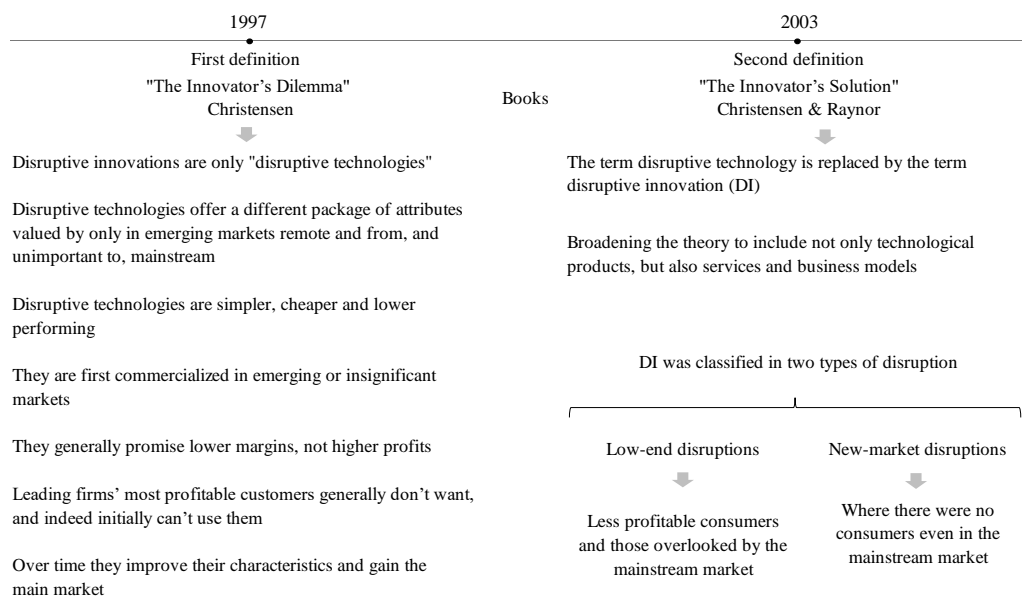


Figure 5. The birth of disruptive innovation theory

Figure 2.5. The birth of disruptive innovation theory

From a historical point of view, as Figure 5 highlights, different elements have enabled us to identify DIs. There are two clear stages in the definition of a DI, each being typified by one key insight. This has led to some confusion, with some researchers employing only the first definition and others the second: for example, in studies referring to a technological innovation, some researchers employ the first definition (the first book focused particularly on disruptive technologies, and some researchers use this term and its definition, where DIs were only disruptive technologies) while others employ the second (DIs are not limited to technologies). The theory has been complemented in its development by other studies, but over time, the same theory has been used to explain all kinds of DIs, resulting in mistakes (Markides 2006). As Christensen et al. (2015) argued, people too frequently use the term loosely to invoke the concept of innovation in support of whatever it is they wish to do and many researchers, writers, and consultants use “disruptive innovation” to describe any situation in which an industry is shaken up and the previously successful incumbents stumble, arguing that this is a much too broad usage. In line with Christensen’s concerns Steenhuis and Pretorius (2017) pointed out that this theory has been widely misunderstood and its basic tenets frequently misapplied. Indeed, the existence of a first and second definition, the understanding of the term

“disruptive” and the complexity of this theory, have all caused misunderstandings.

Table 2.2 shows a summary of definitions, and their evolution, as employed by different researchers working in this field. Our review found 17 definitions of DI. As is seen in the next table, when researchers give a definition of DI, they either quote Clayton Christensen’s theory, or offer their own definition. We also identified three perspectives on these definitions.

Perspectives (1)	N°	Definitions of Disruptive Innovation (DI)	Guiding references
DI Can change the bases of competition	1	DI represents a process where a product establishes itself at the bottom of a market and climbs through this sector to displace competitors	Christensen (1997), Tan et al. (2016)
A process that transforms the market Creator of a new business or market	2	DI is a successfully exploited radical new product, process, or concept that significantly transforms the demand and needs of an existing market or industry, disrupts its former key players and creates whole new business practices or markets with significant societal impact	Assink (2006)
	3	This theory outlines a process through which a disruptive product transforms a market, sometimes to the point of upending previously dominant companies	Guttentag (2015)
	4	DI changes the performance metrics, or consumer expectations, of a market by providing radically new functionality, discontinuous technical standards, or new forms of ownership	Nagy et al.(2016)
	5	The term refers to innovations that create new markets and value networks while disrupting existing ones	Tham (2016)
	6	Theory of change, prioritizes conflict, discontinuity, and constant alterity over sustainability, memory, and community	Levina (2017)

Table. 2.2a. Disruptive innovation definitions

Perspectives (2)	N°	Definitions of Disruptive Innovation (DI)	Guiding references
DI As a low-cost model ("Good enough" performance and at low-cost)	7	DI describes how companies may falter not by falling behind the pace of advancement or ignoring their core consumers, but rather by disregarding the upward encroachment of a disruptive product that lacks in traditionally favoured attributes but offers alternative benefit	Bower and Christensen (1995), Christensen (1997, 2006), Christensen- and Raynor (2003), Schmidt and Droebl (2008), Guttentag (2015)
	8	DI is founded as a low cost model to depose of its competitors operating with a higher cost structure	Markides (2006), Tham (2016)
	9	DI introduces a different set of features, performance, and price attributes relative to the existing products, a combination that is unattractive to mainstream customers at the time of product introduction (due either to inferior performance on the attributes that mainstream customers value and/or a high price)	Govindarajan, et al. (2011)
	10	DI as relevant to an understanding of the dynamics of innovation and the actions by firms in introducing lower-performing, lower-cost products that can gain market share	Weeks (2015), Allahar (2017)
	11	DI is described as: simple, cheap, small, and easy-to-use products or services that cater to the need of the unserved or underserved market and has the potential to increase revenue by developing an altogether new market	Agarwal et al. (2017)

Table. 2.2b. Disruptive innovation definitions

Perspectives (3)	N°	Definitions of Disruptive Innovation (DI)	Guiding references
DI Taking into account technology	12	A DI is a technology, product, or process that creeps up from below an existing business and threatens to displace it	Rafii and Kampas (2002)
	13	DI refers to technological innovations, new products, or new services that require a "disruptive" strategic reaction that often serves to overtake the prevailing dominant technologies or status quo products in a market	Christensen (2006), Crockett et al. (2013)
	14	Disruption should be seen as a process whereby small companies (entrants) are able to challenge established incumbent firms by offering new technology often at a lower price to overlooked customer segments	Christensen et al. (2015), Pérez et al.(2017)
	15	DI is a product that is based on a disruptive technology and delivers superior performance on attributes valued by mainstream markets	Parry and Kawakami (2017)
	16	DI usually commences with complex business models involving sophisticated products and dominant technologies, but with incremental perfection of the product/service and technological improvements to suit diverse tastes, the less dominant, inexpensive product expands its market share and ultimately takes over the market	Rambe and Moeti (2017)
	17	DI as "technology that changes the bases of competition by changing the performance metrics along which firms compete" (Danneels, 2004) and may be capable of radical change, but it is not necessarily a driver of instantaneous change	White (2017)

Table. 2.2c. Disruptive innovation definitions

Researchers do not use the same definition as we can see in Table 2.2. From our point of view, the different perspectives on the definitions of DI can be briefly summarised as three main approaches: 1) DI is a process that has a disruptive potential to transform or induce changes in markets, 2) DI as a low-cost model and 3) DI as a process where the use of technology to deliver a better product is a key issue. This recognition of the role of technology may have arisen because researchers use the first definition of the DI theory or because their studies focus specifically on examples that use technology to develop this sort of innovation. On the whole, all these definitions complement each other, but there is no common definition. Perhaps the complexity of the phenomenon makes agreement difficult.

It is also noteworthy that many researchers agree that DI is a process (Ansari et al., 2016; Assink, 2006; Christensen, 1997; Christensen et al., 2015; Contandriopoulos et al., 2016; Guttentag, 2015; Isherwood and Tassabehji, 2016; Pérez et al., 2017; Tan et al., 2016; Yu and Hang, 2010) not an event, and the process can take a long time, up to decades to unfold (Flavin 2016b). Other researchers take into account the core of this theory, as described by Christensen, and argue that “DI usually starts off as an inferior product but provides value through the application of new technologies and business models that enhance access to a new service or product while disrupting the market” (Lewis 2012; Allahar 2017). Other researchers suggest that DI is possible where a technology is in its infancy and the market is ill defined, leading companies to embark on an iterative market testing process involving the launch of various versions of the product, in order to deliver affordable, innovative, and high-tech products with minimal capital investments (Gurca and Ravishankar 2016).

Despite efforts to bring the definitions in line, no consensus has been reached in the literature. Although various researchers define DI in accordance with Christensen’s proposal, others modify or complement it, adding the conclusions drawn from their own specific studies.

To sum up, based on our review, DI can be seen as a process that takes place over periods of time, which starts in the low-end market or creates a new market to move up toward the mainstream market and high-end market. A

DI does not initially compete with incumbents, but after some time competition intensifies, often resulting in the displacement of the traditional incumbents or in the sharing of the market, although the DI typically enjoys a larger market share, offering products or services with unique characteristics that make it a better choice for consumers. DI can initially only be used in small markets distant from the mainstream market, is disruptive because it can subsequently become fully performance-competitive against established products or services within the mainstream market and can change the behaviours of customers, incumbents and the market. Figure 2.6 illustrates the scope of our definition of DI.

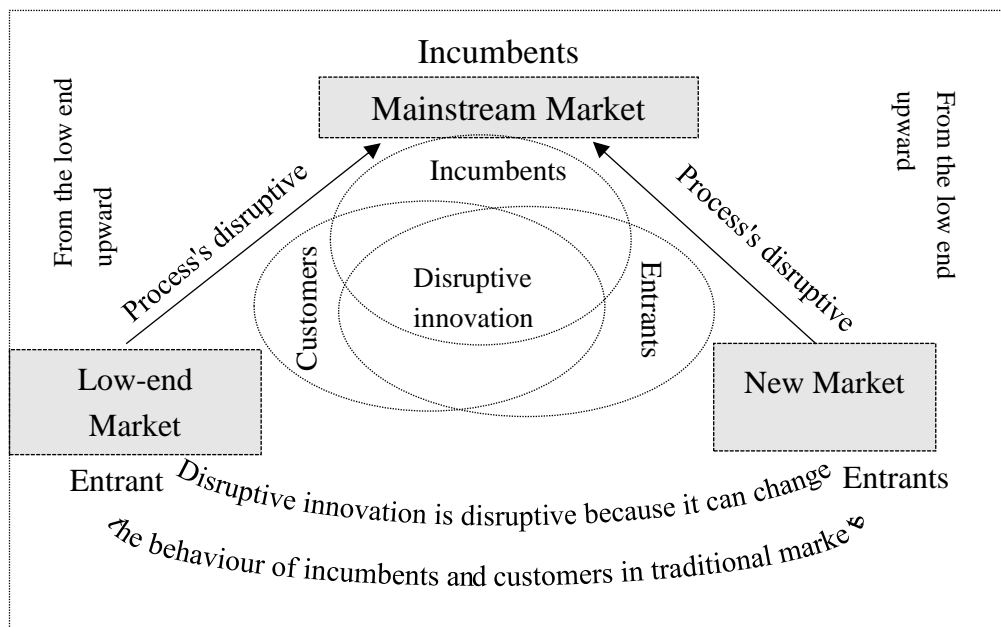


Figure 2.6. Disruptive innovation definition

Types of DI

The literature identifies two types of DI: low-end and new-market disruptions.

Based on these broad types, we argue that:

Low-end disruptions are those that attack the least-profitable and most overserved customers, begin in a low-end market, with inferior performance as regards traditional attributes and by offering a low price and design

simplicity (Christensen 1997; Christensen and Raynor 2003; Govindarajan and Kopalle 2006; Yu and Hang 2010). These innovations are designed for customers for whom the incumbent's offer provides excess functionality at unaffordable prices. Hang et al. (2015) argue that such disruptions are associated with the strategies of opportunities discovery. Incumbents pay less attention to less-discerning customers and typically offer their products/services to their most profitable, more discerning customers. This opens the door to a disruptor, focused (initially) on low-end customers and providing a "good enough" product, to later move up to the mainstream market. This does not result in better product performance; rather, it serves users who are attracted by low prices (Dijk, Wells, and Kemp 2016).

The low-end disruption paradigm does not create a new market, but rather changes the existing market's game; it is based on the existing mainstream value networks and introduces similar products or services at lower cost and price (Chen, Zhu, and Zhang 2017), and that cost is substantially lower (Nagy, Schuessler, and Dubinsky 2016). The first customers are part of the existing market segment with similar performance criteria to mainstream customers but with lower purchasing power (Schmidt and Druehl 2008; Dedehayir, Ortt, and Seppänen 2017). Therefore, customers from the low-end market therefore consider it a good option to accept lower performance at a more affordable price. Here it is also important to consider the factors influencing this innovation, such as cooperation with venture capitalists, external knowledge sources, the dominant position of R&D, and willingness of entrepreneurs to innovation (Chen, Zhu, and Zhang 2017).

New-market disruptions begin with the least-demanding tier and compete against non-consumption, are specifically focused on creating consumption, and are disruptions that create a new value network (Christensen and Raynor 2003). These innovations provide products with a different group of features from the mainstream product (Guo et al. 2016) for customers who "had not owned or used the prior generation of products or services" (Hang, Garnsey, and Ruan 2015) or new users (Dijk, Wells, and Kemp 2016). Dedehayir et al. (2017) argue that, unlike low-end disruptions, new market disruptions do not necessarily compete on lower price, adding that many disruptive changes are hybrids of low-end and new market disruption (e.g., Canon Photocopier). Schmidt and Druehl (2008) refined new market disruption into two types:

fringe-market low-end encroachment and detached-market low-end encroachment.

Govindarajan and Kopalle (2006) describe low-end disruption as being technologically less radical and high-end disruption as being technologically more radical. Here, our focus is on high-end disruption because we believe it can be developed within this type of new-market disruption. This is the less price sensitive segment, providing inferior performance in terms of traditional attributes, at a high price such as in mobile phones (Govindarajan and Kopalle 2006; Yu and Hang 2010). These are products based on a disruptive technology that are initially offered at a premium price to price-insensitive customers served by the dominant technology (Parry and Kawakami 2017). This innovation often results in a major technological breakthrough, a new product, service, or a new business model, and needs long-term strategic planning because it involves inherent high uncertainty (Chen, Zhu, and Zhang 2017). The latter researchers also suggest that factors influencing high-end disruption include government support, external knowledge sources, strategic support, and the dominant position of R&D.

Likewise, Hang et al. (2015) associate this kind of disruption with the creation of opportunities in the market. Innovations that create new markets and an new value networks while disrupting existing markets (Koh and King 2017). A new market will not attempt to disrupt the mainstream market, therefore, its focus is on attracting new consumers or attracting consumers from the existing market whose needs cannot be met by existing products and these customers gradually choose the new market (Chen, Zhu, and Zhang 2017).

The review above has sought to specify the types of DI identified in the literature. Figure 2.7 provides a summary of this typology. In this classification, and for the reasons discussed above, we include high-end disruption within new-market disruptions.

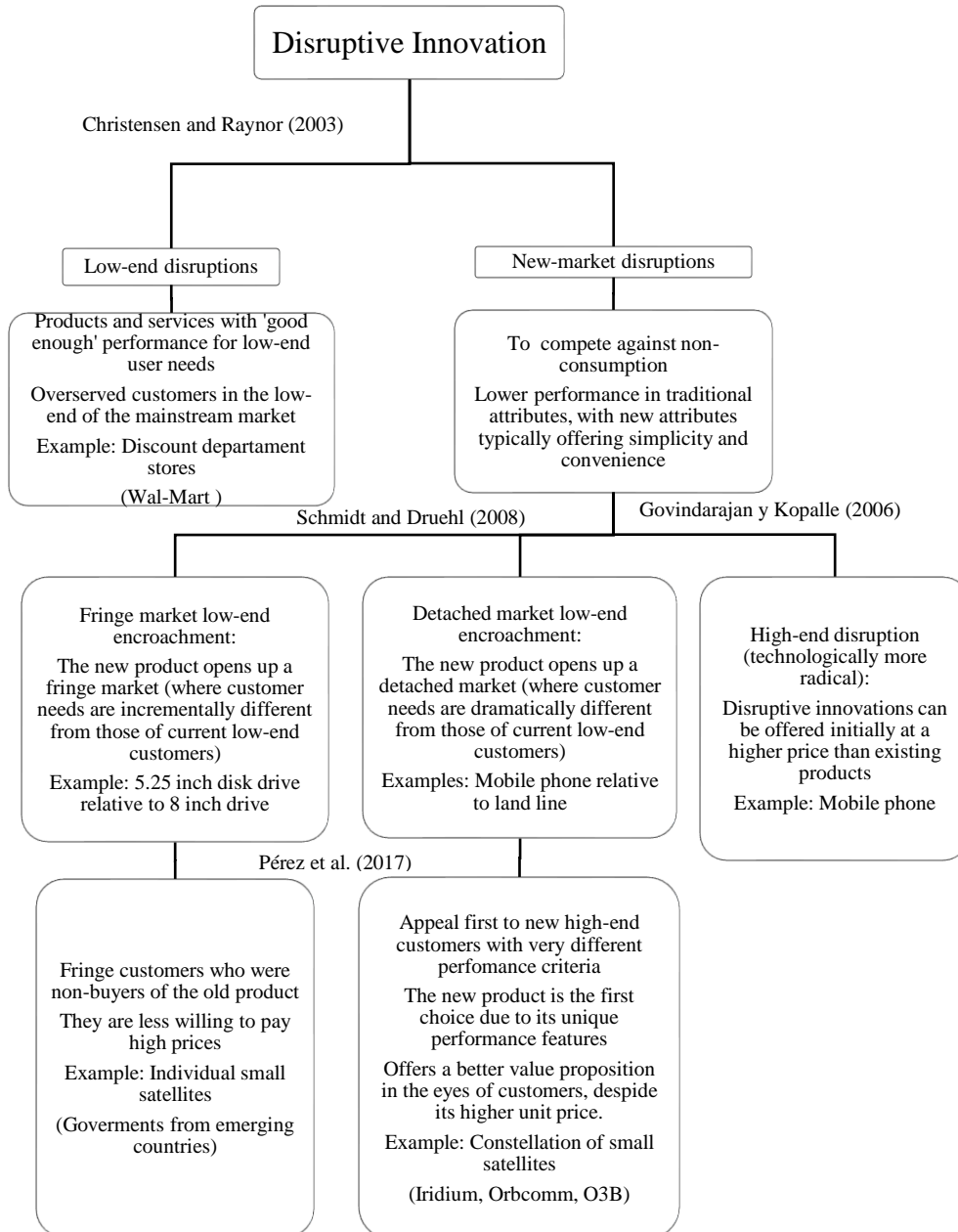


Figure 2.7. Types of disruptive innovation

Based on this typology of DI Table 2.3 shows more examples of each type arising from references in the literature.

Disruptive innovations	Incumbent innovations	Guiding references
<i>Low-end disruptions</i>		
Amazon.com	Traditional bookstores	Christensen and Raynor, 2003
Endoscopic surgery	Traditional surgery	
Minicomputers	Mainframe computer	
Google search engine	Yellow pages	Yu and Hang, 2011
Email	Postal service	
Portable diabetes blood glucose meters	Large blood glucose testing machines	
Airbnb	Hotels	Guttentag, 2015
Bakelite (a synthetic plastic)	Shellac	Dedehayir et al., 2017
<i>New-market disruptions</i>		
Personal computer		Christensen, 2003
Transistor radio, transistor TV, Walkman, MiniDisc and Netflix		Christensen, 2015
TiVo (a start-up firm that pioneered the Digital Video Recorder)		Ansari et al., 2016
5G technology		Suryanegara, 2016
Uber		Tham, 2016
Microwave Oven		Dedehayir et al., 2017
E-books		Parry and kawakami, 2017

Table 2.3. Some examples of disruptive innovation

Characteristics of DI

In recent years, many studies involving examples of DI have been published and many studies have identified their characteristics. For instance, Hadengue et al., (2017), Flavin (2016b), and Corsi and Di Minin (2014) highlight the characteristics of the disruptive technologies given by Christensen, who defines them as being “typically cheaper, simpler, smaller, and, frequently, more convenient to use than the existing product” (1997). Similarly, according to Tan et al., (2016) DI includes simpler products and services, smaller target markets, and lower gross margins. For Shin (2017) DI can never be achieved without lowering the cost of parts, reducing manufacturing costs and shortening the development time. DI is therefore less expensive, simpler, and more convenient (Kaissi et al. 2016). Usually, the disrupter offers lower performance and less functionality at a much lower

price (Rafii and Kampas 2002; Wan, Williamson, and Yin 2015). Other researchers consider two particular characteristics: lower cost and lower performance (Yu and Hang 2010; Weeks 2015; Allahar 2017). Steenhuis and Pretorius (2017) argue that “characteristics for disruptive technologies are that the capabilities initially are inferior to what incumbents use and that they deal with low-end customers or new market.” DI must be affordable with good enough performance (Yu and Hang 2011). Others only consider one main characteristic, DI initially lacks the performance levels necessary to compete with the incumbents (Dedehayir, Ortt, and Seppänen 2017).

Some studies specifically emphasise the characteristics of disruptive *technologies*, as the examples they provide are of this nature. Consistent with this notion, Yu and Hang (2011) found 11 categories (in this article we called them characteristics) examining relevant examples of technological DIs: small size, light weight, less power consumption, portability, customisation, ease of usage/design/production, time-saving, cost reduction, augment disruptive features, explore applicability and other unique values for specific products.

By way of summary, Agarwal et al. (2017) published an article in which they highlighted 32 characteristics of DI: accessible, advanced, affordable, alternative, basic, better, cheap, convenient, cost-effective, customised, environmental, flexible, frugality, improved, inexpensive, inferior, large-scale, low-cost, low-performance, modest, new, new market development, niche, no-frills, radical, resourceful, simple, small, social, sufficient, tailored and valuable. These characteristics were drawn from various examples and are useful in order to identify examples of this kind of innovation. Clearly, however, there are some characteristics that might not be measurable. It is thus necessary to evaluate characteristics among examples through new research.

Table 2.4 illustrates the identified characteristics of some examples of DI.

Low-end disruption		New-market disruption	
Example	Characteristics	Example	Characteristics
Bakelite	Available Ease of use Flexible Inexpensive	Netflix	Accessible Ease of use Immediate access Inexpensive Simple Other unique values for specific functions
Airbnb	Accessible Convenient Inexpensive Flexibility of location Variety of accommodation options	Personal computer	Available Ease of use Small size Portability Tailored to specific functions

Table 2.4 Characteristics of four disruptive innovations

On the whole, all these characteristics contribute to providing a clearer identification of DIs and are helpful for attracting a mixed market composed of a new market, low-end market, and, over time, a mainstream market. Managers aware of these characteristics are likely to adopt a new dominant logic that pursues new strategic actions.

2.3.2 What business behaviours are adopted by the actors associated with DI?

The literature cited allows us to identify the behaviours adopted by the actors associated with DI. Therefore, in this section, specific attention is given to these behaviours. We divided our analysis into two sections: the first analyses and compares the behaviours adopted by incumbents and entrants, and the second identifies customer behaviours.

Behaviours adopted by incumbents and entrants toward DI

The process of DI considers the rivalry between the incumbent and the new entrant (Dedehayir, Ortt, and Seppänen 2017). Managers in incumbent companies have often misunderstood the value of innovations by rivals (King and Baatartogtokh 2015). We provide a summary in Table 2.5 of the findings described by Christensen and others involved in the field in order to illustrate the respective behaviours of incumbents and entrants who seek to conquer the main market (Govindarajan and Kopalle 2006; these include the references cited in Table 2.2, plus Gholampour 2017; Steenhuis and Pretorius 2017).

Incumbents' behaviours	Entrants' behaviours
Have the resources, structure and customers of the mainstream market and lead the market	Aware of inability to compete with incumbents
Focus on chasing higher profitability among the most demanding, and usually most profitable customers, exceeding or ignoring the needs of low-end segments	See an opportunity in the least-profitable segments (low-end customers), and overlooked low-end segments, developing a product or service that offers a better value proposition
See the low-end segment as a small market and less profitable	Focus on understanding unmet needs of customers of given segment niche
Focus on improving their products or services for their current customers	Their products or services are, initially, inferior in those characteristics valued by mainstream customer or under-perform for existing customers
Are dependent on the dominant customer segment	Are initially independent on the dominant customer segment
See that their customers are not attracted to the under-performing products or services of entrants, so do not focus on innovations of this kind	Go unnoticed by potential competitors
Unaware of the potential threat of DI, keep using their long-established capabilities	Over time improve their products or services and finally deliver the performance that mainstream customers require
Begin to lose their customers, when the price and performance of the entrant's offer make it acceptable to mainstream customers or it is deemed comparatively better	Begin to move up market to become competitive with market leaders
Are forced to share the market, lose their leadership and even exit the market	Are the new incumbents, offering products or services that are the best option for customers in the entire market

Table 2.5. Behaviours of incumbents and entrants in the disruptive innovation process

Analysis of incumbent behaviour

Established companies do not see early examples of DI as a threat because they are not yet competitive and cannot satisfy the needs of the mainstream customers; but, over time, improvements in their quality make them competitive and, eventually, they establish themselves as the first choice of the mainstream customers. Organisations offering DIs are rarely perceived as serious threats by dominant incumbents as they tend to be new entrants to the market (Kaissi et al. 2016). Indeed, many companies are not organised to give new ideas a chance, to recognise trend breaking points in the market, to adapt quickly to changing market circumstances, or to cause market changes in the first place (Markides 1999). Incumbents need to be aware of DIs as soon as possible, since their early identification allows them to be more flexible or to change their plans and invest in a different way. DI requires flexibility, which means exploratory plans can be implemented and enough resources assigned to develop disruptive products or services. This being the case, DIs represent both a major challenge and an opportunity for many incumbents, who may have overlooked or misunderstood the importance of an emerging threat.

DIs result in business transformations in an organisation or industry and lead to major changes in current business processes that can displace existing dominant products on the market (Said and Adham 2016). With the emergence of DI, every industry ecosystem undergoes major transformations and the best strategy is welcoming DI and exploiting it (Gholampour 2017). To avoid being dethroned, Pérez et al. (2017) argue that incumbents need to identify new opportunities and develop plans that specifically focus on learning or discovery, building necessary partner bonds and disseminating information. Incumbents need to develop strategies regarding the unmet needs of non-customers without neglecting their own customers. It is worth noting that managers have to develop new professional competencies through long-life personal development and education (Mohelska and Sokolova 2016), all the more so because DIs demand gathering knowledge and experimenting with new ideas (Kranz, Hanelt, and Kolbe 2016).

In relation to the satisfaction of current customers and the dissatisfaction of non-customers, Vecchiato (2017) suggests considering Maslow's (1954)

hierarchy of needs, which highlights the fact that most people during their lives experience the need for both social relationships (love, friendship, intimacy) and for esteem (achievement and results, status and recognition, respect from others). We point out recognition, because one type of DI (low-end disruption) emerges when incumbents overlook lower customers, that is, customers who feel that their needs are not being satisfied with the incumbent's products or services, and on the other hand, we argue that status and recognition, achievement and results can be associated with new-market disruption (high-end disruption) because customers can feel identified with a product or service that responds to these needs.

Another factor with regards to DI is that incumbents need to explore the ways in which they can benefit from offering lower prices to costumers. In the business world, the goal of maximising shareholder value or maximising profits, often stymies innovations when firms are faced with DI (Yeh and Walter 2016). Parry and Kawakami (2017) suggest that "a more effective approach might be to educate existing stakeholders about the ways they can benefit from lower prices to consumers." Industries that are currently based on higher volumes and low cost are susceptible to disruption (Steenhuis and Pretorius 2017). The uncertainty over the revenues and profits associated with DI is likely to be one reason why incumbents do not support innovation of this kind. Decision-making processes for sustaining innovations are based on more precise data and accurate estimations of financial returns, however, DIs are very different, as neither revenues nor costs can be known, and innovation management based entirely on detailed plans and budgets is doomed to end in failure (Pérez, Dos Santos Paulino, and Cambra-Fierro 2017).

A DI does not always imply that entrants or emerging business will replace incumbents or traditional businesses, for example small vs large satellites (Yu and Hang 2010; Martin-Rios and Parga-Dans 2016; Pérez, Dos Santos Paulino, and Cambra-Fierro 2017). Not all firms succumb to disruption, however; some are able to regain their dominance (Yeh and Walter 2016). Dedehayir et al. (2017) argue that the new ecosystem can completely substitute for the incumbent, as was the case for the Bakelite vis-à-vis the Shellac ecosystem and in other cases, however (e.g. Canon versus Xerox, and microwave ovens versus traditional stoves), it appears that new and the

incumbent ecosystems can co-exist for prolonged periods of time without substituting each other completely. In some cases, incumbents can “disrupt the disruption” by emphasising a new set of product attributes (Parry and Kawakami 2017). During DI, creative development can result in the addition of a functionality that raises the innovation’s value, but which costs more than the customers are willing to pay (Kranz, Hanelt, and Kolbe 2016). Disruptors are not necessarily start-ups or small firms (Pérez, Dos Santos Paulino, and Cambra-Fierro 2017) and DI can just as well be developed by incumbents.

Identifying a DI is far from easy for incumbents as is their having to counter this new competition in the market when entrants start to conquer their mainstream customers with a DI. Hence, in this process an incumbent concerned with preventing a possible encroachment and dethronement by a DI can resort to the following strategies: identify the context of its inside market, measure the impact of an innovation originating from a low end or new market, increase control over its market share and mitigate the impact of a DI by creating an in-house R&D unit to develop products or services that reflect an in-depth understanding of both customers and non-customers.

Analysis of entrant behaviour

The main aim of entrants is to be accepted by the low-end or new market; they do not pursue big profitability. Entrants with DI, regardless of just how profitable the market might be, are initially interested only in testing whether their innovation is enough to be accepted and to survive. Entrants are capable of pursuing emerging growth markets, because their values can embrace small markets, their cost structure can admit lower margins and in the initial stages, their resources are largely its people (Isherwood and Tassabehji 2016). DI provides an opportunity for SMEs to surpass the incumbents (Chen, Zhu, and Zhang 2017). Christensen’s category of efficiency innovation means it is possible “to do more with less” (Flavin 2016b) and entrants know full well how to apply this. As DI offers new characteristics (cheaper, smaller or easier to use) that are appreciated by the new or the low-end customers, incumbents don’t bother to follow in its steps and an entrant with DI enjoys its growth without any threats (Ruan, Hang, and Wang 2014; Zhang and Zhang 2017).

As soon as entrants begin to be accepted they improve their innovation so as to conquer the rest of the market (mainstream market), although they maintain the initially unique characteristics (simple, easy to use, price) that allowed them entry to the first market and to compete with existing business and to offer great opportunities for new profit growth. Entrants initially do not want to compete with incumbents who consider their innovations inferior. These innovations were disruptive in that they didn't address the next-generation needs of leading customers in existing markets (Gholampour 2017).

Entrants are often start-ups-or entrepreneurs with few resources. As a result, the risk is lower. The resource dependencies of entrants compared to incumbents also provide a clear difference in entrepreneurial incentives (Berglund and Sandström 2017). A company may appear mostly insignificant today; but may be poised to become much larger in a very short period (Guttentag 2015). Entrants are freer to pursue their visions and to engage in entrepreneurial experimentation, consequently, they are also more inclined to interact with multiple potential customers (Berglund and Sandström 2017). Disruption can take time – exactly how long depends on each specific case.

Disrupters find a way to turn non-consumers into consumers (Gholampour 2017). Disruptors need to be more accommodative even as they attempt to transform the existing ecosystem (Ansari, Garud, and Kumaraswamy 2016). Entrants succeed because, as dominant products evolve, they grow and become ever more sophisticated and expensive, until they exceed the needs of most customers (Contandriopoulos et al. 2016). Entrants have the capacity to meet customer's need for minor conditions or create new needs. Disruption works not by confronting established practice, but by doing something new (Flavin 2016a). Another point to consider is that DI does not always imply that the entrant business will completely replace the incumbent business and the winners will take all (Yu and Hang 2010).

Customer behaviour towards DI

Given that the success of any innovation depends on customer acceptance, in this section we shift our attention to address the question of why customers accept DIs.

In line with Christensen's initial theory, DIs offer different characteristics to those historically valued by mainstream customers. In the beginning, DIs are less valuable than those supported on the current market, but they are offered at a significantly better price, at least for customers willing to accept lower quality, or else they incorporate a new value proposition that make them unique.

Under this approach, mainstream customers are unwilling to use a disruptive product in applications they know and understand (Bower and Christensen 1995; Suryanegara 2016). They feel comfortable and satisfied with the product or service provided by the incumbents and, so do not bother try out something new, let alone of lesser quality. Customers are empowered to share goods and services. For instance, the internet as a DI, means that customers are well informed about the characteristics of different products or services and, as such, it is an effective tool for customer empowerment, but there is a niche of customers who are dissatisfied with the price or with certain characteristics of the incumbents' offer. Levina (2017) argues that corporations anticipate consumers "needs, wants, and whims" and firms validate their desires and actions. Performance oversupply attracts customers to products that pay greater attention to price or new criteria that have, up to that juncture, been considered secondary.

As a consequence, DIs tend to be an answer to customer dissatisfaction because they appeal to customers from low-end markets who demand lower prices and prefer to buy simpler products or services; on the other hand, DIs can appeal to new consumers who previously consumed neither in the mainstream nor in the low-end markets, meaning that they experience the innovation for the first time. DIs have very different characteristics from the products or services available previously, which are appreciated by customers, as DIs improve while retaining their main characteristics of affordability, simplicity, price, and so on. These characteristics and their enhancements are key in order to seduce mainstream customers. In other

words, DIs upset the market by combining low prices with high-quality and other unique characteristics that make them the best option on the market. As a result, the consumption of DIs is more affordable and available at all levels, and so they are less hierarchical.

Table 2.6 summarises, and contrasts customers behaviours based on our review of this framework.

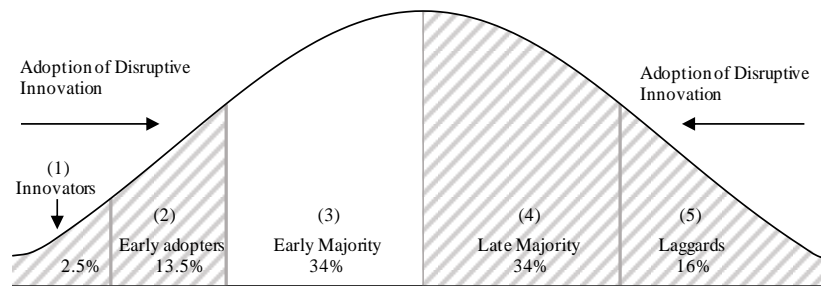
Customers from low-end market	Customers' behaviours	
	Customers from new-market	Customers from mainstream-market
Are over satisfied by existing products or services	Are attracted by new products or services in the market	Reject products or services with good enough performance
Are less sophisticated and less demanding on quality	Have a willingness to experiment and keep trying new generations of products or services	Are more demanding on quality and less demanding on price
Prefer to buy affordable products or services with good enough performance	Discover new needs	Buy products or services with reasonably high quality and appreciate the improvement of the performance of the products or services that they are used to buying
Seek the best satisfaction at the lowest possible price	Don't consider necessarily the products or services' prices to be accepted	Consider the incumbents' well-respected reputation and have reliability issues about adopting innovations that are not from incumbents
Are considered the least profitable segment of the market	Encourage a broad experimentation with customers from low-end market and mainstream market	Are considered the most profitable segment of the market
Are the first in accepting low-end disruptions	Are new consumers of new-market disruptions	Only accept disruptive innovations when their quality and new characteristics are better than traditional products or services
Satisfy their unmet needs into the market	Encourage new requirement and challenges	Have enough reliance on disruptive innovations and are willing to buy such innovations

Table 2.6. Behaviours of customers in the disruptive innovation process

DI requires customers to be willing to try out the innovation. New models and technologies cannot be disruptive in an environment that is resisting

change (Hans et al. 2017). New technologies often require altered behaviour on behalf of customers, end-users and other critical stakeholders in order to be adopted (Berglund and Sandström 2017). The success of DIs depends on customers being willing to change their preferences, take a risk or satisfy their curiosity and whims.

Therefore, a successful DI requires a receptive audience. Everett Rogers (2003) in his seminal book on “Diffusion of Innovations” argues that “*Innovativeness* is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than the other members of a system.” In this approach consumers are categorised according to the point that an innovation is adopted. Rogers proposed five adopter categories: (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards. Figure 2.8 highlights the main characteristics of each category. Users play several roles in the information and advice about the innovation dissemination.



- 1 First to adopt the innovation, they are venturesome, develop cosmopolite social relationships with capacity to absorb possible losses from an unprofitable innovation, ability to understand and apply complex technical knowledge and able to cope with a high degree of uncertainty about an innovation. They have a desire for the rash, the daring, and the risky. Play a gatekeeping role in the flow of new ideas into a system.
- 2 Visionaries, they are localites more than any other group, and have the highest degree of opinion leadership in most systems. Potential adopters look to early adopters for advice and information about an innovation. They help trigger the critical mass when they adopt an innovation.

- 3 Adopt new ideas just before the average member of a system. They may deliberate for some time before completely adopting a new idea. They follow with deliberate willingness in adopting innovations but seldom lead.
- 4 Adopt new ideas just after the average member of a system. Adoption may be both an economic necessity and the result of increasing peer pressures. Innovations are approached with a sceptical and cautious air. Their relatively scarce resources mean that most of the uncertainty about a new idea must be removed before the late majority feel that it is safe to adopt.
- 5 They possess almost no opinion leadership. Many are near isolates in the social networks of their system. Their innovation decision process is relatively lengthy. Their resistance to innovations is because their resources are limited, and they must be certain that a new idea will not fail before they can adopt. The laggard's precarious economic position forces the individual to be extremely cautious in adopting innovations.

Figure 2.8. Roger's innovation adoption curve - 2003

In line with Rogers' categories, we argue that initially four adopter categories can be associated with DIs:

Innovators. Given their interest in new ideas, innovators are active information seekers about new ideas and have the ability to understand and apply complex technical knowledge. They are willing to accept an occasional setback when a new idea proves unsuccessful. Initially a DI is not a high-quality product or service, but it introduces new characteristics or creates new needs.

Early adopters. Govindarajan et al. (2006) suggest that in this category high end disruption (innovations that can be offered initially at a higher price than existing products) “technologically radical innovations primarily appeal to the early-adopter category at the time of product introduction and over time appeal more to the mainstream market.” Rogers (2003) suggests that innovators and early adopters start using a new idea on a more tentative basis than do laggards. Sometimes the knowledge of an innovation creates a need for it. Customers who are selective, accept the price and begin adopting the DI.

Laggards. Because low-end disruptions tend to focus on customers with lower socio-economic status, laggards are more sensitive to price, and many are overlooked by the market. They are more resistant to change and harder to influence but they are often the first to adopt a DI. A detached market may also be found in this group. Taking into account that new-market disruptions compete against non-consumption (Christensen and Raynor 2003). A DI can change their behaviour markedly.

Late majority. This group adopts DIs due to their limited resources. DI introduces a lower price and new characteristics, so this adopter category does not have to wait very long to feel it is safe to adopt. Customers find it convenient to use the innovation.

Consistent with these approaches, it is worth noting that the four adopter categories above are the first to adopt DIs. DI breaks Rogers' order of adopter categories its introduction can, to quote Said and Adham (2016) “create disorder in the market.”

The availability of a low-cost product and the presence of many first-time consumers with a desire for experimentation (Wan, Williamson, and Yin 2015) reduce customer indifference and scepticism, as they are being seduced

by its inherent characteristics: ‘ being good enough’, low price, simple, and easy to use. Customers are thus able to do something they had not been able to do before (Flavin 2016a). As such, the risk is low, which makes acceptance much easier for most adopters. The striped areas in Figure 8 represent the initial adopters of a DI.

In the case of the early majority, one of the five adopter categories, are the last to adopt DIs as their innovation-decision period is relatively longer than that of the other four adopter categories (i.e., the innovators, the early adopters, the laggards and the late majority). As noted in Figure 8, the “early majority may deliberate for some time before completely adopting a new idea,” and their resistance to DIs is because they embrace an innovation as and when they understand how it fits into their lives and can appreciate the benefits and *quality* of the innovation. This category can be associated with mainstream customers.

However, the key issues affecting innovation adoption also need to be examined in different contexts. DI requires taking into account issues such as consumer lifestyle, consumer perceptions and consumer behaviour. Parry and Kawakami (2017) argue that consumer preferences play an important role in the DI adoption and Zhang and Zhang, (2017) claim that it is knowledge.

2.4 DISCUSSION

The purpose of our article is to provide a better understanding of DI theory, offering several significant insights for researchers and practitioners. Our analysis of DI has been developed through a step-by-step process in order to contribute to a more effectively understanding of important aspects concerning DI.

We have answered to our two research questions: (1) What is DI? and 2) what business behaviours are adopted by the actors associated with DI? In other words, the analysis presented herein highlights the evolution (antecedents and definitions), types, characteristics and behaviours of incumbents, entrants and customers with respect to DI theory. Thus, this work can help researchers and managers understand what is meant by a DI and it could be

helpful for them to keep abreast of the most important recent lines of this theory.

In this study, we have examined the antecedent of this theory and clearly identified two key milestones related to the birth of it. However, concerning the definition of DI and based on our analysis of 17 definitions, grouped into 3 approaches: as a process, low-cost model, and the role of technology to develop DIs, a consensus has yet to be reached. Many studies apply either Christensen's first or second definition, while others mix the two and add particular specifications from their own study, depending on the examples they analyse. Additionally, the meaning of the term 'disruptive' is widely used, but little regard seems to have been paid to the core tenets of this theory. Despite these inherent problems, our analysis provides a definition of DI. There is no doubt that unambiguously defining a DI is essential for both academic and practical reasons (Nagy, Schuessler, and Dubinsky 2016).

On the other hand, we described a typology of disruptions: low-end disruption and new-market disruption, in order to identify whether a DI tends to focus on an underserved market or create a new consumption. Likewise, this research identified relevant characteristics of DI, Christensen (1997) defines them as being "typically cheaper, simpler, smaller, and, frequently, more convenient to use than the existing product" but there are many others. Up to 32 characteristics were identified by Agarwal et al. (2017). All of these characteristics have important implications for business strategy and innovation management. Managers could use this information so as to develop or to identify examples that present disruptive potential and rethink their strategies for responding to DI.

Our analysis also identified the behaviours adopted by incumbents, entrants and customers in DI processes. With the advent of a DI, more and more incumbents are forced to change their business models and to move away from their traditional way of thinking altogether. Several important behaviours of incumbents were analysed, which are useful for explaining challenges, organizational changes and opportunities that emerge when incumbents are faced with a DI. They need to re-examine their role respect to the unmet needs of non-consumers and the satisfactions of current customers. They must be constantly monitoring their competitors as well as

developing new innovations, although some existing sectors or individual incumbents are likely to resist any disruptions to their market.

Entrants offering a DI compete with incumbents, winning larger customer shares by offering a lower price, better performance, and a faster, more convenient, more effective and more customised service or product. A DI can be better than the existing products or services, and not just for one group of customers, but for all, or nearly all, customers. DI first wins over the least demanding customers (low-end disruptions) and/or compete against non-consumption (new-market disruptions) and over time successfully persuades the most demanding. Indeed, the role played by customers is critical in the DI process, and here the reaction of product users is fundamental. Customers consider a DI with its unique characteristics as their first choice and so break with traditional consumer behaviour.

Our critical literature review examined the behaviours of customers from low-end market, new-market and mainstream market to understand in each case why these customers prefer to choose a DI. As DI requires a receptive customer, following Rogers (2003) we identified that four adopter categories can be associated with DIs: innovators, early adopters, laggards and late majority. These behaviours and categories associated with DI can help managers to rethink their strategies for responding to requirements of customers. To satisfy customer demands, firms need to produce more products or services that closely meet the needs of customers. Challenging the firms to produce more creative solutions in order to respond to customer problems, wants, whims and suggestions. A deep knowledge of customer behaviours can help firms to develop new strategies in efforts to satisfy unmet needs of customers.

In short, as this innovation is adopted, many businesses are put under pressure to demonstrate their capacity to compete and survive in a global economy. Thus, DI changes the traditional behaviours of customers, incumbents and the market. Firms become aware that the DI is associated with discovery and the creation of opportunities and that it represents a call for action and change, if they hope to be able to explore the opportunities for offering the best product or service. DIs involve time, cost and performance, new rules, new companies and new challenges. Therefore, DI impacts on a firm's performance, effecting people, society and financial performance, since it

satisfies the unmet needs of non-consumers or creates new needs, by tying its innovation to exponential growth and falling costs.

DI comes to replace or to change traditional management decisions and, so, managers have to develop new skills, one of which is the ability to determine what is technologically possible and what is culturally acceptable in their business sector, that is, the need to provide insights into the gap between technology, customers preferences, government regulation, and culture. DI requires that business models be flexible; it is not only incumbents who are unwilling to change, but customers too.

The findings show that this theory can be identified, but it is complex, most likely due to the complexity of the phenomenon. Overall, our results open up a clear and comprehensive picture of DI theory. It will provide readers with significant and thoughtful material that illustrates the challenges and the rewards of striving toward DI and cultural practice in innovation.

2.5 CONCLUSION

DI involves a paradigm shift in the way business is done, transforming many businesses, forcing incumbents to take into account market segments that they previously ignored, and to take seriously rivals who at the outset appear so insignificant that they do not constitute any kind of threat. DI pushes to set up new business models and to review or re-invent ongoing business in order to survive and grow. As business environments are subject to constant change, companies in highly competitive markets face many challenges, as well as opportunities, and increasingly fierce competition. One of the major issues for incumbents and entrants is to develop DI and thus avoid being unnoticed in the market. Contrary to their expectations of customers in the mainstream market (who look for high quality in products or services, and for whom the price is apparently less important), DI surprises them and seduces new customers, in some cases offering a high price, high quality and unique characteristics, and in others less quality, enough performance, lower price and unique characteristics (in this case the quality improves over time). Customer resistance to DI is thus too low. The impact of DI cannot be ignored, and it has become a critical concern for both researchers and practitioners.

The purpose of this article was to carry out a critical review so as to understand what DI is. In doing so, we examined 67 articles from the Web of Science, from 1964 to 2017. Our research highlights the various insights into this theory, including its origin, evolution, and current knowledge. Based on the critical review presented in this article and the analysis provided, Table 2.7 briefly summarises a list of potential approaches to this theory and notes some possible features for consideration, as mentioned above. This table allows the reader to understand the potential directions of this innovation from a wider perspective.






Disruptive Innovation			
A process			
Customers	Entrants	Incumbents	Market
Are less complex Are dissatisfied with current products or services Are interested in experiencing new things Are more demanding on price Are simpler Are risk takers Start with a small number of customers, growing over time to conquer the majority of customers From low-end customers to middle-end, high-end customers	Focus on a deep understanding of unmet needs among a group of customers or create a new one Completely change the traditional business model Discover opportunities Use low capital investment Products or services: From low-performance to middle-high performance From low-income to middle-high-income	Consider this kind of innovation to be inferior Focus on current customers, preferring traditional products or services Exceed the needs of some segments or ignore the needs of others	Puts into practice the maxim that “less is more” Encourage new actors Induce changes in the market Has few or no competitors From low-end market to middle-end, high-end market Finally, the innovation is widely accepted in the market
			
The most popular with consumers	Gaining customers and challenging the dominance of strong companies	Lose most of their customers because they do not see the threat of disruptive products or services	The most popular in the market

Table 2.7 Summary of potential approaches to disruptive innovation

The findings of this research indicate the need for more studies on the meaning of DI, in order to reinforce and reduce the state of ambiguity of this theory within the academic field. This article encourages future research opportunities and moves the discussion of this theory forward, as many researchers from different disciplines currently struggle to identify and develop in-depth knowledge of this type of innovation, and it offers answers as to why firms need to change their business goal from maximising profits to satisfying consumers.

**CHAPTER 3 |  MEANING AND
RELEVANCE OF
DISRUPTIVE
INNOVATION TO
SPANISH
INCUMBENTS: A
QUALITATIVE
RESEARCH STUDY**

CHAPTER 3

MEANING AND RELEVANCE OF DISRUPTIVE INNOVATION TO SPANISH INCUMBENTS: A QUALITATIVE RESEARCH STUDY

Abstract

Perusal of the literature on disruptive innovation (DI) reveals a pressing need to understand the influence of this type of innovation on incumbents' activities, for it threatens their leadership, breaks the rules in many industries, and its influence does not seem to have geographic borders. The role of top managers is critical in order for incumbents to develop this type of innovation, but we know little about the way they approach the matter. To address this gap, our paper uses face-to-face interviews with a sample of 20 incumbents located in Spain. The findings suggest that disruptive innovation is popular and attractive for incumbents but there are many challenges due to a lack of understanding of this theory. This study contributes to the literature by showing (1) how DI influences incumbent activities; (2) the managerial implications and (3) approaches that should be taken into account in order for incumbents to achieve disruptive innovation, as well as providing new insights on this theory in the context of incumbent environments.

3.1 INTRODUCTION

Disruptive innovation (DI) has drawn the attention of scholars and practitioners because it offers so many examples of major revolutionary changes in the business world, which have had a huge impact on management practices. What is more, DI has been viewed as making a business “agile” and effective (Taylor 2017), as a powerful means of developing, broadening new markets (Govindarajan and Kopalle 2006) and exploiting a broad variety of new opportunities (Pérez, Dos Santos Paulino, and Cambra-Fierro 2017). Other studies consider DI to be a business model problem (Markides 2006; Zhang and Zhang 2017) and Hopp et al.(2018a) argued that disruption is a multifaceted phenomenon. In any case, DI opens doors to opportunities and challenges for current businesses and future generations of new business models.

Although there is still considerable ambiguity regarding the definition of DI, several studies have addressed the issue (Govindarajan and Kopalle 2006; Yu and Hang 2010; Christensen, Raynor, and McDonald 2015; Agarwal et al. 2017; Christensen et al. 2018; Hopp et al. 2018a; Hopp et al. 2018b; Petzold, Landinez, and Baaken 2019; Martínez-Vergara and Valls-Pasola 2020) and the common conclusion is somewhat paradoxical: more studies on the definition of DI are needed due to the complexity of the phenomenon. The debate around its definition aside, DI is frequently developed by entrants whose goal is to be accepted by the low-end market or to satisfy this segment of the market by creating a new market; without pursuing big profits. They therefore develop disruptive innovations whose performance or unique characteristics are “good enough” to be introduced to and survive in low-end segments of the market. These can be classified into two types: the first is *low-end disruption*, whose innovations are cheaper, smaller or easier to use and are appreciated by low-end customers from the low-end of the market, and the second is *new market disruption* whose innovations are expected to compete against non-consumption and have new attributes that typically offer simplicity and convenience, but lower performance in traditional attributes (Christensen and Raynor 2003).

In our conceptual framework, an incumbent, also known as a large organization, is an established company that leads the mainstream market and an entrant is a new company that begins in the low-end market and over time challenges the former's leadership (Christensen 1997). Following a maturation process related mainly to the improvement of product performance, Disruptive innovations (DIs) eventually reach the mainstream market (offering lower prices, better performance, more efficiency, greater convenience, and being more tailored to consumer needs), and become the most popular products in that market. The most affected party tends to be the incumbents, whose leadership can be minimized, thus triggering competition between the incumbent and the entrant (Dedehayir, Ortt, and Seppänen 2017). It is because of this encroachment that these are known as “disruptive innovations” (Christensen and Raynor 2003; Berglund and Sandström 2017; Dedehayir, Ortt, and Seppänen 2017).

Therefore, DI has different levels of impact on incumbents, which are sometimes “disastrous” (Petzold, Landinez, and Baaken 2019) or “overwhelming” (Reinhardt and Gurtner (2018)). Other studies suggest that DI results in business transformation and leads to mayor changes in incumbent firms (Christensen 1997; Christensen and Raynor 2003; Said and Adham 2016), who are focused on their core consumers in the mainstream market, chasing higher profitability in more demanding markets (Christensen, Raynor, and McDonald 2015). This is identified as an opportunity for entrants to create and develop that can be successful businesses by focusing their efforts on covering the ignored needs of low-end segments of the market or providing customers other options.

DI tends to focus on an underserved, unprofitable market, with low costs and few competitors, but over time it can come to offer high quality to entice mainstream customers or create new consumption, thus generating a sustainable competitive advantage (Kushins, Heard, and Weber 2017). The price, complexity, inaccessibility or oversupply of products and services are a problem for many customers and DI provides an answer. Consequently, DI can be highly influential due to its widespread consumption in the low-end and mainstream markets, thus perturbing the business models of ecosystem incumbents who are likely to resist and react in an adverse manner (Ansari,

Garud, and Kumaraswamy 2016; Gholampour 2017). Not only is DI changing traditional business, but it is also creating new business models.

As a result, its impact is huge, and for incumbents it is a huge challenge to know what to do in response and how to do it (Kammerlander, König, and Richards 2018). What is more, DI is now rather than a threat; it is a reality, and incumbents who face that threat need to develop new skills and strategies to stay relevant in the market. Perez et al. (2017) defend the importance of actions such as the identification of new opportunities, the development of plans, the accomplishment of partnerships and the processes of spreading information. Within this context and considering that the term “disruptive innovation” is so widely popular in the business world, the unresolved debate about its definition may be causing considerable ambiguity when determining what top managers of incumbents should do to tackle it.

The role of managers is extremely important in organizational change because they can drive the initiation and execution of changes to the ways that companies operate (Heyden et al. 2017). Weeks (2015) stressed this importance by arguing that *“if managers were able to understand the long-term trajectories of disruptive innovations, they would behave differently.”* Hence managerial talent plays an important role in identifying, exploring and developing disruptive opportunities (Sadiq, Hussain, and Naseem 2020) and top managers have a significant influence on the structural context to formalize strategy into the company (Jarzabkowski 2008), as they play a key role in any important decision regarding the plans and goals of the incumbent as a whole (Robbins and Coulter M. 2018).

There have been remarkably few studies of how managers embrace disruptive innovation theory or not, and scholars have highlighted that studies about the role of managers in the development or exploration of DI are “rare” (Sadiq, Hussain, and Naseem 2020). Hence, given the existing interest in understanding the phenomenon of disruption from different perspectives, in this qualitative paper, we draw upon top innovation managers of Spanish incumbents to answer our research question: How do Spanish incumbents attend to, interpret and respond to disruptive innovation? This study can provide valuable information about what managers currently think and help us to understand the relevance they attach to this theory, offering new

understanding of the complexity of DI and the practices of incumbent managers. It can also benefit the deployment of resources to confront or develop DI and suggest avenues for future research on such a key topic.

Considering that this study is a first step in the exploration of these issues, we believe that our findings may have important implications for theory and practice. Our study makes three contributions to DI theory. First, it provides a rich and direct understanding of incumbents in Spain by interviewing top managers of relevant companies to learn how they deal with DI. Second, the findings are useful to identify weaknesses, challenges, and opportunities faced by incumbent with regard to DI theory. Third, in order to help incumbents to deploy resources to confront or develop DI, we offer insights that can assist them to accelerate adoption rates by using new approaches.

The remainder of the paper is divided into three sections. The following section describes the sampling and interviewing methodology. We then present the results and the paper closes with a discussion of the findings and their academic and managerial implications, as well as possible lines for future research.

3.2 METHODOLOGY

3.2.1 Research Context

In this paper, we examine the application of DI theory by a sample of incumbents in Spain. In this country, as in many other places, the roles of innovation and human capital are key to remaining competitive (Banco de España 2019). Spain is a developed economy, ranked as a moderate innovator country in the European context (European -Commission 2020). According to a report by the Spanish Statistical Office (Instituto Nacional de Estadística, INE), domestic R&D expenditure increased by 4.2% in 2019, to reach 15.572 million euros 1.25% of GDP (Instituto Nacional de Estadística-INE 2020b). This is around half the average rate for the European Union as a whole, at 2.19% of GDP in 2019 (Eurostat 2020). Thus, investment in R&D in Spain

is low compared to other countries, such as Germany, France, Italy and the United Kingdom (COTEC 2019). With a population of 47,450,795 in 2019, it is the fourth most populous of the 27 countries of the European Union (Instituto Nacional de Estadística-INE 2020a).

In the race to be competitive, Spain has numerous companies, universities and research centres with a significant rate of patent production (Medina, Cano-Kollmann, and Alvarez 2020). According to official statistics from 2019, of the 1,340,415 companies in Spain, 4,871 (0.36%) were classified as incumbents, i.e. have more than 250 employees. Self-employed workers represent 53.6% of companies, micro-businesses 39.8%, small companies 5.5%, medium-sized companies 0.9% and large companies 0.2%. Of a total of 14,207,815 employees in the business sector, 5,622,756 (39.57%) work for incumbents, i.e. well over a third (Report of Ministerio de Trabajo 2019).

3.2.2 Data Collection

The unification of DI criteria is not an easy goal for scholars. As noted earlier, the aim of this research is to understand how DI principles are identified, used and appropriated by incumbents or not, which we achieve by means of a qualitative exploration of how their managers attend to, interpret, and respond to disruptive innovation. Qualitative research is “*accepted and well known in the social sciences*” and usually uses its own questionnaires or instruments, making each study unique (Creswell John W. and Creswell David J. 2018).

We believe that a qualitative study enables us to develop a meaningful and theoretically compelling insight into the impact of DI on business. We opted to use grounded theory as it offers possibilities to create, extend, or confirm the existing explanatory power of theory. It has also been suggested that investigation of the actions, interactions and social processes of people (Creswell 1998) is most effective when the concepts or phenomena are not well understood (Christensen and Raynor 2003; Khavul, Chavez, and Bruton 2013). Using the principles of grounded theory, researchers can examine the views of the main actors in order to understand their experiences (Suddaby

2006). Khavul et al. (2013) highlight that when using grounded theory, it is important to ask “*What is going on here?*”, so this question was intrinsic to our analysis.

Interviews. We decided to obtain information from incumbents by conducting interviews, which we view as a “*professional conversation*” designed to capture the interviewees’ experiences, perspectives, language and concepts (Rubin, H. J. , Rubin 2012). The interviewees are “*the experts on their experiences, views and practices*” thus, they can give us rich information about their defined environments (Braun Virginia and Clarke Victoria 2013). Interviews are also dynamic, constructive tools that foster knowledge transfer, thus further supporting our decision to use them in our study.

We contacted a sample of top managers involved with innovation in different sectors in order to learn about their first-hand insights into the role that DI plays within their organizations and analyse the multiplicity of perspectives that we expected to encounter. Given our interest in conducting face to face interviews, a qualitative protocol was developed (Creswell John W. and Creswell David J. 2018) that involved semi-structured interviews in order to identify relevant variables related to a wide range of perspectives, thoughts, reactions and actions in the incumbents’ DI-related practices.

We chose semi-structured (unstructured and non-standardised) interviews (Saunders, Lewis, and Thornhill 2016) so that we could develop a list of key topics and questions to be covered, but have the freedom to omit certain questions, or vary their order according to the context of each interview (Fischer and Reuber 2011; Saunders, Lewis, and Thornhill 2016), as we were open to comments from our interviewees about the topic. Moreover, as we contacted top managers from different incumbents and sectors, this gave us the option to adapt each interview to the context of each specific incumbent.

Our semi-structured interview protocol began by formulating an initial cluster of research questions based on research articles on the phenomenon of disruption (i.e. Yu and Hang 2010; Christensen, Raynor, and McDonald

2015; King and Baatartogtokh 2015; Hopp et al. 2018b; Martínez-Vergara and Valls-Pasola 2020). We sent this first draft to two external experts in innovation in order to check their degree of agreement and make our questions more reliable. Their feedback was used to reformulate certain questions and refine the interview script in order to gather information and reflect on the topic. This process resulted in 24 questions, divided into six sections: the use of the term DI; the effect of DI on the incumbents' operations; strategies to compete with DI; competitive profile of the incumbents; management towards DI; and innovation activities based on DI theory. Each section included from three to five questions and the interview was scheduled to last 45 minutes.

Selection of Interviewees. The list of incumbents was taken from records of innovation managers of big companies who had attended innovation events in the region of Barcelona (Spain) in recent years. We used three sources: first, the so-called "Innovation Meeting" held at a university in the region; second, managers who have participated in events organized by Co-Society, a private network that promotes business innovation; and finally, attendees of business events related to innovation organized by the regional government. We deliberately chose interviewees from different sectors to make sure that we were covering the perceptions of the broadest a diversity of innovation managers as possible. We then sent emails to 31 innovation managers (Chief Innovation Officers, or similar) of incumbents to invite them to participate in our research. If we did not get a reply, we made a second request, and if this also failed, in some cases we tried to contact them by telephone. Eventually, 20 innovation managers agreed to participate in our research.

Interviews Conducted. Semi-structured individual face to face interviews were conducted at the workplaces of 19 innovation managers and one was held by Skype. All the interviews were conducted in Spanish. A confidentiality agreement was signed by both parties before each interview began. The interviews lasted an average of 44 minutes. Only one innovation manager did not consent to the interview being audio recorded, in which case we made notes during and after the interview. In specific cases, we made

notes immediately after finishing an interview in order to highlight emerging concepts.

3.2.3 Data Analysis

Our data collection began in April and ended in December 2019. To protect the anonymity of the interviewed top managers, they are hereinafter identified as “interviewees.” Table 3.1 provides a detailed description of the interviewees.

Position*	Gender	Type of Incumbent	Business Activity
Chief = C	Male = M	Multinational	
Head = H	Female = F	Company= MNC	
Director = D		Big Company= BC	
President of Company = P			
Managing Director = MD			
D	F	MNC	Biotechnology
H	M	MNC	Nutrition
D	M	MNC	Infrastructures and engineering
D	M	MNC	Sanitary products
D	M	MNC	Building industry machinery
D	F	BC	Management of water and environment
D	M	BC	Manufacturing tools and machinery for the building industry
P	M	BC	Food industry and distribution
D	F	MNC	Energy
D	M	MNC	Pool & wellness industry
D	F	MNC	Laundry machinery
D	M	BC	Food services
D	M	BC	Professional sports club
D	F	MNC	Telecommunications
C	M	MNC	Car industry supplier
D	M	MNC	Car industry manufacturer
D	M	BC	Technological services centre
D	F	MNC	Industrial gases (Air products group)
MD	M	BC	Hotel industry
D	M	MNC	Technology

*According to the business cards of interviewees

Table 3.1 Characteristics of the “Managers” interviewed

As shown in Table 3.1, our 20 interviewees were all top managers. “*Top managers' power plays a key role in strategic decision-making*” (Finkelstein 1992), in order to achieve a planned organizational change as initiators and/or executors thereof. Sadiq et al. (2020) define the concept of managers' disruptive innovation activities (DIA) as their “*synchronized and focused efforts that stress on initiating and/or exploiting the DI process,*” highlighting the managers role to “*generate and nurture DI.*” These previous studies underline the importance of managers for fostering incumbents' DI as they may encourage commitment with regard to DI challenges.

In terms of gender, 15 (71.43%) are men and 6 (28.57%) are women. Watanabe et al.(2017) examined the roles of women and men and the benefits of gender equality in decision-making, in that study 17% of Spanish company managers are women. The participation of women in top management is seemingly growing. The percentage is even higher in our sample, but there is still an imbalance. Saggese et al. (2020) argue that the participation of women in decision-making encourages company innovation, while Glass and Cook (2018) found that a company “*with women CEOs or gender diverse boards are associated with stronger business and equity practices.*”

The 20 interviewees represent a broad variety of economic sectors and they are all classified as big companies according to criteria of the European Union criteria (European-Commission 2015).

Coding and Analysis. In order to analyse the content of the interviews, they were all transcribed using NVivo Transcription. We read each transcript in order to avoid any mispronunciations or incomplete sentences and add the names of the interviewee and interviewer. They all required a second round of verification in which we listened to the recordings again to check for mistakes. Eventually, 295 pages of transcripts were uploaded to NVivo12 Plus software for the organization and analysis of our data.

We used two exploratory methods to code our data: provisional and holistic (Miles, Huberman, and Saldaña 2014). Provisional coding was useful because we began our analysis with a provisional list of codes, and our research questions played a sensitizing role, suggesting the *a priori* construct of the top codes. As the coding progressed, additional sub-coding or other

top codes emerged. Therefore, during our analysis the initial codes were revised, modified, deleted or replaced with new codes. The second method, holistic coding, is defined, as “*a single code to a large unit of data in the corpus, rather than line by line coding, to capture a sense of the overall contents and the possible categories that may develop*” (Miles, Huberman, and Saldaña 2014). The use of a single (top level) code permits us to capture frequent ideas from our interviewees. As we wanted to reflect their views and highlight what they said, we prioritized the interviewees’ voices. This meant that other codes emerged as our analysis progressed.

To avoid duplicity and confusion between codes, we used the constant comparative method (Fischer and Reuber 2011), whereby the codes were constantly revised throughout the analysis process, with sub-codes emerging or codes being reordered into other categories. When comparing and contrasting codes, we wrote summaries, notes and memos with our impressions of the interviews. We made sure that the codes were coherently related to one another, which sometimes meant adding, removing or reconfiguring them to ensure they still belonged to each category. We amended the *a priori* defined categories and included new ones as our analysis progressed, as a result of which, our final list of selected codes was segmented into 8 categories as shown in Table 3.2.

Categories	
Quest for disruptive innovation	Use of the terms "Disruptive innovation (DI)" or "Radical Innovation" Definition Consumers of DI
Management	Monitoring and Governance Types of management related to DI Effect of DI on incumbent
How managers embed innovative ideas	Collection and assessment of ideas Incentives

Table 3.2 Qualitative Analysis: Categories that emerged from the coding process

3.3 RESULTS

In this section, we present the results obtained and as shown in Table 2.

3.3.1 Quest for Disruptive Innovation

All our incumbents have a long and successful business background, and hence strong reputations, some of them including few past examples of DI. The interviewees unanimously agreed that innovation is a critical issue for incumbent growth. They also feel that an incumbents' purpose is to create value, and that innovation not only focuses on developing products, but also human resources and to improvements to the incumbent's own operations. As one interviewee said, "*we are focusing on innovation 360° and 365 days of the year.*" We encountered such claims as: innovation is a matter for all employees, it is embedded inside the incumbent, it is the DNA of the incumbent, and it is a foundation rather than a task. Another interviewee said, "*innovation is like quality, quality is a responsibility of each person who works inside the organization, employees can identify needs in their daily work and suggest solutions to different problems.*"

Most of our interviewees qualify their companies as innovators, given their trajectory in the market, incumbent orientation and position of leadership. Therefore, for them, innovation is a must, a key element of a company's competitiveness (Álvarez, Marin, and Fonfría 2009). In fast-changing markets, innovation can be critical to respond to big changes, so our incumbents have a specific unit that is in charge of innovation within the organization. As expected, there is a wide diversity of names for these units: R&D Department, Market Intelligence & Innovation, and Engineering and Development, among others. In a few cases, the innovation unit is part of the technical or production areas, the reason being that that area has the competences to develop products and processes related with new business opportunities and the challenges that have to be faced in order to provide breakthroughs. On the creation of innovation units, Reinhardt and Gurtner (2018) argued that the role of "*Chief Innovation Officers*" in companies is the result of the influence of DI theory.

The results in relation to the managerial view of disruptive innovation are presented in this section.

Use and Definition of the Terms Disruptive Innovation and Radical Innovation

45% of our interviewees said that they use the term “DI” when defining their business strategies, so for this group DI is a must. Another 20% use the term occasionally and 35% do not use it; they only use “innovation” in their business language although they are aware of this type of innovation. 70% of interviewees do not use the term radical innovation and just 30% consider DI to be synonym of radical innovation, on the understanding that “*a radical innovation could also be a disruptive innovation and vice versa*” (Das et al., 2018), and because a radical innovation “*provides a brand-new functional capability, which is a discontinuity in the current technological capabilities*” (Steenhuis and Pretorius 2017). However, it is important to consider that “*disruptive innovation does not necessarily involve cutting-edge new technology, as radical innovation does*” (Govindarajan, Kopalle, and Danneels 2011). Here, it is interesting to note that some researchers use radical and disruptive innovation synonymously, especially in studies related to disruptive technology (Markides 2006; Tellis 2006; Xavier Molina-Morales, Martinez-Chafer, and Valiente-Bordanova 2017). Therefore, radical innovation is associated with disruptive technology.

Given that all our interviewees had heard of DI, we felt confident asking them to give us a definition of DI, and we received a wide variety of responses and associations, the most significant of which we now highlight.

Transformation: For the majority (70%) of our interviewees, DI is associated with transformation and revolution; it involves the development of something that no one is doing, breaking away from everything that existed before and making new things happen, which they qualify as a society-changing evolution. As one interviewee said, “*With DI there is a before and after, it suddenly creates a need that does not arise in a normal world.*” Another interviewee remarked on how “*a company sees what others do not see.*” Although, there are several interpretations of DI, a common idea among our

interviewees is that it involves a culture of transformation and is linked to the creation of new products and consumers. Figure 3.1 summarizes the most common point of views of managers to identify a DI.

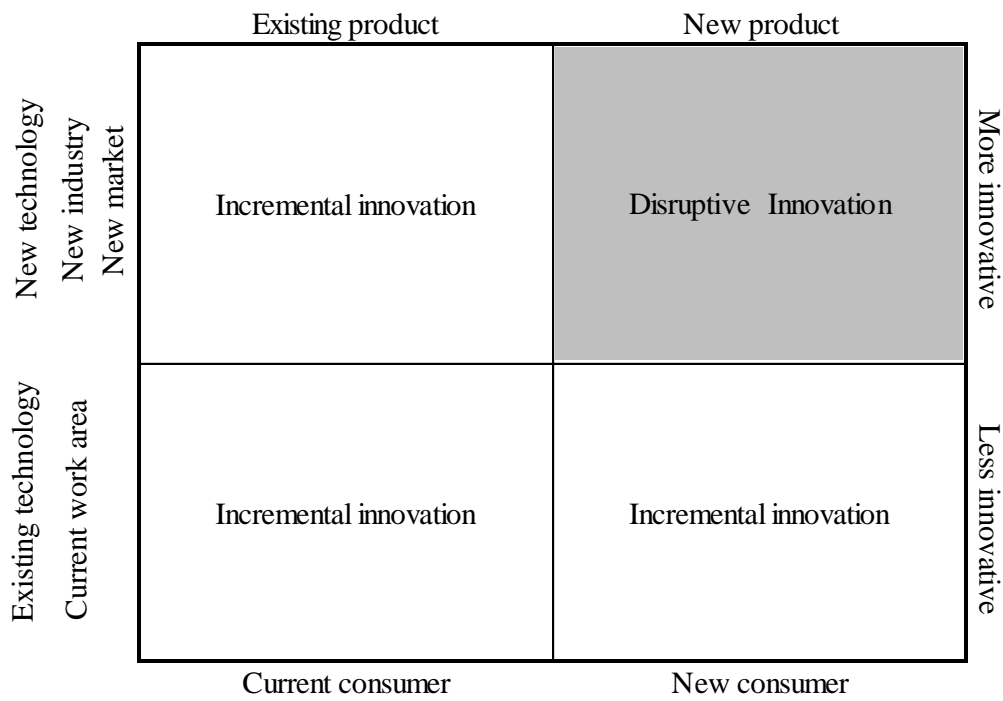


Figure 3.1. Key approaches to identify disruptive innovation and incremental innovation by incumbents

Market: As Figure 3.1 shows, the bulk of our interviewees link DI with new-market disruption (new market and new customers) and argue that it changes the rules of the market, thus creating major growth. A DI can be identified when they see a new actor in the market acquire a leading position or develop a new business model with the aim to become leader. As one interviewee said, “for us, disruptive means that it is neither a customer nor a current area of work.” Another said “DI does not come from our direct competitors, DI comes from new companies or start-ups or technological companies, and the question for our company is how we can foresee who is going to cook a DI. It does not come from our industry.” These approaches are closer to new-market disruption, because incumbents focus their efforts on creating new consumption. These interviewees are interested in discovering blue oceans, areas where no one exists, or as one interviewee put it “the goal of DI is to create a new market with a different user profile.” Schilling (2017) described

Blue Ocean Strategy as: *“Create uncontested market space, make the competition irrelevant, create and capture new demand, break the value-cost trade-off, align the whole system of a firm’s activities in pursuit of differentiation and low cost.”*

Consumers: For most of our interviewees DI is associated with different solutions for consumers, an innovation to a large number of consumers and to develop DI the answer does not come from customers. The interviewees argue that DI offers consumers more tools. Interestingly, in relation with consumer needs, one interviewee said that *“when a DI was born, it had no innovation, all these previous technologies were known. If I look at the technologies involved in DI, they have all existed. A lot of them evolved without there being a disruptive technology but they still changed humanity.”* This thought is linked to the idea that DI evolves from its origin and only gets noticed by incumbents when it is mature and has conquered the mainstream market. Another point of view is that DI can provide an answer to complicated problems (Levina 2017). One interviewee commented that it grows out of difficult crises when companies are pushed to think up creative solutions, whereupon DI appears as a *“solution”* to a sudden need that would not exist in a normal world. These different situations create a different context, and therefore the innovation should be different too. This reflection relates to the definition of one type of DI – new-market disruption.

Hard to Define DI: about 38% of our interviewees emphasized that DI is difficult to define. There is not an exact definition and they wonder if anyone knows what its exact meaning is, arguing that an innovation can be disruptive for one person but not for someone else. One interviewee commented that *“it is difficult for me to define a DI. A lot of people have taken the concept of disruptive innovation to mean something highly generic, very broad, without ultimately defining anything. DI is not always a “click”, it is the fruit of small innovations that ultimately go ‘bang’.”* Hence, for some interviewees DI may come from little things, or it could also be the result of a balance between various factors.

While enquiring about this subject, we also took the opportunity to ask whether our interviewees could identify who the consumers of DI are. Most

of them do not know. As mentioned early, they consider it to be a complex matter. For some it is closer to the consumers of new-market disruption (new consumption), with one respondent saying that “*they do not exist.*” In certain cases, they identify them as young people, which fits with the early adopters category in terms of innovation diffusion (Rogers 2003). A minority said everyone is a potential consumer of DI. One interviewee remarked that this transformation (DI) is still misunderstood by consumers. None of our interviewees clearly identified consumers of DI. Disruptive innovation theory identifies consumers from the low-end market, consumers with unmet needs in the market, or the new-market, who are identified as new consumers of new products (Christensen and Raynor 2003).

These different approaches to the definition of DI pose a challenge for scholars. A proper understanding of DI would be beneficial to all of us, but especially for incumbents if they want to maintain their leadership, for innovation is a key driver of competitiveness. Their aim is clearly to be different, and DI may allow them to be so, but most of our interviewees claimed that it is extremely difficult to focus on DI alone, because, as one said, it represents “*a big jump in business*” while another called it “*a leap in the dark.*” Some interviewees argued that in today’s complex world, DI may be seen as a surprise that people might or might not like. Our interviewees therefore have contrasting perceptions of how DI should be tackled.

3.3.2 Types of Management Related to Disruptive Innovation

Our interviewees explained that as incumbents move up the learning curve, they face the challenge of finding new solutions to current problems and future needs, increasing their sales, being growth-oriented and leading the markets in which they are active. As consumer behaviours are evolving, the ever-increasing pace of change can be particularly demanding for managers. These changes force them to take actions and respond quickly to big changes in the way incumbents operate and push them to deal with these changes and acquire different new capabilities while still performing their business. While they are scanning the horizon for growth opportunities and tackling these changes and attacks on their business, we found that incumbents apply

different approaches to dealing with DI.

DI as a MUST: For 40% of our interviewees, DI is a must these days and to do this they have created a unit that continuously monitors what is happening in the world. One interviewee who is a disruptor said “*we have developed a disruptive technology. Before it was a matter of growth, now it is more core and growth must be added to it. We are now looking for the next leap forward, which will come through another disruptive innovation that we are still looking for. We have several projects on the go, but as I was saying (...) for every thousand ideas that are generated, with a little luck just two will lead to something. You have to start the innovation engine one, two, three, five, or as many as ten years before, depending on the technology or goal that you want to achieve with the solution.*” Another interviewee pointed out that “*we believe that we have a DI and then it takes 10 years to get it off the ground, we have been doing this for many years.*” These findings suggest that it can take a long time to develop a DI, and that it involves taking risks, mostly in terms of time and money. They invest heavily in finding the next DI, one interviewee said, “*it is fair to say that up to 80% of all investment is dedicated to the cause.*”

The interviewees also explained that this kind of innovation involves the need to be more agile and smarter. To achieve this, some incumbents adopt a start-up approach that is flexible enough to manage the various difficulties and face the challenges that they are forced to encounter, rather than making the perfect product, or presenting rigorous solutions. Other incumbents work directly with start-ups, or invest in start-up accelerators, to develop DI. It depends on the incumbent’s goal. Some interviewees explained that incumbents are willing to make their customers the main focus, and interact with them continuously to hear their ideas, learn from them and learn how to win more consumers as quickly as possible. They highlighted that it is important to listen to customers because most ideas and solutions come from a bottom-up approach. Another important factor arises at this point, namely the profitability of DI, for as one interviewee said, “*DI helps to make more money than other innovations.*” Another argued that in the quest for DI they do not take into account competitors, saying that “*when developing DI we do not watch what our competitors are doing, because that would make us a follower, what is more, what we are really looking for are new drivers of the*

growth of our organization, new revenue streams more than a DI, and it is true that the more disruptive a product is, the more impact it will normally have on business.”

This group of interviewees prioritize new-market disruption, i.e. innovations aimed at creating new consumption and hence a “*new market*” that satisfies needs that never existed before (Hang, Garnsey, and Ruan 2015). This does not include low-end disruption, which is associated with the exploration of low-end markets to discover the unmet needs of a low-end segment of the market (Hang, Garnsey, and Ruan 2015). These managers highlighted that incumbents are more willing to think about ways to work differently to make products more interesting and socially significant.

Balance Between DI and Incremental Innovation: Most interviewees acknowledged the importance of developing DI. However, 45% of them take DI with caution, for they understand that disruption can take a long time and sometimes it is useful for someone, maybe from the competition, to play the role first, so incumbents can learn from their mistakes. They drive an innovation management focused on incremental and DI, as one interviewee said “*as an incumbent we don’t want to launch something that anyone has, instead we want to have a cutting edge technology position, but perhaps not totally disruptive or revolutionary, we try to have a balanced payback between incremental innovation and going beyond our comfort zone (DI).*”

In fact, it is well-known that incremental innovation refers to enhance the company’ current knowledge to improve existing products and that it presents a low degree of novelty (Le et al. 2020). Another said that “*DI is a challenge, a big challenge that we are facing. We operate in the short term or medium term and manage the business while we are flying the plane. It’s like keeping the plane in the air while we are changing the engine.*” Another interviewee said, “*we are continually introducing new features to change the product, our product portfolio, using incremental innovation rather than radical innovation.*” For them, concentrating only on one of both types of innovation could be a mistake. This management approach aims to foster stability and safeguard the incumbent’s reputation.

In this scenario it may be reasonable to apply a prudent business innovation policy, given the reputation, size, organizational structure, conditions, processes, customers, commitments and demanding competitive environments that incumbents must face. These reasons may explain why incumbents opt for both types of innovation, incremental and DI. They prefer to be a little conservative and take a moderate level of risk.

As these incumbents are interested in both types of innovation, some are aware that DI needs special treatment, and have therefore created a group dedicated to it. As one interviewee said: *“If you want to do something disruptive, it has to be something separate, that is, it has to be related but separate.”* Thus, some incumbents have an independent innovation department under the direct supervision of the president of the company, and whose resources and time are focused on developing DIs. This department makes a distinction between incremental innovation, which is closer to day-to-day production and aimed at improving product performance, and DI, which is something new or, at least, that is looking for alternative solutions. This area does not do incremental innovation and may have strategic alliances with start-ups and other institutions to create innovations that will have a greater impact on the market. In short, incremental innovation to grow and evolve the business, to be closer to customer needs and to remain in the market; DI to leverage and to be ahead in the market.

In keeping with the aforesaid reasons, our interviewees highlighted that incremental innovation comes from their different business areas and DI normally comes from an independent unit that is strategically created to develop DI, but which is not associated to their business. Therefore, DI is significantly distant from incumbent’s current activities. Figure 3.2 shows these approaches.

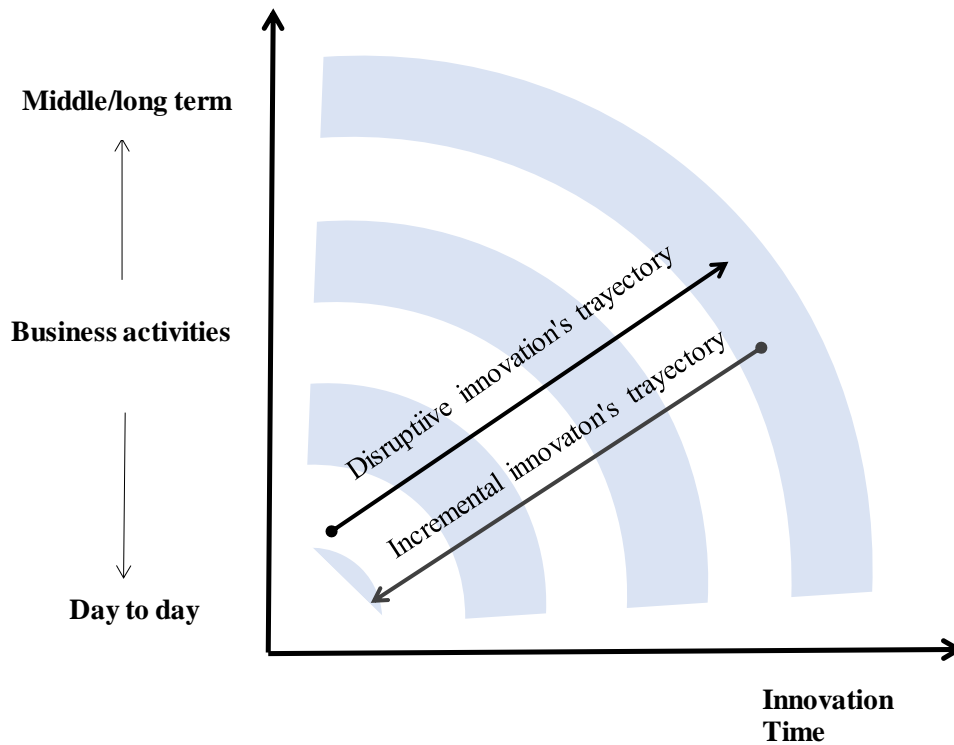


Figure 3.2. Incumbent's business activities and disruptive innovation

Sceptical about DI: A significant minority of our interviewees (two cases) argued that they are not interested in developing DI because they consider its sector to be a traditional industry. They argued that their incumbent activities are focused on developing products or services in order to meet well-understood customer needs. One interviewee noted that “*the traditional way works just fine for us, why change it.*” From this, we can infer that these incumbents do not feel the need to explore other unknown customer needs (customers from the low-end market or the creation of new markets as DI do). There is overconfidence in their customers and market, as they have gained experience in their sector, market and customers and enjoy a good reputation. Moreover, although they do not feel attracted by DI, it is important to note that scholars and practitioners have observed how incumbents sometimes underestimate the entry of new competitors and therefore the power of DI. Berglund and Sandström (2017) argued that one reason for incumbent failure and entrant success, is because “*incumbents were captivated by their existing market which was still growing.*”

Influence of Disruptive Innovation on Incumbents

Our interviewees expressed that they are under pressure to find an innovation that can have a positive impact at a global level. They highlight their commitment to innovating according to new technologies and social trends, such as the economic and social consequences of climate change. They seek good quality innovations and a production system designed to offer the best product associated with sustainability. Although most of our interviewees claim that DI can break the product range and is a great driver of economic change and developments, the bulk of them have not developed it, but they have implemented examples of DI in their activities with the aim of being more efficient. Thus, many areas of their companies have changed, in line with Levina's (2017) argument that DI is focused on "*optimization, change, and continuous evolution.*" What is more, several interviewees argue that DI comes from other sectors, such as one who says that "*normally, when we encounter innovative ideas or inputs that arise from observing the competition, they are more incremental innovations than disruptive innovations.*"

Most of our interviewees use such examples of disruptive technologies as Amazon, the World Wide Web, Cloud Computing, and Internet to improve their operational management. These examples have put pressure on incumbents and have affected the organization but not so much on the level of products. In this line, Szász et al. (2020) found that Multinationals (MNCs) are up-to-date with the adoption of emerging technologies. They explained that big changes are difficult in a traditional sector, and that each change needs to happen step by step, most significantly when consumers are very slow to renew products, for instance in industries focused on construction, sanitary products and laundry. A minority of interviewees argued that a traditional business model is unlikely to view DI as a problem or a threat. This may appear to be consistent with Hopp et al. (2018a), who argue that incumbents suffer from myopia when it comes to recognizing the effect of DI. Therefore, most of the incumbents of our sample are consumers of DI.

These findings suggest that the interviewees do not perceive that DI is a direct threat to their industries, to the extent that it could leave incumbents out of

the market. For example, one interviewee remarked that “*although we certainly do implement many innovations, we continue to do some important things the same way we did in the past.*” Another claimed that “*it is relatively easy to implement information technology (IT) in our company, so for the time being there are no disruptive changes that are leaving the company out of the market.*” Sultan (2013) argued that incumbents take advantage of IT as they have “*the economic means to cope with its resource implication.*” In other words, they have enough resources for operational management and maintenance.

Taking these approaches into account, the effect of DI depends significantly on the type of sector. Incumbents are constantly looking for ways to harness all the information and technology around them, to provide better products or services to consumers. Some incumbents argued that they have enough time to react when a product innovation that might affect them is presented at an event (e.g. fair or industrial exhibition). Hence, some sectors suffer from being in an explosive market and others do not, but ignoring the threat or presence of DI may lead to “*catastrophic consequences, such as the loss of business and market share*” (Lucas and Goh 2009; Sadiq, Hussain, and Naseem 2020).

In contrast to previous approaches, a minority of our interviewees do feel the direct effect of DI on their sector, for example, automatic or electric vehicles, and services (where Amazon is the biggest threat and competition). They foresee that DI will bring about big changes in the coming years, including major advantages in terms of services and leisure. These interviewees also mentioned that low-cost innovations such as low-cost airlines, Airbnb in the tourism industry and other innovations coming especially from Asia are a threat to incumbents due to lower prices. In this respect, the proximity of competitors from Asia can lead to competition that reduces their pricing power.

3.3.3 Management of New Ideas

As every manager argued, ideas can come from anywhere: from industry, the market, consumers, employees, and more. However, in this study we are

interested in figuring out how incumbents harness creative ideas from employees, as these are considered a very good source of disruptive ideas, given their direct contact with markets (Yu and Hang 2010). Incumbents use a wide range of formal and informal mechanisms to encourage the generation of ideas and foster talent among their employees. Activities such as innovation calls, innovation programs, entrepreneurship programs, intrapreneurship programs, brainstorming, coaching groups, creativity workshops, communities of practice and annual innovation awards, among others, are launched to extract the most innovative ideas, and these activities cover a large number of areas with an eye to improving their employees' skills and commitment to an innovation system.

On the understanding that innovation is a multidisciplinary matter, our interviewees highlighted that the whole organization must be aligned with their consumers' journey, understanding their needs and market experiences. As one interviewee said, *"Before, engineers only thought about codes and tools without thinking about consumer needs, now all of our engineers think about consumer needs"* Another said that *"innovation is intrinsic to each area of our business; each area is more likely to be creative and fruitful when they work on things that they are interested in."* Considering that each business area has a different level of innovation, that is to say, different level of maturity, in some areas it is possible to do more advanced innovation than can be done in others, triggering an uneven level of difficulties in some business areas as opposed to others.

However, we are unable to identify a clear pattern of behaviour in relation to the assessment of innovative ideas or possible innovations to be developed by incumbents. It highly depends on each incumbent and how the company is organized and structured. Some incumbents have created committees, calling them, among other names, an innovation committee, project monitoring committee, business development committee or a community of practice, as well as other informal channels. Such committees work to evaluate innovative idea and determine which will be developed or not, make sure that no worker's ideas, knowledge or experience is ignored and ensure that every idea is given due consideration.

Basically, any idea that is accepted should be related to problem-solving or offering new visions and solutions using real technology and whatever else is available. The idea needs to address such important areas as the business focus, where the company is going, why these innovations are needed, where it will arrive, what resources are available, and what profit motives lie behind these innovations in order to identify whether it is technically viable and worth running certain risks for. The idea should fit with the incumbent's flow of needs and its innovation strategy. Basically, it is ideas linked with new technologies, the reality of the industry, and future trends that are especially welcome. Incumbents are aware that an idea needs to overcome several major hurdles as it completes the cycle of first becoming knowledge, and for that knowledge to be turned into profit. In other words, investment in a creative idea must lead to profits. If it does not complete this cycle, then it won't work.

However, both the previous approaches and the cycle that an idea should accomplish seem to be linked to the development of incremental innovation more than DI. Considering that many incumbents are eager to develop new products and generate a new market, which is related to a certain type of DI, new-market disruption, it is impossible to predict the results in terms of profitability because it is aimed at creating a new form of consumption, in other words a market that does not yet exist. On the other hand, low-end disruption is aimed at low-end segments of the market, whose consumers demand simplicity, affordable prices, and "good enough" product performance over quality, and hence does not seek profitability (Christensen and Raynor 2003), at least not until the DI is starts to break into mainstream market and compete with incumbents.

Consequently, predicting the success of DI entails high risks. On profitability, Schilling (2017) noted that "*one of the most common mistakes managers make in their innovation strategy is to insist on seeing the numbers—for truly innovative products, it is impossible to reliably produce any numbers.*" Hence the need to assess the most attractive ideas and kill the least attractive ones, i.e. the "fail fast" approach, to avoid over-investing in resources, time and human resources, which is not beneficial for the

development of DI, because the cycle can take long. Investment in projects depends on their complexity, and is frequently in the short or medium term, from six months to a year and a half. Given that companies establish an innovation budget, incumbents need to carefully and strategically plan which ideas they will invest in and when, for if too many projects are on the go at the same time this can limit the resources available for the highest-impact innovations (Dean, Zhang, and Xiao 2020).

Incentives

We found a diversity of opinions concerning the incentives to encourage employees to innovate. There are opinions for and against, but most of our interviewees consider incentives to be useful for reinforcing the incumbent's innovation competence. They argued that more creative ideas occur to people when they are inspired by challenges. They therefore draw upon people from different business areas, from different backgrounds, who can develop ideas, offer assessments, and support decision-making from other points of view. Our interviewees feel that if employees have a shared perception of the development of innovations and are allowed to work on their ideas, and these ideas works, then they will have a positive perception of innovative culture, which will gradually transform the incumbent. Therefore, for a large number of our interviewees, incentives have positive effects on their businesses.

However, one interviewee from a multinational with experience of developing DI argued that incentives are not always great generators of good ideas, and especially disruptive ideas, because these ideas may be pipe dreams that are difficult to put into practice, or use unaffordable technologies, and it can cause frustration when thousands of ideas are produced but only one gets implemented. This interviewee noted that *“those ideas are not the answer because we need to think about real challenges, in real life, or imagine something.”* The success rate of disruptive ideas is therefore very low or inexistent. This may be because neither employees nor managers take into account the unmet needs of other markets, as the low-end market. DI is developed when a need is detected at a distance from the mainstream market

or when a crisis creates new needs, and so DI mainly begins in low-end markets.

This apparently unattractive market (low-end market) to incumbents may hold the answer to the development of disruptive ideas. It is at least worth taking the risk of exploring it rather than oversupplying current customers and starting a race to explore and discover new markets. These unexplored markets may offer new opportunities for incumbents and give them the chance to resolve unmet needs.

Concerning awards, three approaches were identified: no monetary awards, monetary awards, and no awards.

No Monetary Awards: Most of our interviewees explained that they have implemented awards to recognise the best innovative ideas. These might be stay-programs in Silicon Valley, trips to other countries, masters and training courses, and so on. One interviewee said that “*we do not have financial awards and people like that. They are improving their professional skills and are more appreciated by the market.*” As well as acquiring professional skills, rewarded employees also have better opportunities inside the incumbent. Our interviewees noted that monetary incentive provide some degree of “adrenaline”, generating short-term loyalty. In the words of another interviewee, “*traditional rewards are not always effective for motivating intrapreneurs, they require intrinsic incentives, in particular, autonomy, mastery and purpose.*” Therefore, in times of innovation, employees’ inner desires play a special role in developing ideas to boost the growth and prosperity of the incumbent.

Monetary Awards: On the other hand, very few incumbents have implemented financial rewards to employees, bonuses or the payment of patents on behalf of their employees.

No Awards. Another minority of incumbents have not implemented any kind of monetary or other incentives, because their experience tells them they are ineffective and achieve nothing. They did implement incentives in the past but removed them due to economic crisis in 2008 or, as one interviewee said, “*something was implemented but the success rate was slow.*” All their

employees can present their ideas, but they do not receive any incentives.

To summarise, a large percentage of incumbents offer different non-financial incentives, a few offer financial incentives and some do not offer any incentives at all.

3.4 CONCLUSIONS

The purpose of this paper is to provide a comprehensive picture of the current perceptions among innovation managers of disruptive innovation theory, based on a sample of 20 incumbents located in Spain. It is particularly interesting because it involved face to face interviews to gain a deeper understanding of how top innovation managers from incumbents interpret, react and respond to DI. Basically, we describe the use, definition, management, influence, choice of ideas and incentives related to this phenomenon and how each contributes to understand the challenges and opportunities that disruptive innovation theory entails. Our findings offer important contributions to scholarship and practitioners in three areas: an overview of how DI influences incumbents, the managerial implications, and approaches to obtain ideas about disruptive innovation.

Global Influence of Disruptive Innovation. This research revealed that the term “disruptive innovation” is popular among the vast majority of our interviewees. While innovation is fundamental for everyone’s survival and is described as a key factor of being competitive, several incumbents are interested in enhancing the value of their innovations in order to expand and consolidate their businesses, have a major impact in the market, create new business models and use the new technologies that DI is associated with. They are responsive and aware that DI requires new skills and knowledge, but do not have clear ideas about how DI should be identified and described. We encountered various definitions. Most of them argue that DI drives big changes to markets because it creates new needs through new products. In fact, they identify a DI when they see new actors in their market. Therefore, our study provides evidence that the bulk of incumbents identified some characteristics of new-market disruption, which is one of the types of DI described by Christensen and Raynor (2003). However, another type of DI

(low-end disruption) is unbeknownst to our incumbents. Thus, our study shows that there is still little understanding of the core concepts of DI theory.

Although, several studies have addressed the conceptual ambiguity of DI, this issue is still unresolved and therefore a key challenge for scholars lies in developing better understanding of its complex conceptual framework. What is more, taking into account that the bulk of our interviewees see DI as a great opportunity to new business, unless this issue is resolved, there is a strong possibility that DI theory will continue to attract the attention of incumbents more because of the “term” than the core theory. Hence incumbents’ actions could be tepid, wrong or inexistent. As long as the core of DI theory remains fuzzy for incumbents, they may not know how to tackle it or what to do to be a disruptor. Our study shows that the term “disruption” seems to have generated certain confusion as its true meaning (Christensen, Raynor, and McDonald 2015).

Certainly, DI is a complex issue, but several studies have introduced the main approaches of this theory, and knowledge of the roots of DI may help the incumbents to implement more appropriate strategies. This study encourages the delimitation of DI theory to the harnessing of innovation, posing a challenge to disruption researchers and inviting practitioners to explore the core of this theory. A consideration of DI’s roots provides information about markets, customers’ needs, and characteristics of examples where it emerges. In addition, future research could be addressed at reducing these biases in the existing literature of DI theory and managerial practice with regard to incumbents.

Another important observation to note is that the lack of awareness of DI’s roots may be explained by the fact that it does not originate in the incumbents’ mainstream market, they only encounter it after it has become mature, i.e. presents a mature product to a mature market. And when it reaches that mainstream market, it is called “disruption,” whereby DI improves the quality but retains its initial characteristics, such as lower price, simplicity, user-friendliness and other unique, new characteristics that allow it to compete with incumbents in the mainstream market. But the incumbents

are unaware of its origin. This suggests that there is not enough knowledge of the processes involved in the initial development of DI, its evolution over time or how it eventually reaches the mainstream market as strong competition for incumbents. In one study on knowledge management and innovation, Capaldo et al. (2017) found that “*managers do not typically consider the origin of knowledge in their decisions to incorporate mature knowledge in new innovations, but they should pay more attention to it when considering how to leverage such knowledge in their firms’ innovations.*” They argued that “*mature knowledge can enhance the value of innovations*” encouraging “*managers to consider not only the type of knowledge used in innovations but also its birth date and birthplace.*” Considering that DI is seen by incumbents as an innovation with exponential growth and to represent a high degree of competition, it is probably worth exploring the origin of this theory. Figure 3.3 shows the process followed by a disruptive innovation.

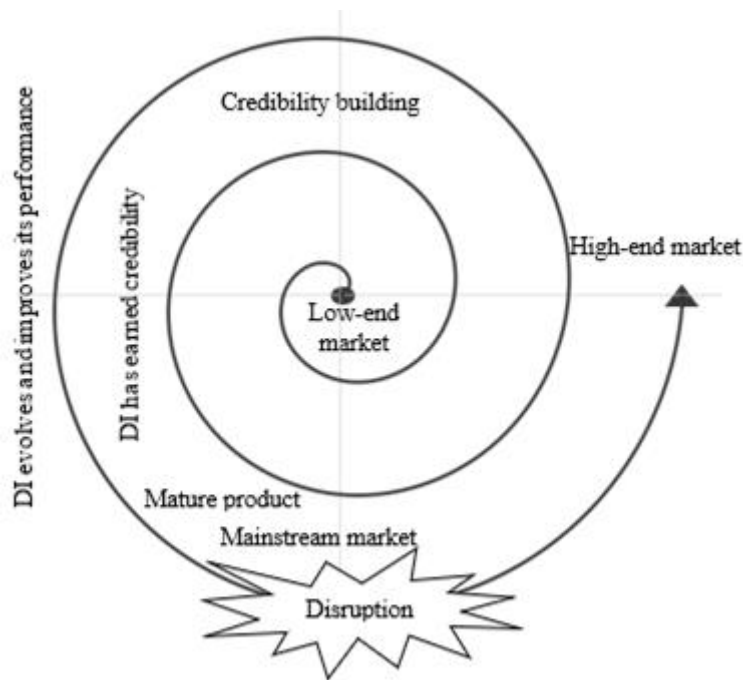


Figure 3.3 Disruptive innovation’s trajectory

Managerial Implications. Considering that incumbents aim to remain competitive and be able to successfully break into new markets, our incumbents are constantly investing to introduce new functions to change and improve their products or services, which is identified as incremental

innovation, mainly focusing on supplying their consumers with quality, reliable products or services and serving society's requirements. To achieve this goal, they have made changes to their organizational structures in order to adapt to such external challenges as market changes, consumer preferences and technology. As the incumbents moved up and gained considerable experience in their sectors, they developed a wide range of strategies to innovate based on their own experiences. Hence, whether they are interested in developing DI or not, they aim to be innovative and implement a set of assumptions and practices that will generate innovations that are more in line with what their market needs and developing the best solution for their consumers. Hopp et al. (2018a) describe the fact that incumbents focus on producing too feature-rich products that far surpass customer needs as myopia. However, this myopia may partially be confirmed.

Given that incumbents are inclined to be innovative, to be more competitive, to find solutions to people's problems and to be sustainable over time, we found three groups of managerial types with regard to the way they tackle DI: incumbents interested in developing DI, incumbents interested in incremental innovation and DI, and incumbents that are sceptical of DI. We found that most incumbents are interested in developing DI because it is perceived as a great opportunity to advance their businesses and have an economic impact on a global level, rather than as a threat to their businesses. Thus, in their effort to develop DI, most of them have addressed organizational changes and devised strategies to find out how things can be done differently, as DI is considered a powerful innovation for doing that. Consequently, these incumbents need to ambidextrously manage both their businesses and their efforts to develop DI.

Our research demonstrates that the vast majority of our incumbents are consumers of DI because they argue that DIs come from other industries and emphasized examples of disruptive technologies. A minority of incumbents feel the direct threat of DI in their business and are under pressure to find new DIs. Likewise, a tiny percentage of incumbents argued that their traditional industries are up to date with the changes in their markets and DI does not pose a threat to them.

Another important factor for incumbents is that their customers are slow to accept new products. Incumbents want to meet their customers' requirements using different strategies to improve the efficiency and effectiveness of their resources and to involve the customers in the innovation development process. In a study of consumer resistance to innovation in services, Mani and Chouk (2018) found that the customer resistance to new products is one of the biggest challenges for managers, which may explain the importance of incremental innovation because it ensures customer satisfaction. The main innovation priorities of incumbents are shown in Figure 3.4.

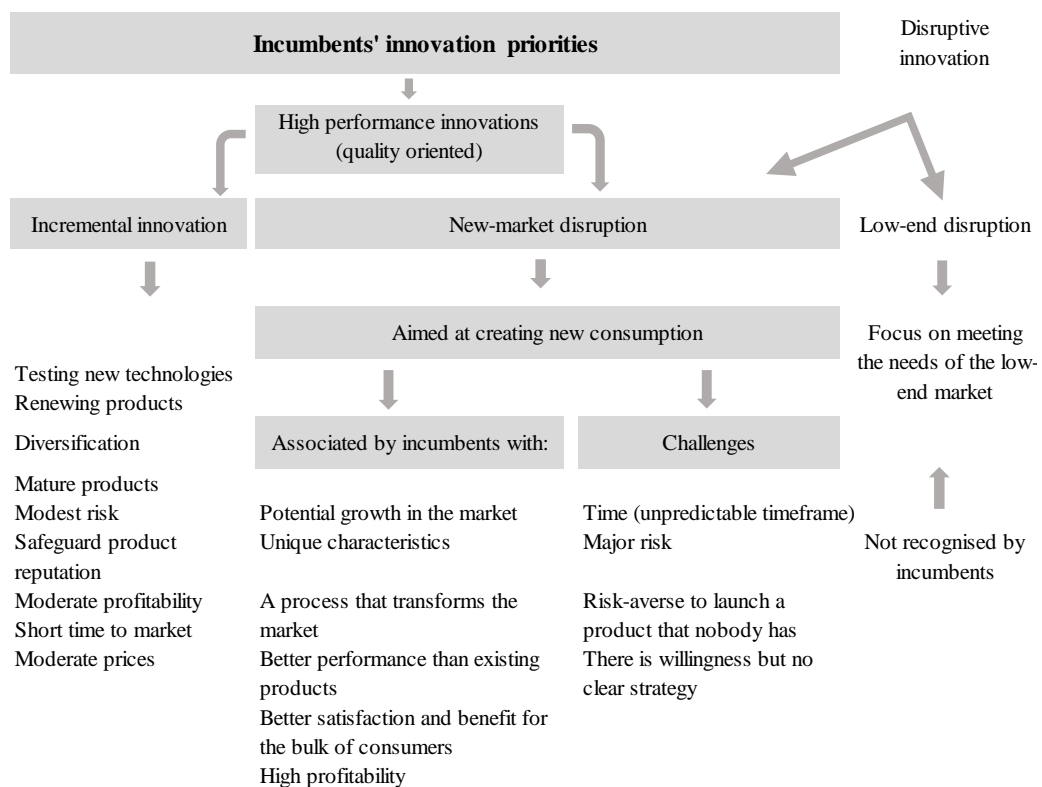


Figure 3.4. Summary of the incumbents' s innovation priorities


Approaches to Obtain Ideas with Regard to Disruptive Innovation. Undoubtedly, the development of successful innovations depends on a multitude of internal and external aspects of companies (Das et al. 2018). One major challenge that incumbents must face is finding creative ideas. They are willing and have the resources to try new innovations that are risky, but without neglecting their existing business activities. Thus, in the race to

find innovative ideas, incumbents have implemented different activities throughout the company to encourage employees to be part of innovative culture. These ideas must be aligned with the incumbents' goals, such as profitability, short-term and medium-term returns and consideration of mainstream consumer needs. Nevertheless, DI theory does not seem to take these issues into account. Consequently, incumbents are typically unmotivated to develop DI that promises lower margins, target smaller markets, and introduce inferior products and services that their existing customers cannot use. Therefore, seeking creative ideas by analysing the requirements of the mainstream market where incumbents are already playing may not produce clues about DI. Instead, incumbents need to explore other segments of the market, avoid applying the same rules to find other types of innovations, and avoid risk-aversion to innovations that may take a long time to develop.

Finally, although there is still much research to be conducted on DI and its influence on incumbents, such as managerial perceptions, this study has furthered our understanding of the main managerial implications of the theory using a sample of Spanish incumbents from various industries. It provides significant insight into incumbents that want to develop DI and may lead to a better understanding of the weaknesses related to the phenomenon of disruption. Considering that DI represents a great business opportunity for a large number of our interviewees, our results can help to boost incumbent performance in relation to the development of innovations that will have a huge impact in the market. In fact, in the wake of the recession due to the pandemic and continuous changes to the marketplace, incumbents have to strive in a challenging environment and need to understand and respond to crisis situations. Open attitudes, exploration, experimentation, collaborations and reflection might all be needed in order to find DI. As this is a qualitative study, it has certain limitations, but it also presents several opportunities for further research. Studies on different contexts in different countries could be useful to improve our understanding of the influence of DI as well as to find complementary or contradictory points of views among managers.

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**CHAPTER 4 |  SPANISH
INCUMBENTS
TACKLING
DISRUPTIVE
INNOVATION
DEVELOPMENT: A
QUALITATIVE
RESEARCH STUDY**

CHAPTER 4

SPANISH INCUMBENTS TACKLING DISRUPTIVE INNOVATION DEVELOPMENT: A QUALITATIVE RESEARCH STUDY

Abstract

Many examples of disruptive innovation have taken the leadership in the mainstream market where incumbents played. Currently, incumbents, small companies and entrepreneurs are interested in developing disruptive innovations. However, this evolving phenomenon has put under very serious pressure to incumbents. Successful examples of DI seem to foster them to bet for it. Incumbents are interested in harness this innovation and find opportunities to be disrupters, in their effort they have started to explore, and to act in order to tackle it.

By conducting a qualitative research through semi-structured interviews to 20 top managers of incumbents located in Spain this study answers the following research question: What are the main management priorities, key factors, and challenges for incumbents in relation to tackling disruptive innovation? Findings show that DI has been influential on incumbents' actions because it is considered as a great opportunity to be different and to lead the market. There are interesting approaches concerning management priorities carried out by incumbents when tackling DI, some important common key factors and challenges are analysed, and issues relate to the relationship of qualitative and price as well as the role of emerging markets are discussing to show important approaches to take into consideration when developing DI. Therefore, in this article we present several approaches to enhance incumbents' possibilities to develop DI as well as common

challenges they need to overcome according to the principles of this theory. Our findings have useful implications for innovation management practice and future research directions are also provided.

4.1 INTRODUCTION

There is a common consensus in the literature with respect to the huge business impacts of disruptive innovation (DI) (Suryanegara 2016), which drives massive transformations in many industries (Christensen and Raynor 2003; Tham 2016). As DI focuses on new market and low-end innovations (Nagy, Schuessler, and Dubinsky 2016), it drives the most revolutionary changes. According to Christensen and Raynor (2003), the existence of an oversupply of products, unaffordable prices and product performance pave the way for developing DI, as this type of innovation introduces “good enough” products or services with affordable prices, an adequate performance and its simplicity. After a process of maturity, especially in terms of quality, while still maintaining attractive prices, different performance and other unique characteristics, the innovation reaches the mainstream market and challenges the leadership of incumbents. Therefore, DI has the power to create new products and new actors in the marketplace (Zach, Nicolau, and Sharma 2020). Moreover, existing companies or incumbents change their current way of doing business in response to DI (Blume et al. 2020).

However, the core concepts of DI are still misunderstood and this type of innovation *presents some intriguing inconsistencies* (Christensen et al. 2018). Examples of DI such as the Internet, smartphones (Thompson 2016), Netflix (Park 2017), and Airbnb (Tham 2016) Google, Amazon (Haucap and Heimeshoff 2014) force companies to think about revolutionary business, as these innovations are concentrated in the hand of few big players. As a result, DI generates an unbeatable opportunity to lead the market and achieve a great advantage over competitors. As DI matures, its performance improves over

time and, once it has matured, it reaches and conquers the mainstream market. DI creates new preferences and less hierarchical consumption, becoming more popular and so influential in these markets that it changes consumer behaviour. Therefore, DI achieves global acceptance over time and produces significant changes in the mainstream market, thereby affecting the incumbent's leadership and generating significant challenges that the incumbent must overcome.

DI can displace incumbents (Tellis 2006; Christensen, Raynor, and McDonald 2015; Feder 2018) if they are either unable to recognise DI or are sceptical about its impact (Schmidt and Druehl 2008), meaning that they struggle to make sense of and respond to DI (Kammerlander, König, and Richards 2018). Although incumbents have built a brand reputation that consumers value, DI enjoys widespread acceptance among consumers from different markets. Thus, many incumbents have implemented strategies to improve their organizational innovative capacity to develop DI (Das et al. 2018). Considering that there is no "one size fits all" formula for developing or responding to DI (Christensen et al. 2018), it is crucial to gain knowledge of the factors that incumbent firms consider key to DI development.

Despite DI's strong influence on the market, Ansari and Krop (2012) argue that some incumbents have been able to adapt and maintain their leadership, using examples of DI, and have incorporated this innovation into their products or created their own networks, such as in cases related to the Internet, mobile telephones, photography and computing, among others.

Analysing the previous academic literature on DI enablers, we found that, in order to facilitate DI, it is important to take into account organizational aspects such as structure, culture and resource allocation (Wan, Williamson, and Yin 2015). Yu and Hang (2010) identify the following enablers of DI: human resources; organizational culture; resource allocation; organizational structure; context and environment; customer orientation, and technology. As the market evolution of disruptive innovations is unpredictable

(Govindarajan and Kopalle 2006), clearly identifying these factors can help incumbents fend off disruptive innovation threats and increase the likelihood of taking on the role of disruptors.

This article aims to answer the following question: What are the main management priorities, key factors, and challenges for incumbents in relation to tackling disruptive innovation? Our goal is to provide useful insights for management practice, which can help scholars and practitioners reduce the complexity of the phenomenon of disruption. Our focus on DI forms part of a study that analyses DI theory and its influence and effects on incumbents in Spain. We therefore drew upon input from top innovation managers of Spanish incumbents to answer our research question.

In view of the fact that innovation is needed, primarily for survival in uncertain economic circumstances, and that the concept of DI is complex to grasp, a minority of companies maximize their capacity to develop DI (Assink 2006b). Therefore, in dealing with DI, this study makes three contributions. First, it shows the main management priorities taken into account by incumbents when tackling DI, as well as the key factors and challenges that they have to deal with when developing DI. These findings contribute towards the search for common strategies, concerns, and challenges in relation to DI theory. Second, we provide an analysis of elements, such as quality and price, to know which is more important to develop DI, with insight into incumbents in Spain, analysing why some incumbents prosper while others fail in their efforts to develop DI. Third, this paper contributes towards the development of DI theory and assists managers in accelerating the adoption of new customer approaches with the aim of achieving market disruption.

After this introduction, this article is structured as follows: firstly, we set out the methodology used in conducting our research; secondly, we report the results obtained from our fieldwork to answer our research question; and finally, the last section focuses on conclusions.

4.2 METHODOLOGY

4.2.1 Research Context

In this paper, we examine the application of DI theory by a sample of incumbents in Spain. In this country, as in many other places, the roles of innovation and human capital are key to remaining competitive (Banco de España 2019). Spain is a developed economy, ranked as a moderate innovator country in the European context (European -Commission 2020). According to a report by the Spanish Statistical Office (Instituto Nacional de Estadística, INE), domestic R&D expenditure increased by 4.2% in 2019, to reach 15.572 million euros 1.25% of GDP (Instituto Nacional de Estadística-INE 2020b). This is around half the average rate for the European Union as a whole, at 2.19% of GDP in 2019 (Eurostat 2020). Thus, investment in R&D in Spain is low compared to other countries, such as Germany, France, Italy and the United Kingdom (COTEC 2019). With a population of 47,450,795 in 2019, it is the fourth most populous of the 27 countries of the European Union (Instituto Nacional de Estadística-INE 2020a).

In the race to be competitive, Spain has numerous companies, universities and research centres with a significant rate of patent production (Medina, Cano-Kollmann, and Alvarez 2020). According to official statistics from 2019, of the 1,340,415 companies in Spain, 4,871 (0.36%) were classified as incumbents, i.e. have more than 250 employees. Self-employed workers represent 53.6% of companies, micro-businesses 39.8%, small companies 5.5%, medium-sized companies 0.9% and large companies 0.2%. Of a total of 14,207,815 employees in the business sector, 5,622,756 (39.57%) work for incumbents, i.e. well over a third (Report of Ministerio de Trabajo 2019).

4.2.2 Data collection

As mentioned above, we conducted a qualitative study to identify the main management priorities, key factors, and challenges for Spanish incumbents with respect to tackling disruptive innovation. As qualitative research is “*accepted and well-known in the social sciences*”, it commonly uses its own questionnaires or instruments, making each study unique (Creswell John W. and Creswell David J. 2018).

We believe that a qualitative study enables us to develop a meaningful and theoretically compelling insight into the impact of DI on business. We opted to use grounded theory as it gives the option of creating, extending or confirming the existing explanatory power of theory. It has also been suggested that research into the actions, interactions and social processes of people (Creswell 1998) is most effective when the concepts or phenomena are not well understood (Christensen and Raynor 2003; Khavul, Chavez, and Bruton 2013). Using the principles of grounded theory, researchers can examine the views of the main actors in order to understand their experiences (Suddaby 2006). Khavul et al. (2013) highlight that, when using grounded theory, it is important to ask “*What is going on here?*”, so this question was intrinsic to our analysis.

Interviews. We decided to obtain information from incumbents by conducting interviews, which we view as a “*professional conversation*” designed to capture the interviewees’ experiences, perspectives, language and concepts (Rubin, H. J. , Rubin 2012). The interviewees are “*the experts on their experiences, views and practices*”, thus, they can give us rich information about their defined environments (Braun Virginia and Clarke Victoria 2013). Interviews are also dynamic, constructive tools that foster knowledge transfer, thus further supporting our decision to use them in our study.

We contacted a sample of top managers involved with innovation in different sectors in order to learn about their first-hand insights into the role that DI plays within their organizations and analyse the multiplicity of perspectives that we expected to encounter. Given our interest in conducting face-to-face interviews, a qualitative protocol was developed (Creswell John W. and Creswell David J. 2018) that involved semi-structured interviews in order to identify relevant variables related to a wide range of perspectives, thoughts, reactions and actions in the incumbents' DI-related practices.

We chose semi-structured (unstructured and non-standardised) interviews (Saunders, Lewis, and Thornhill 2016) so that we could develop a list of key topics and questions to be covered, but have the freedom to omit certain questions, or vary their order according to the context of each interview (Fischer and Reuber 2011; Saunders, Lewis, and Thornhill 2016), as we were open to comments from our interviewees about the topic. Moreover, as we contacted top managers from different incumbents and sectors, this gave us the option to adapt each interview to the context of each specific incumbent.

Our semi-structured interview protocol began by formulating an initial cluster of research questions based on research articles on the phenomenon of disruption (i.e. Yu and Hang 2010; Christensen, Raynor, and McDonald 2015; King and Baatartogtokh 2015; Hopp et al. 2018b; Martínez-Vergara and Valls-Pasola 2020). We sent this first draft to two external experts in innovation in order to check their degree of agreement and make our questions more reliable. Their feedback was used to reformulate certain questions and refine the interview script in order to gather information and reflect on the topic. This process resulted in 24 questions, divided into six sections: the use of the term DI; the effect of DI on the incumbents' operations; strategies to compete with DI; competitive profile of the incumbents; management towards DI; and innovation activities based on DI

theory. Each section included from three to five questions and the interview was scheduled to last 45 minutes.

Selection of Interviewees. The list of incumbents was taken from records of innovation managers of big companies who had attended innovation events in the region of Barcelona (Spain) in recent years. We used three sources: first, the so-called “Innovation Meeting” held at a university in the region; second, managers who have participated in events organized by Co-Society, a private network that promotes business innovation; and finally, attendees of business events related to innovation organized by the regional government. We deliberately chose interviewees from different sectors to make sure that we were covering the perceptions of as broad a diversity of innovation managers as possible. We then sent emails to 31 innovation managers (Chief Innovation Officers, or similar) of incumbents to invite them to participate in our research. If we did not get a reply, we made a second request and, if this also failed, in some cases we tried to contact them by telephone. Eventually, 20 innovation managers agreed to participate in our research.

Interviews conducted. Semi-structured individual face to face interviews were conducted at the workplaces of 19 innovation managers and one was held by Skype. All the interviews were conducted in Spanish. A confidentiality agreement was signed by both parties before each interview began. The interviews lasted an average of 44 minutes. Only one innovation manager did not consent to the interview being audio recorded, in which case we made notes during and after the interview. In specific cases, we made notes immediately after finishing an interview in order to highlight emerging concepts.

4.2.3 Data analysis

Our data collection began in April and ended in December 2019. To protect the anonymity of the interviewed top managers, they are hereinafter identified as “interviewees.” Table 4.1 provides a detailed description of the interviewees.

Position*	Gender	Type of Incumbent	Business Activity
Chief = C	Male = M	Multinational	
Head = H	Female = F	Company= MNC	
Director = D		Big Company= BC	
President of Company = P			
Managing Director = MD			
D	F	MNC	Biotechnology
H	M	MNC	Nutrition
D	M	MNC	Infrastructures and engineering
D	M	MNC	Sanitary products
D	M	MNC	Building industry machinery
D	F	BC	Management of water and environment
D	M	BC	Manufacturing tools and machinery for the building industry
P	M	BC	Food industry and distribution
D	F	MNC	Energy
D	M	MNC	Pool & wellness industry
D	F	MNC	Laundry machinery
D	M	BC	Food services
D	M	BC	Professional sports club
D	F	MNC	Telecommunications
C	M	MNC	Car industry supplier
D	M	MNC	Car industry manufacturer
D	M	BC	Technological services centre
D	F	MNC	Industrial gases (Air products group)
MD	M	BC	Hotel industry
D	M	MNC	Technology

*According to the business cards of interviewees

Table 4.1. Characteristics of the “Managers” interviewed

As shown in Table 4.1, our 20 interviewees were all top managers. “*Top managers' power plays a key role in strategic decision-making*” (Finkelstein 1992), in order to achieve a planned organizational change as initiators and/or executors thereof. Sadiq et al. (2020) define the concept of managers'

disruptive innovation activities (DIA) as their “*synchronized and focused efforts that stress on initiating and/or exploiting the DI process,*” highlighting the managers role to “*generate and nurture DI.*” These previous studies underline the importance of managers for fostering incumbents’ DI as they may encourage commitment with regard to DI challenges.

In terms of gender, 15 (71.43%) of the interviewees are men and 6 (28.57%) are women. Watanabe et al.(2017) examined the roles of women and men and the benefits of gender equality in decision-making, in that study 17% of Spanish company managers are women. The participation of women in top management is seemingly growing. The percentage is even higher in our sample, but there is still an imbalance. Saggese et al. (2020) argue that the participation of women in decision-making encourages company innovation, while Glass and Cook (2018) found that a company “*with women CEOs or gender diverse boards are associated with stronger business and equity practices.*”

The 20 interviewees represent a broad variety of economic sectors and they are all classified as big companies according to criteria of the European Union (European-Commission 2015).

Coding and Analysis. In order to analyse the content of the interviews, they were all transcribed using NVivo Transcription. We read each transcript in order to avoid any mispronunciations or incomplete sentences and add the names of the interviewee and interviewer. They all required a second round of verification in which we listened to the recordings again to check for mistakes. Eventually, 295 pages of transcripts were uploaded to NVivo12 Plus software for the organization and analysis of our data.

We used two exploratory methods to code our data: provisional and holistic (Miles, Huberman, and Saldaña 2014). Provisional coding was useful

because we began our analysis with a provisional list of codes, and our research questions played a sensitizing role, suggesting the *a priori* construct of the top codes. As the coding progressed, additional sub-coding or other top codes emerged. Therefore, during our analysis the initial codes were revised, modified, deleted, or replaced with new codes. The second method, holistic coding, is defined as “*a single code to a large unit of data in the corpus, rather than line-by-line coding, to capture a sense of the overall contents and the possible categories that may develop*” (Miles, Huberman, and Saldaña 2014). The use of a single (top level) code permits us to capture frequent ideas from our interviewees. As we wanted to reflect their views and highlight what they said, we prioritized the interviewees’ voices. This meant that other codes emerged as our analysis progressed.

To avoid duplicity and confusion between codes, we used the constant comparative method (Fischer and Reuber 2011), whereby the codes were constantly revised throughout the analysis process, with sub-codes emerging or codes being reordered into other categories. When comparing and contrasting codes, we wrote summaries, notes and memos with our impressions of the interviews. We made sure that the codes were coherently related to one another, which sometimes meant adding, removing or reconfiguring them to ensure they still belonged to each category. We amended the *a priori* defined categories and included new ones as our analysis progressed, as a result of which, our final list of selected codes was segmented into 12 categories as shown in Table 4.2.

Categories	
Managerial priorities	Gathering information Strategic alliances Time to market and diversification Independent unit
Key factors	Technology Human resources Difficult to identify
Challenges	Learning by failing Make bold decisions Consumer's needs
Quest for DI	Quality and price Emerging markets

Table 4.2. Qualitative analysis: categories that emerged from the coding process

4.3 RESULTS

In this section, we present the results obtained, as shown in Table 2.

4.3.1 Management Priorities for Tackling Disruptive Innovation

Gathering information. For 62% of our interviewees, in order to innovate, it is important to have in-depth knowledge of what is happening in relation to their competitors, trends, and the existing competitive advantages in the market, and analysing the degree of impact on its business. For this reason, they invest in gathering external knowledge, using a variety of tools, such as platforms and systems to ensure that they have up-to-date information on the world market in order to reduce the risk of an innovation failing and to

forecast future market positions. In this respect, Laursen (2012) argues that external knowledge plays a part in their own knowledge and helps them improve the quality of products when innovating. Contact with competitors, consumers, technology advances and industry are key factors for innovation. Therefore, external information can help to improve the quality of innovations, the development of new technologies and the identification of opportunities, threats and new markets (Gaviria-Marin and Cruz-Cázares 2020).

In order to develop successful innovations, the incumbents highlighted that the information strategy is very important in the early stage for launching new and better products to the market. As one interviewee said, *“when you have less information and you communicate it badly, there is a greater chance of innovation failure.”* Thus, incumbents scout out strategic information to understand the different needs of markets such as China, Latin America, Europe etc., to gain insight into the context of change, the customers’ environment, business culture, demographic factors, legislation, data protection, environmental pollution and climate change. Such factors are considered relevant when designing a market-customized product or service. One interviewee said that *“innovation has to be tailored to the customer’s needs. If they are accepted, then profits will come.”* Another said that *“understanding the driving forces of change is the first step of making a good change.”* Our interviewees argued that each incumbent has strategic information of their markets and know what is coming. The key issue is which company will be the first to enter the market.

Strategic alliances. All innovation depends on a lot of interactions between internal and external collaborations. Incumbents have to manage these collaborations in order to develop successful innovative ideas. Most of our interviewees are interested in generating strategic alliances and/or making alliances with other industries, suppliers of technologies, university research centres, mega-projects around the world, start-ups, and spin-offs, among

others. Collaboration can be defined as “*active participation in innovation/projects with different types of external partners*” (Hsieh et al. 2018). For most of our interviewees, such a strategy generates huge value in terms of improving their industries, but it also contributes towards risk-sharing, finding innovative ideas to be extrapolated to their business or creating new ones and helping to achieve operational efficiency, as well as contributing towards sharing the diversity of knowledge of the parts, to get better project results. With respect to alliances in the context of innovation systems, Chen and Hung (2016) find that collaborations in formal or informal networks were favourable for sharing new knowledge and creating and shaping supportive system resources. This variety of knowledge boosts business development (Gaviria-Marin and Cruz-Cázares 2020). As one interviewee said, “*we cannot be first-rate professionals in all subjects. So, we believe that the most suitable approach is more alliances.*”

With this approach, incumbents should be able to choose and focus on specific alliances selected strategically. Therefore, strategic alliances form part of their strategic business plans and are considered crucial for survival. One interviewee explained that “*there are sectors that, until now, we had not been interested in, but now we feel that we are not going to survive alone.*” In this respect, alliances enable the incumbent’s partners to take advantage of the reputation of the incumbent’s brand.

Interestingly, the most common answer of our interviewees in relation to partners for strategic alliances refers to start-ups, spin-offs or outsourcing to small companies. In the opinion of over half of our interviewees (55%), the small size of these companies can give them the opportunity to try out a variety of innovations, taking care of the incumbent’s brand identity and sharing knowledge, as well as acquiring insight, increasing the portfolio of products, developing co-branded products, and generating novel solutions. Although some incumbents have created a start-up in-house, in the case of alliances, they have collaborated with start-ups and have shared

responsibilities. They argue that they do not know where next disruption could come from, as one interviewee said that *“we are very attached to the world of start-ups because, if you don’t know where changes might come from, you have to build connections to be able to join the next wave, which you were not able to identify in advance.”* Another remarked that *“start-ups allow us to associate that relationship a bit with what is done elsewhere, things that could be interesting for our organization.”*

Investing in alliances with start-ups allows incumbents to generate different things to experiment and identify the customer’s perspective, especially when launching a new product, without directly affecting the normal activities of the organizations, as well as identifying something disruptive. Our interviewees argue that novel developments usually come through this channel. It is interesting to note that some incumbents who have experience in DI have invested a lot of in start-ups and/or technologies around the world, either buying entire start-ups or collaborating with them in order to have a voice in the future. Rather than a threat, they see start-ups more as a great opportunity to develop new businesses. In contrast, very few incumbents prefer not to follow this trend (alliances with start-ups), because they have not achieved the results that they had hoped for. One of them said that *“although start-ups are an interesting exercise... we have dealt with them and we did not find anything that we have not seen before.”* As a result, this group of incumbents prioritizes the activities of their own research centres.

The interviewees are willing to collaborate with different market players because they recognize that, nowadays, it is impossible for a company to have all the skills required to develop high-impact innovations such as DI. Thus, the bulk of our interviewees (65%) see open innovation (OI), a paradigm defined as *“a distributed innovation process based on purposively managed knowledge flows across organizational boundaries”* that focuses on innovation-oriented interorganizational collaboration (Locatelli et al. 2020) as an important tool for enabling the development of creative innovations. It

is well-known that this approach has changed business policies; as one interviewee said, “*in the past, the laboratory was our world in here. Now, it is a bit like the saying that the world is our laboratory, and we are going outside.*” Another added that “*to create an ecosystem, all types of partners are required: individual professionals and companies.*” Open innovation gives companies more flexibility, greater adaptability, the possibility of taking advantage of expertise, leveraging assets of others and themselves, reducing risk-sharing and helping them to think about innovations beyond incremental innovation.

However, although most of our interviewees consider open innovation as an important approach for developing disruptive innovations, there is a minority of incumbents who choose not to apply it aggressively because their capacity to manage innovation projects could be surpassed, as one interviewee explained that “*the pace is often very different, although you have many opportunities. If they exist, it is like having a lot of food, but if you have a small stomach, you cannot eat it all. There is still food on the table, so this is a stimulus, a challenge that is happening in a company.*” In some cases, these alliances do not give them the desired agility, as the speed at which innovations run does not fit with the new partner. The partners’ speeds can be very different and legal issues may affect many aspects, particularly in relation to the ownership of an innovation.

Incumbents are aware of the fact that there are many opportunities and challenges with respect to taking advantage of the possibilities that open innovation can offer, but this has to be aligned with the incumbent’s capacity to manage alliances and goals. Therefore, some incumbents prefer not to build a lot of alliances that will probably not work, or at least will be difficult to manage.

Innovation pioneers and product diversification. Most of our interviewees argued that incumbents prioritize launching innovations as soon as possible onto the market, because it gives them a positive image and boosts a brand’s

reputation. Although introducing an innovation onto the market is risky, for incumbents, it is important to achieve a short time to market. From a competitiveness point of view, in the majority of industries, incumbents cannot avoid being copied by competitors. As a result, some incumbents adopt a strategy of constantly renewing their products or changing the models to remain different. As one interviewee said, *“this means that, when they copy us, we will have the new version, so they will always be selling an obsolete version.”* This is one the reason that incumbents consider time to market a priority.

Therefore, for 52% of our interviewees, product diversification is important because it makes them much closer to market and enable them to expand their range of products by adding small improvements to the existing products. Therefore, diversification is associated with incremental innovation. Incumbents opt to diversify their products and provide comprehensive packages by adding services to ensure that the consumers are offered everything they could need. Our incumbents therefore explain that, each year, they launch something new to the market, while also updating their existing products with new solutions. In this respect, one interviewee said that *“it means that competitors are not only battling against one product but rather, in the same year, we are launching four or five new products and updates,”* Therefore, updating, diversification and new product development are used to introduce new concepts in order to add value and differentiate the incumbent’s products from the competitors.

Independent units to develop disruptive innovation. Some incumbents have invested intensively in an organizationally independent team within the company focused on finding innovations with a huge impact on the market. Almost 45% of our interviewees have created a specific unit to develop DI separately from their traditional operating activities. The unit has its own budget and works independently from the day-to-day running of the firm, fully autonomous and committed to open innovation. The mission of this unit is to find innovations that can be exploited and deployed within the value networks in which the incumbent operates or elsewhere. Incumbents with

such units consider them to be strategic for the company and, therefore, they report hierarchically to the president of the company. In this respect, one interviewee said that *“it is the enabler that helps us to think beyond continuous improvement to our business lines.”* Another emphasized the importance of *“having a part of the brain and resources of the organization that is not caught up in the day-to-day operations. If you do not set aside some resources, time or brainpower, some time to think or travel, having people who are not completely absorbed in their day-to-day tasks, DI won’t happen.”* Thus, the existence of these units seems to be a strategic factor for developing DI, with one interviewee remarking that *“all the things that are done in this unit are what we could call the most disruptive.”* The interviewees emphasized that that autonomy of this unit is a great intrinsic motivator. They also pointed out that managers have made significant efforts to allocate resources to this unit, with employees, consultancy, and the support of staff executives, thereby enabling employees to develop and enhance professional skills.

Of this group of interviewees, 15% highlighted the need to adopt what one of the managers referred to as a “start-up mindset” or, in other words, a start-up approach or culture in order to develop innovations with a great impact on the market, as DI achieves. As start-ups are more agile, smarter, and more flexible, as well as having a smaller structure, they do not have *“perfect”* products and enable greater diversification and more flexible solutions for consumers. The interviewees explained that adopting a start-up mindset allows them to have autonomy, make their own decisions, tackle all the steps and problems of a start-up, and develop professional skills, as well as undertaking small projects that can be evaluated and generate opportunities to be disruptive. In a review of the literature on start-ups and open innovation by Spender et al. (2017), they found that large firms have started to play a role in start-up ecosystems. Meanwhile, Corsi and Di Minin (2014) argue that the creation of a new small independent company arising from an incumbent has the potential to respond the challenges of DI and cater for a new emerging market. Along the same lines, Christensen and Raynor (2003) have illustrated

the importance of spin-off companies for overcoming the innovator's dilemma.

Despite these strengths, many incumbents consider the start-up culture to be the hardest aspect to achieve, requiring a radical change of mindset. One interviewee said that *“although we have been working for some years with this approach, a start-up culture is hard to achieve. We are improving but the company is a dinosaur, with well-defined processes... so this is something that we are still resolving.”*

4.3.2 Key Factors and Challenges for Developing Disruptive Innovations

Key Factors

Use of technology. All our interviewees identified technology as a key factor for developing DI. They emphasized that the most revolutionary, pioneering, and successful innovations accepted by different markets come from this channel, with one interviewee adding that *“the greatest weight is in digital.”* With this approach it seems clear that, if an innovation involves more technology, it has a greater chance of being disruptive. Therefore, investment on technology is seen by the incumbents as a tool for becoming well positioned technologically and more advanced than their competitors in the market. In view of the fact that information and communication technologies such as mobiles and the Internet have played such an essential role in this period (Suryanegara 2016), most of our interviewees forecast that future DI may come from technologies such as blockchain, the Internet of Things, edge computing, industry 4.0, artificial intelligence and 3D printing, as these technologies are evolving very fast. Although the core business of many of the incumbents is not directly related to these fields, they have invested in these technologies to keep up to date with what is happening in these areas around the world. More specifically, some incumbents predict that these

technologies will generate changes to the market quite readily and may form part of their core business in the future. They argue that these technologies are still in the process of maturing and pending exploitation to discover their full potential value.

While some traditional incumbents are sceptical of big changes in their industries, most of our interviewees explained that they are involved in digital technology innovation projects related to their business or new fields of activity. Moreover, some incumbents have created a digital committee using technological platforms with the aim of identifying relevant breakthrough technologies. They forecast that the use of certain technologies may become mandatory under new legislation in the future. Therefore, the incumbents want to keep a step ahead of the regulations, as well as being more competitive and giving consumers greater benefits. For our incumbents, the use of technology attracts more innovation projects and more consumers than before. Technology generates many advantages for incumbents, such as making them more competitive and robust, reducing costs and the process development time, creating the opportunity to learn useful lessons and make things easier, generating better results and, very importantly, enabling the company to achieve things that were impossible in the past. Technology is crucial for keeping up to date, with one interviewee emphasizing that *“without technology, we are obsolete, there is no progress.”* Another added that *“if you are not able to innovate at a technological level, and not just in terms of knowledge, then the company will not advance and that is very important in our sector.”*

However, it is interesting to note that the technological environment is very important in certain industries, but not in others. Many of our interviewees indicated that they only use new technology in relation to new products, as one interviewee remarked *“we are really doing very new things and we are testing very new, very innovative technologies, but always in order to start new products.”* Another said that *“we can only apply new technology to very*

new projects.” This may reflect the balance that the incumbents want to strike between their core business and new innovation projects. As one interviewee indicated, *“the more revolutionary it is, the more technological investment it tends to involve and the more risk it implies.”*

In contrast, some incumbents wait until the technology has been developed by other industries, and then apply these technologies to their industries, which tend to be more traditional and markets with a slow rate of adaptation to technology. One interviewee explained that *“ours is a market with a slow technology adaptation rate”*, while another interviewee added that *“due to market characteristics, we always wait a while for other sectors to develop technologies that we can apply.”* Another issue to be taken into account is the fact that consumers need a period of adaptation to technologies, so incumbents need to invest in training consumers on the use of these technologies and the benefits of the product. Therefore, some traditional businesses have a slow process of adaptation to technologies and, in addition, this process can lead to more expensive innovation. With this in mind, our interviewees explained that, in more advanced economies, it is easier to implement technologies to products but, in emerging economies, it is more difficult.

Human resources and the role of leaders. Almost half of our interviewees (45%) highlighted that human talent; aspect like knowledge, experience, and professional skills are key factors in the creation of an innovation. One interviewee emphasized that *“innovation is inherent to ideas and ideas are inherent to people.”* Another interviewee said that *“knowledge, retaining knowledge, appreciating talent, I think that all this type of people-centred management makes a very big difference between one company and another.”* Another interviewee said *“professional skills are important. You need people to have knowledge and experience, who know what they are talking about so that they can ultimately apply that knowledge in a combined way and disruptions can eventually emerge.”* Therefore, incumbents are keen

to build strong multidisciplinary teams and to attract and recruit talented workers and knowledge from around the world. However, some interviewees argued that this is a complicated task. The previous arguments reinforced the employees' key role as the most important resource in any company (Rodríguez-Sánchez et al. 2019).

In the opinion of some of the interviewees, one important skill is the ability to combine human talent and the use and development of technology. Technologies have obviously played an important role in market disruption. One interviewee explained that *“now, we are increasingly entering areas where we have not traditionally been players or where we do not necessarily have the right skills.”* Finding new skills certainly involves observing other environments in order to expand traditional knowledge. As DI triggers a shift in market demand and competition, it is important that it is accompanied by a shift in mindset and re-engineering our innovation capabilities (Wan, Williamson, and Yin 2015).

Moreover, with respect to innovation, the role of the founder and CEO is another key point highlighted by our interviewees. The visionary leadership of a CEO is a crucial factor for stimulating innovation, as such leadership can encourage workers to focus on important matters. 35% of our interviewees said that innovation as a strategy must come from the CEO, otherwise it will not work. To illustrate this point, one interviewee explained that *“in my previous position (in public administration), I saw companies every day and there were extremely strong R&D managers but, if the CEO did not believe in them, they could not do anything. Therefore, R&D has to be a business strategy (...) Otherwise... it is very difficult to innovate using only a bottom-up innovation strategy, very difficult.”* Another point to be considered here is that, in certain cases, managers from different areas of a company may have to deal with completely different levels of maturity related in terms of innovation in their own area. Therefore, the role of the leader and their DI vision can merge the goals from different areas into one main objective and increase the likelihood of making DI possible. Along these lines, Christensen and Raynor (2003) argue that founders play an important role in developing

DI as they have the authority to take action to explore, develop or override established measures. Likewise, Yu and Hang (2010) argue that “*company founders have been observed to perform better than professional managers in disruptive innovations, but there are no empirical tests yet to prove this argument.*” Some answers of our interviewees partially confirm this idea.

Identifying key factors of disruptive innovation is not an easy task. Although the interviewees acknowledge that DI is a powerful type of innovation, a minority of our interviewees commented that it is difficult to identify the key factors that can help them to develop it. Mystery, courage, luck, spontaneity, curiosity, faith, obsession and thinking about new solutions were mentioned as potential drivers for achieving disruptive innovations.

Challenges

Learning by failing. A common belief of our interviewees is that any innovation has its history of failures and that the story of successful innovations is full of simplifications. Our interviewees identified themselves as “innovating apprentices”, arguing that, without mistakes, innovation does not exist and that, in the process of innovating, analysing and learning from errors is a crucial factor. One interviewee said that “*as a rule, in innovation, a significant number of things have to fail*” Another said that “*making mistakes is a normal part of the innovation culture*”, as is learning from the errors made by competitors. As one interviewee said, “*the seed often comes from the competition, when something is launched and launched badly, and you have to know how to learn from your mistakes and those of the competition.*” The analysis of mistakes and the market response to innovations by competitors enables incumbents to improve and focus their efforts on producing a product or service that meets consumers preferences better. Therefore, an in-depth analysis of innovation failure is important.

Make bold decisions. Our interviewees describe themselves as risk-takers. Despite making mistakes, they opt for innovations. However, it is interesting to note that some interviewees argued that DI requires bold decisions with respect to launching innovations that customers are unaware of but which, someday, will attract a crowd, as one interviewee said, “*sometimes, you have to make brave decisions and say ... OK, ... European consumers cannot see it now, but they will see it because that is a characteristic of disruptive innovation.*” One incumbent with experience in DI said that developing DI has a lot of merit, because figures at the beginning are discouraging, adding that “*this is so but, for many years, the business model did not work and because of the cost of living, we were on the verge of not continuing, because money was being lost. It was very hard at first. In other words, the fact is that they are merit issues but, for a long time, as the numbers were not working out, we were saying, well, this just has not taken off (...) so they have often had to survive through moments of major existential crisis*” and this interviewee also argue that, many times, DI required an act of faith and belief that something different could be successful. This incumbent described four stages in the process of achieving a disruptive innovation:

Stage I. Launching an innovation that, in time, will disrupt the market is very risky and requires bold decisions.

Stage II. The failure of a new product. DI at the beginning has not been accepted by its consumers and has low or zero profitability or, in the worst-case scenario, the figures are negative. Therefore, the innovation runs the risk of being isolated and alone. But trying to survive puts lots of pressure on the brand’s reputation because it damages the level of customer trust.

Stage III. Sales growth: over time, the innovation improves with greater sophistication and the use of digital technology (Internet) to the point that it becomes profitable. DI frequently offers long-term growth significantly higher than other types of innovations.

Stage IV. Stability and profitability: DI achieves maturity and conquers a larger number of consumers, making far higher profits than other products.

As far as this incumbent is concerned, DI requires faith, conviction, a lot of time, luck, merit, risk, making headway on your own, and unattractive profits at the beginning, as well as putting the incumbent's reputation at risk. The return on DIs are highly uncertain, so the outcomes of such innovations are often not aligned with the company's goals in terms of returns in the short and medium term.

The role of consumers. Some of our interviewees argue that disruptive innovations do not arise from asking customers what they want. For instance, one interviewee said that for “*disruptive innovation, think that the consumer will not give you the solution*”, while another quoted Henry Ford: “*if I had asked people what they wanted, they would have said faster horses.*” One incumbent with experience in DI explained that “*disruptive innovation goes beyond understanding the customer, it is about creating new customer needs.*” These arguments are aligned with one type of DI, new-market disruption, because it focuses on creating new consumption (Christensen and Raynor 2003), due to the fact that this innovation has the power to making potential customers “*realize that they have needs of which they may not have been aware*” (Hang, Garnsey, and Ruan 2015). Here, it is important to emphasise that DI is a novel solution or an effective answer to all segments of the markets (low-end market, mainstream market and high market), offering less hierarchical products, available product or services at affordable prices, such as Netflix, smartphones (Christensen, Raynor, and McDonald 2015), Airbnb (Guttentag 2015), Uber (Tham 2016), the Internet and E-books (Parry and Kawakami 2017). DI entails developing less hierarchical products or services for all segments of the market, creating new needs that did not exist before or catering for the needs of low-end segments of the market.

In contrast to the previous outlook, a minority of our interviewees argue that, in order to develop DI, it is essential to have more in-depth knowledge of the consumers' needs and the market than competitors and to break certain paradigms with respect to the consumers' needs. It is well known that many

innovations end in failure because they are not properly tested with consumers. Therefore, in a DI-oriented approach, companies focus on observing what the others do not see in order to identify a “*problem*” and propose solutions to these issues. Without a doubt, consumers being involved in the innovation process helps incumbents to create an innovation that better caters for their needs. However, to develop DI, it is important that incumbents not only consider the needs of their current consumers in mainstream markets, but also the preferences of consumers from different markets who value lower price and products that are good enough in the basic capabilities, i.e. a “good enough” product (Christensen 1997; Reinhardt and Gurtner 2018). Figure 4.1 shows approaches taken into account when developing DI.

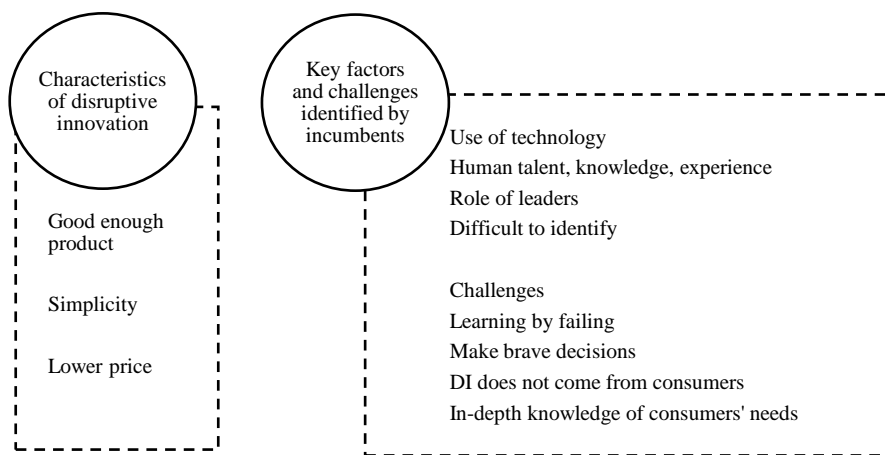


Figure 4.1. Approaches to develop disruptive innovations

4.3.3 Quest for DI

Quality and price

All of the interviewees argued that their products or services are driven by quality attributes. Quality is taken for granted and is seen as a must. One interviewee remarked that “*to be competitive, our products must be good*”

quality and be the best products in terms of quality at reasonable prices.” Although greater quality at lower price is always commercially sound, incumbents are aware that consumers typically want better quality, more functions and more attractive pricing. One interviewee explained that *“innovation enables us to offer better prices ”* Therefore, these issues are seriously taken into account in the innovation processes of incumbents, striving to achieve efficiency in their operations and processes with the aim of reducing costs to be reflected in moderate prices.

While our interviewees explain that each innovation takes into account a moderate sale price, they argue that people are willing to pay more for products if they perceive that a product has greater value than others, regardless of the type of value. In this respect, one interviewee remarked that *“consumers do not want to pay less; they do not want to pay more for the same products in the market. If consumers are able to find the same products at lower prices in the market, they will obviously choose to pay less for products and services.”* They also emphasized that consumers can be compensated by different solutions, particularly when their competitors do not offer those solutions. In such cases, the price is not so important.

With this approach, price is part of the decision-making process, but quality is a requirement that has to be guaranteed through innovation. Robbins and Coulter (2018) define quality *“as the ability of a product or service to reliably do what it is supposed to do and to satisfy customer expectations.”* Incumbents therefore prefer to prioritize product quality over than price, because they know that mainstream consumers want quality and greater reliability. As one interviewee explained, *“we have tried things out that are different, and the price has not been among the ten main requirements.”* They consider price to be more important when the product is mature in the market, because a *“mature product”* is of good or acceptable quality, but price is not such a relevant factor with new products. This means that the incumbents are

more interested in innovation activities focusing on product quality, reliability, and good performance.

One conscious assumption of our interviewees is that DI does not consider lower prices to be a relevant issue. They do not associated DI with factors such as lower price and good quality, as one interviewee noted *“I have doubts referred to whether a DI can be related with factors such as low price and good quality”* while another argued that *“in order to develop a DI, price is not a determining factor. Consumers buy DI because it is fashionable and cool, it works well and it is safe, etc.”* Such a scenario does not favour the development of one type of DI, low-end disruption, but it may favour new-market disruption because it focuses on creating new products that will generate new consumers. New-market disruption competes with non-consumption because this type of innovation creates new needs through a product or service with unique characteristics, making it more attractive to consumers in the whole market (Dedehayir, Ortt, and Seppänen 2017) Well-known examples of high-end disruption with higher prices include mobile phones (Govindarajan and Kopalle 2006).

Another issue that has to be taken into account is the fact that an expensive product can be more profitable, because it does not need to be sold in great quantity in order to reach a similar profitability to a more traditional product. This is an additional attractive point for incumbents as well. Incumbents take care of their brand and reputation with a management approach focused on ensuring the level of product quality, and they want to expand their market through the introduction of quality products that contribute to the company's brand image. Perhaps another common assumption of our interviewees is that a cheaper product is perceived as low quality. With respect to this perception, one interviewee asked whether we *“think that something cheap is no good.”* The manager of one incumbent with experience in developing DI explained that *“rather than creating a perfect product, which is what we did before, we now put our customers at the centre of our activity, and we try to reach them*

as quickly as possible.” This approach is apparently opposed to previous arguments but, in fact, it follows a business-like strategy that focuses on conquering mass-market customers.

Here, it is important to consider that some multinational or large companies operate in extremely competitive industries. They have very few large competitors and their sole focus on prioritizing quality standards means that do not typically compete head-to-head with other rivals, such as entrants who frequently develop DI (new products) to cater for the unsatisfied needs of consumers (especially in emerging markets). They are confident of their leadership and their privileged status in global markets. However, entrants can undermine the leadership position of incumbents because they see a business opportunity in low-end market segments, offering “good enough” products and lower prices. These products evolve over time and eventually conquer the main market in which incumbents operate (Christensen 1997). Therefore, DI theory warns incumbents of how they can lose their leadership positions due to oversupplying their customers and underestimating the threat of new competitors, such as entrants. To avoid this situation Parry and Kawakami (2017) suggest that “*a more effective approach might be to educate existing stakeholders about the ways they can benefit from lower prices to consumers.*”

In our analysis of the interviews, another important assumption raised in relation to DI was that the interviewees insisted that quality and low price can be both favourable and unfavourable, depending on the type of market. One interviewee noted that “*everybody likes quality, but the price of the products makes them unaffordable in some markets.*” In other words, in more advanced economies, quality can be more important than price, while, in emerging economies, lower prices may be prioritized. The incumbents operate in the worldwide market, which is enormous and formed of a large population with varied needs. One interviewee even said that “*the market is huge and, depending on what type of product, there is a market opportunity.*” However, to develop DI, incumbents need to have in-depth knowledge of both types of economies, taking into account the fact that some examples of

DI originated in emerging economies (Hadengue, de Marcellis-Warin, and Warin 2017) and can be “*sources of innovation*” (Corsi and Di Minin 2014) as they are more affordable, easy to use and simple, as well as offering a “good enough” product, its performance continuously improve and eventually is accepted by the global mainstream market (Christensen and Raynor 2003; Si et al. 2015).

Therefore, there is a huge challenge for incumbents in view of the fact that DI arises as a result of efforts designed to respond to the unsatisfied needs of customers, high prices and the oversupply of products. With respect to this challenge, Corsi and Di Mini (2014) argue that “*The new challenge of the twenty-first century has been identified in the profitable development and sale of new products for the mass markets of less affluent populations of emerging economies that are currently not, or only partially, served by multinational corporations.*”

Quality at lower price is a complicated task for incumbents. As incumbents are committed to delivering quality products, lower-price innovations are a huge challenge for them. It should be noted that the high level of competition among incumbents may drive the price of products down, as the variety of products in the mainstream market is so vast that consumers can change from one product to another. Thus, incumbents want to differentiate themselves from their competitors by resolving problems in different ways while, at the same time, developing strategies that reinforce their consumers’ identification with the values of the company. With respect to this commitment to delivering solutions without increasing the sale price to consumers, one interviewee emphasized that “*innovation does not mean increasing the price to consumers.*” Another explained that “*quality is an obsession, quality is not an issue to be discussed, the battle is reducing cost and improving product quality.*” Another interviewee expressed a similar view, saying that “*we are constantly under pressure for highly competitive products from two angles: on the one hand, quality, and on the other, price.*”

These findings suggest that offering quality at a moderate price is a big pressure for incumbents. Companies have made huge efforts to find a way to make innovations affordable, striving to strike a balance between resources and a moderate price for consumers. This balance is not only designed to maximize the incumbent's return on the investment made in each innovation, but also to ensure the population's well-being. Therefore, product quality, price and profits are mainly analysed. For instance, for some incumbents, the use of technology helps to improve the quality of the innovation and has the potential for significant benefits, including lower prices, thereby making it more attractive to consumers.

Emerging markets

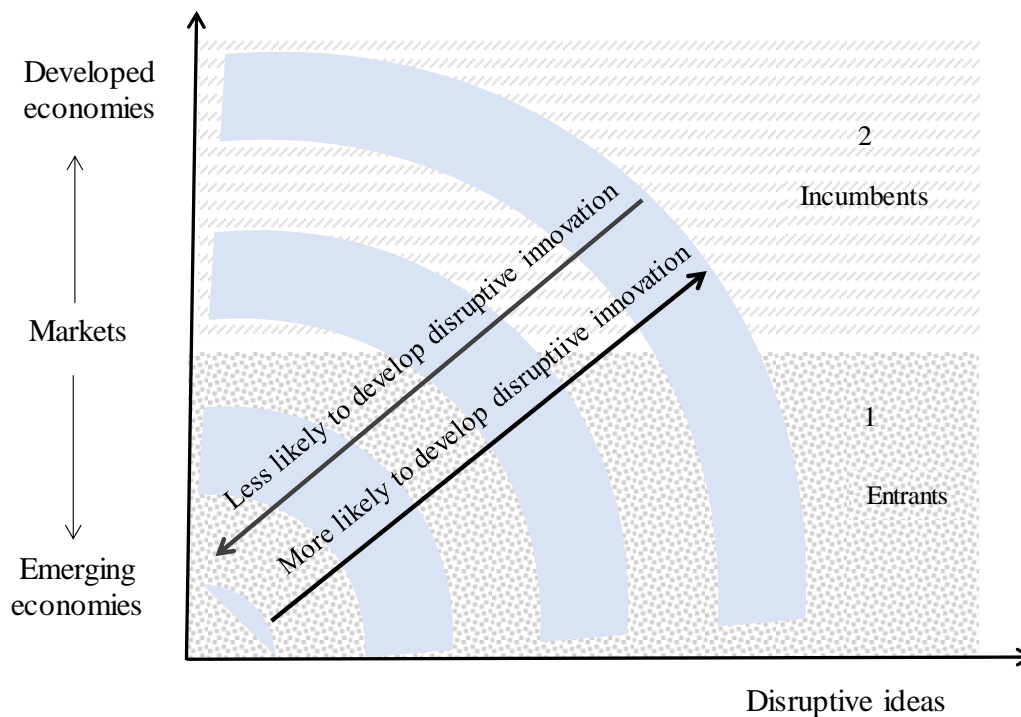
As the majority of our incumbents operate globally around the world, they pay close attention to emerging markets such as Asia, Africa and Latin America because they are interested in new technologies that may emerge from these markets, as well as finding novel solutions. However, some incumbents argue that it is hard to add technologies emerging from these markets to their products or operations due to the high cost of implementation and because they are not mature enough. In other words, some innovations do not meet the product quality standards demanded by mainstream market consumers. One interviewee explained that *“until now, the part of a very new technology is coming but where they are failing is with the issue of quality standards. That is where they're failing.”* Therefore, in their experience of launching innovations from emerging markets in the mainstream market in which they operate, these innovations did not last long because they were unsuccessful, despite seeming innovative. It seems difficult to predict the specific impact of an innovation from an emerging market on the incumbent's mainstream market.

From this perspective, they carefully apply a “*trial and error*” approach when analysing the viability of introducing an innovation from those markets. It is therefore unsurprising to find that incumbents are more interested in emerging markets in terms of investing and selling their own products, rather than finding or introducing innovations aimed at the mainstream market. As one interviewee point out it, “*yes, invest in new markets if they are more investment projects rather than innovation projects. In other words, we are going to look for customers in India or Mexico and set up an open innovation venture delegation, not to innovate but rather to sell.*” Another added that, “*yes, of course you look at the strategic information to see what is happening in the markets where you want to sell or are selling.*”

For many years, it has been argued that high-income countries have a strategic advantage over emerging countries as they do have the right kind of companies to foster innovation. In contradiction to this idea, the reverse innovation theory suggests that creative ideas may come from emerging markets and reach more developed countries later on. China and India are considered examples of hotbeds of innovation (Hadengue, de Marcellis-Warin, and Warin 2017). Low-end disruption takes place in the context of low-end markets in which consumers have a lower purchasing capacity (Christensen and Raynor 2003). Thus, emerging markets can be a source of DI because they have an incentive to devise innovations at a lower price, with a different set of features, performance level and new functionalities. In a study of DI and reverse innovation, Corsi and Di Minin (2014) argue that “*DI is conceived and adopted in emerging economies first to then be introduced to developed markets.*” They also point out that DI is less likely to come from developed countries and, if it does, it is less likely to be adopted in emerging markets. Want et al. (2015) argue that emerging markets are a source of many DIs, as these innovations are adapted to demand from customers with low incomes, encouraging entrepreneurs and companies to think about products at a lower price for these pockets or a new business model to satisfy a mass-market segment. Therefore, emerging economies are seen as the new

laboratory in the global economy. From this perspective, the innovator's dilemma can be solved in inasmuch as incumbents show interest in developing DI by exploring an emerging business and exploiting an existing business, at the same time (Christensen et al. 2018).

There is obviously pressure from emerging markets in relation to DI, especially from Asian markets. These markets introduce innovations at a lower price than the incumbents. To tackle this issue, incumbents basically offer products or services based on the standards of good quality and other extra services or, in other words, integral solutions. The interviewees argued that, although the price is higher, their consumers value the integration of these two aspects (products with integral solutions). However, one interviewee warned that companies in emerging economies are improving the features of their products to be accepted by other markets. One interviewee remarked that *“of course, there are a lot of European companies that manufacture in China. They are also implementing quality standards. So, in the end, they learn. It really is a problem.”* Another added that *“they are improving a lot in terms of user perception as well. They are integrating very cheap solutions but that make you perceive that they might have the quality, but yes, they are good at that.”* Figure 4.2 shows the contrasts between developed and emerging economies with respect to developing DI.



(1) Entrants' innovations are aimed at offering a different alternative to the incumbents' oversupplied products, exploring unmet needs of lower segments of the market, discovering or creating new consumption focusing on simplicity, satisfactory performance, affordable prices and unique characteristics rather than quality standards and profits.

(2) Incumbents' innovations are usually aimed at their mainstream market, taking into account incremental innovation and quality standards rather than exploring other segments of the market with different needs. Disruptive innovation theory suggests incumbents create a new area -independent of normal activities in order to explore other markets.

Figure 4. 2. Contrasting the two types of economy with respect to developing disruptive innovation

4.4 CONCLUSIONS

This article examines the factors considered most important for developing DI by a sample of 20 top managers from incumbents in different industries in Spain. Face-to-face interviews were carried out. We analysed the main

management priorities and key factors and challenges involved in tackling disruptive innovation by Spanish incumbents. Based on these findings and insights, our analysis offers an opportunity to learn from the previous experiences of incumbents but is also a useful starting point for new research on the effects of disruptive innovation within companies.

Our study makes contributions to disruptive innovation theory and its management implications (common strategies, concerns and challenges for developing DI), highlighting key factors and challenges for developing this type of innovation and contextualizing why issues such as quality and price should be analysed when developing disruptive innovations.

Management priorities. We identified key management priorities performed by incumbents to obtain and maintain a high level of leadership in the market. To start, external knowledge is identified as a key factor for the incumbent to tackle any kind of threat. Therefore, incumbents are constantly assessing and monitoring what is happening around them because they need to be continually on guard to protect their leadership. In this respect, Sultan et al. (2013) argue that “*making the most from their knowledge has always been organizations’ Holy Grail.*” Focusing on information is important for the development of innovation assessments, as knowledge is a key element of the innovation process (Mendoza-Silva 2020). In fact, for many incumbents, developing high-impact innovations involves interacting with different actors in the market, such as other incumbents, start-ups, technology companies, universities, and research centres, among others. Thus, the existence of strategic alliances and open innovation are considered important factors in developing breakthrough innovations.

However, collaborations not only allow incumbents and partners to gain benefits for carrying out innovation projects, but they also enhance the company’s ability to integrate knowledge from their partners and encourage incumbents to make changes in their organizational structure. Our research

shows that the preferred alliance partner for developing DI is start-ups, in view of their characteristics. In fact, most incumbents combine their involvement in collaborative innovation projects with their own main activities. Therefore, the balance their own interests and their partner's forms part of strategic decisions on innovation. In their efforts to maintain their leadership position, our incumbents prioritize time to market and apply a strategy of product diversification.

As incumbents operate in a turbulent business context, all the above-mentioned strategies they use strive to maintain their market leadership, rather than develop DI. However, almost half of our interviewees have created an independent unit to develop disruptive innovation, the aim of which is to think outside of the box and identify external opportunities, fully focused on developing high-impact innovations such as DI. In some cases, this unit adopts a start-up philosophy, but embracing this approach is a major challenge due to the incumbent's goals and the mindset of the people. Therefore, the most important of these approaches is clearly to have an independent unit and to make alliances with start-ups, which can give the company major potential for developing DI.

Addressing key factors for developing disruptive innovations. Our findings show that the role of technology is highlighted as the most important factor in developing DI. Although many incumbents do not feel the direct effect of DI in their industries, many of them predict that future DI will come from technology. As such, this is very attractive for many innovation projects, new businesses, and investments. Another factor that incumbents emphasize is the role of human resources, particularly professional skills related to technology and the role of the CEO in terms of encouraging breakthrough innovations. Meanwhile, some incumbents found it difficult to identify key factors for developing DI. Mystery, courage, luck, spontaneity, curiosity, faith, obsession, and thinking about new solutions were mentioned as potential

drivers for achieving disruptive innovations. These findings reveal an unacknowledged aspect of the principles of DI theory.

Challenges for tackling disruptive innovation. A common point raised by the interviewees with respect to the challenges of developing disruptive innovations was the importance of the following issues: accepting mistakes, the learning process, making bold decisions and catering for their consumers' needs or the ability to create new needs. With respect to analysing errors, incumbents are under pressure to show results in terms of quality, time and profitability in the short and medium term. However, DI requires time; its goal is not profitability, at least at the short term and, in the beginning, it offers a "good enough" product or service. These aspects are contradictory to the incumbent's goals, which focus on high-quality innovations, greater profitability, and shorter time to market. Therefore, failure analysis is based on what incumbents know and experience, and mainstream consumer preferences may provide the wrong basis on which to develop disruptive innovations.

Quality and Price for Developing Disruptive Innovations. DIs strive to achieve low prices and develop "good enough" product, offering novel solutions to consumers in different markets. For many incumbents, a DI can be expensive and too risky, given their image of quality products and good reputation, as well as the fact that they are subject to several quality requirements from mainstream market customers. Therefore, for our incumbents, the quality of their innovations is a priority when innovating. Moreover, price is more important when the product is mature in the market but, in the case of a new product, the price is not so relevant. In this respect, the evidence shows that incumbents want to develop innovations with new value in a context in which quality and innovative solutions can seduce consumers through their qualities rather than the price.

The idea that “*quality greatly affects the perceived functionality of the product*”(Berg et al. 2020) strongly influences the incumbents’ level of interest in developing disruptive innovation. This approach may particularly favour the development of one type of innovation: new-market disruption. This is because incumbents want to develop DI with more value and create new products and, in such cases, price is not the main driver. This implies that incumbents should pay attention to emerging markets in which the needs are different from the mainstream market in which the incumbent operates. The needs of low-end segments of the market, emerging markets, and consumers’ needs in different markets can give insight into about key factors for developing DI.

Finally, our research shows how incumbents approach DI. There is a notable trend towards harnessing examples of DI more than seeing a direct effect of DI as a threat to their existing business. Many incumbents are interested in developing disruptive innovation technologies, taking into account the fact that such technology is in the process of achieving maturity and establishing its power in the market. Incumbents who currently operate in a challenging environment and market atmosphere of uncertainty are destined to consider any kind of threat, competitors, entrants and now influencers, who have the role of consumers and competitors because they have begun to compete against incumbents (Blume et al. 2020). Exploring the roots of DI theory and tackling these challenges seems to be an important factor insofar as having another tool for maintaining their leadership and responding to crisis situations.

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CHAPTER 5 | CONCLUSIONS

CHAPTER 5

CONCLUSIONS

The basic aim of this dissertation has been to explore the principles of disruptive innovation (DI) and how it is currently influencing incumbents. Depending on the reader, it has added some or significant knowledge to advance their theoretical understanding of this phenomenon by answering four key research questions, namely: (RQ1) What is disruptive innovation? Exploring its antecedents, definitions, typology, and main characteristics; (RQ2) What business behaviours are adopted by the actors associated with DI (that is, incumbents, entrants and customers)?; (RQ3) How do Spanish incumbents attend to, interpret, and respond to disruptive innovation? and (RQ4) What are the main management priorities, key factors, and challenges for incumbents in relation to tackling disruptive innovation? The answers to these questions were covered in the three research contributions of this PhD dissertation (Chapters 2, 3 and 4)².

It is important to highlight that RQ1 and RQ2 covered in chapter 2³ integrate the existing literature on DI and address aspects of the theory that have not been adequately addressed before. Meanwhile, RQ3 and RQ4, covered in chapters 3 and 4, respectively, are not only motivated by a gap identified in the literature, but also by an interest in reflecting the effects of DI in the “real-world” of business, which was useful to stress the importance of the topic for research and/or practice. Therefore, this dissertation provides more extensive discussion of this theory and its influence on incumbents through the four research questions answered. The findings are fresh and represent the very latest information available on DI. Following a logical sequence, and

² Chapter 2 was published in “European Journal of Innovation Management”, impact factor 1.98- JCR -Q2. Chapter 3 was submitted to “Journal of Product Innovation Management”, impact factor 5- JCR - Q1, status – Under review (first round). Submission of Chapter 4 to a journal is to be decided after receiving a response to the 1st round evaluation of Chapter 3, because this chapter and chapter 4 have been prepared following the “author guidelines” of the same journal.

³ The conclusions section of chapter 2 has no “discussion” due to the different nature of the research work compared with the other two chapters.

cumulative research throughout the different studies presented, this dissertation makes rich and varied contributions to the literature on DI theory. Figure 5.1 reminds the reader the structure of the dissertation. Our three research contributions (Chapters 2,3,4) will nurture the different sections of this final chapter.

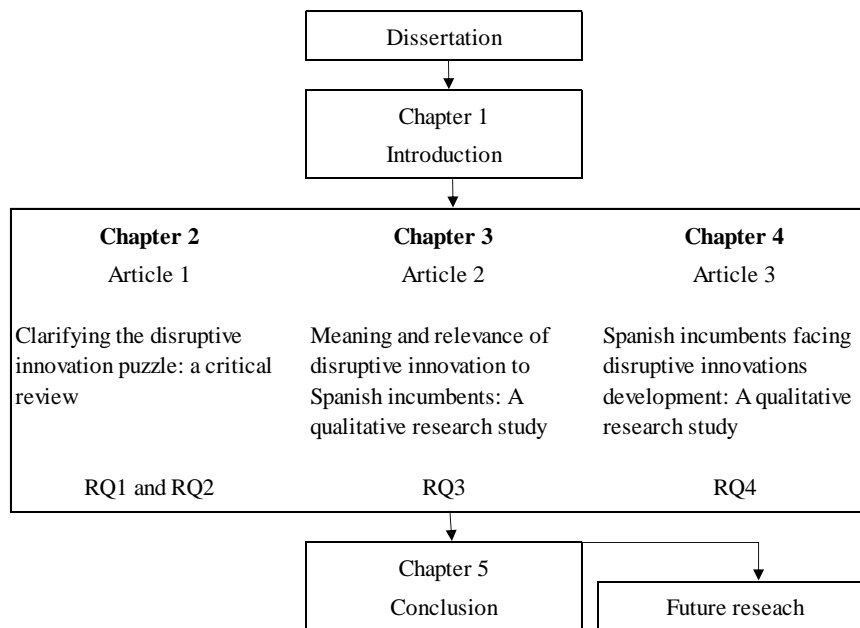


Figure 5.1. Structure of the dissertation by chapters

5.1 Overview of the main findings related to the research questions RQ1 and RQ2 (covered in chapter 2)

5.1.1 On the first question: What is disruptive innovation?

An exploration of the existing literature on DI theory identified key aspects related to its early antecedents where technology was the relevant issue; 2 clear early milestones were identified in 1997 and 2003, respectively; 17 definitions described by researchers; up to 32 characteristics recognised in different examples of DI and 2 types of DI, low end disruption and new market disruption; as well as its evolution over time. All of this has enriched the understanding of DI and a new definition has been proposed. The combination of the previous approaches provides a clear, classified, and

synthesized theoretical structure of DI theory that did not appear in the existing literature.

Based on these findings, DI can be identified as a process that takes place over periods of time, and which starts in the low-end market or creates a new market to move up towards the mainstream and high-end markets. As it can initially only be used in small markets that are distant from the mainstream, a DI does not compete with incumbents at first. But after some time it becomes more competitive, often resulting in the displacement of the traditional incumbents or the sharing of the market, although the DI typically enjoys a larger market share, offering products or services with unique characteristics that make it a better choice for consumers. It is called “disruptive” because it can subsequently become so competitive against established products or services within the mainstream market that it can change the behaviours of customers, incumbents and the market itself. However, we find that the existing literature has failed to provide a sufficiently simple, clear, and concise definition of DI, meaning that it remains an under-researched and under-theorised topic.

5.1.2 Second research question: what business behaviours are adopted by the actors associated with DI (that is, incumbents, entrants, and customers)?

This analysis compares the behaviour of entrants and incumbents in the disruptive innovation process, as well as low-end, new-market and mainstream market customers’ behaviours in its adoption. For incumbents, DI represents both a huge challenge and a great opportunity; a challenge because they must explore the unmet needs of low-end customers or try to create products to deal with “non-consumption”, i.e. turning non-consumers into consumers. This obliges incumbents to think outside of their mainstream market without neglecting their regular customers. This means adopting totally different approaches to their conventional priorities, management practices and perceptions of other markets, and especially the low-end segments that may have seemed irrelevant to them before. DI therefore pushes incumbents to use and increase their capabilities to the maximum.

DI creates new needs associated with the creation of market opportunities or satisfies unmet needs associated with the strategies designed to identify opportunities. However, disruptors are not necessarily start-ups or small firms (Pérez, Dos Santos Paulino, and Cambra-Fierro 2017) and DI can just as well be developed by incumbents. For instance, incumbents in the car manufacturing industry now have the opportunity to develop electric vehicles, which embody the principles of DI (Kamolsook, Badir, and Frank 2019; Benzidia, Luca, and Boiko 2021). Incumbents that usually focus on mainstream markets can extend the scale and scope of their business in order to maximize market opportunities and over time significantly boost their revenue through DI, thus increasing their share across emerging and developed markets.

For entrants, who can be start-ups, small companies or entrepreneurs with limited resources, there is an opportunity in low-end segments of the business market through the launch of DI that are “typically cheaper, simpler and frequently more convenient to use than the existing product”, along with many other characteristics identified in chapter 2. The aim is to offer an innovation that consistently satisfies the unmet needs of customers or creates new ones. This eventually leads to the so-called democratisation of consumption, meaning that these innovations are available at affordable prices to the pockets of people in the low-end segments of the market. These markets offer entrants greater growth opportunities without any threat from incumbents, who do not view such segments to be of interest, and do not see these innovations as a danger to the markets where they are competing. However, entrants will eventually also enter the mainstream and high-end markets, where customers consider DI attractive because of characteristics other than price.

In low-end segments of the market, DI is a response to customer dissatisfaction because it offers such characteristics such as lower prices, and simpler products or services that are “good enough” and easier to use. When DI creates new needs, more affordable and simpler products or services that offer unique characteristics, it also creates new consumption by seducing customers from both the low end and mainstream markets. Especially for customers from low-end segments of the market, more affordable products reduce the gulf between rich and poor because the latter can own the same products as higher end customers. These findings lead us on to the debate on

the five stages of the adoption of innovations as proposed by Rogers. Our analysis shows that four of Rogers' five adopter categories can initially be associated with DIs, namely: the innovators, the early adopters, the laggards and the late majority. Meanwhile, the early majority are the latest adopters because their trust needs to be increased before they can be persuaded to adopt.

5.2 RQ3: How do Spanish incumbents attend to, interpret, and respond to disruptive innovation? (covered in chapter 3)

The existing literature on DI theory makes it clear that there is a need for further studies. In order to answer this research question and to understand the influence of DI on incumbents, chapter 3 analyses their activities and perceptions in this regard based on a qualitative study involving face to face interviews with 20 top managers of incumbents located in Spain. This offers readers information about the phenomenon of DI in the incumbents' natural environment in order to reveal the different circumstances and perceptions that affect it (Jalongo and Saracho 2016).

5.2.1 Definitions that incumbents associate with DI.

Our findings show that DI is popular among our interviewees and that for the bulk of them its definition is strongly associated with transformation and business revolution because it involves creating something new that has not existed in the market before. It deals with new markets / new consumers, where different solutions are offered that will persuade a large number of customers around the world. In order to achieve DI, our respondents advise against asking customers what they want. This group of interviewees identified one type of DI – new-market disruption.

Not surprisingly, well over a third of the interviewees emphasized that DI is hard to define, given its complexity. This finding may be a mirror of the issue evidenced by the literature with regard to a consistent definition of disruption, and which needs to be resolved as progress on the matter will be difficult if there is no agreement as to what is being studied, meaning that academics and practitioners alike could be chasing different things. However,

it is also noted that there is a general lack of knowledge among incumbents of DI theory.

Incumbents clearly aim to stand out from their competitors, and DI may allow them to do so, but most of our interviewees claimed that it is extremely difficult to focus on DI alone, because it represents “a big jump in business” and/or “a leap in the dark.” A common perception among incumbents seems to be that DI pushes them out their comfort zone and compels them to form a new one instead.

Discussion. Managers identify new market disruptions, which consist of the creation of a new market, but they do not make it clear who the customers of DI are, and most of the interviewees do not have an answer to this question. This finding is important because if incumbents want to develop a DI it is important for them to know to whom it would be addressed and what needs that they are aiming to satisfy. In other words, unless they know what the main characteristics of this innovation are, they will be chasing ghosts. However, although new market disruption results are unpredictable, it is important to note that DI arises out of attempts by entrants to satisfy the unmet needs of customers in the low-end market.

5.2.2 Management of DI

It is noteworthy that for almost half of the interviewees, DI is a must, and they have implemented strategies to try to develop this type of innovation, adopting in some cases a start-up approach to doing so. These efforts have taught them that DI can take a long time, and involves taking risks, mostly in terms of time and money. They do not consider studying their competitors, because they are focused on creating new consumption and hence a “new market”. This group of incumbents is focused on the creation of opportunities in the market that fit a certain type of DI- new market disruption. They are investing in finding opportunities in the latent market where it might be possible to create needs for customers, thus stimulating new consumption, but they ignore the other type of DI- the low-end disruption associated with the creation of opportunities in the low-end and under-served market segment (Hang, Garnsey, and Ruan 2015). It is important to note here that the spirit

of DI is to satisfy the needs of low-end segments of the market and efforts to achieve this goal can arise in both types of DI.

Almost half of the interviewees recognise that their innovation management is driven by a focus on incremental and disruptive innovation. This is a prudent business innovation policy given the reputation, size, organizational structure, conditions, processes, customers, commitments and demanding competitive environments that incumbents must face. This group of incumbents prefers to be somewhat conservative and take a moderate level of risk. Incremental innovation is important to grow and evolve their business, to be closer to customer needs and to remain in the market. In turn, DI relates to the quest for differentiation, leverage, and being ahead in the market.

However, our interviewees include a tiny percentage of managers for whom DI is a matter that can affect other businesses. They are sceptical about its capability to solve the problems of their conventional businesses and customers. However, this does not mean that they are not interested in innovation, it merely reveals that they do not see DI as an option to innovate.

Discussion. The literature warns that DI is able to displace incumbents (Christensen and Raynor 2003). However, the bulk of incumbents considered in this dissertation are consumers of DI and view it as an opportunity more than a threat to their leadership. This may appear to be consistent with Hopp et al. (2018a), who argue that incumbents suffer from myopia when it comes to recognising the effect of DI, but given the limitations of this exploratory study, further research is needed.

5.2.3 Approaches to obtain helpful ideas to develop DI.

On the understanding that innovation is a multidisciplinary matter, all the interviewees highlighted that the whole organization must be aligned with their consumers' journey, understanding their needs and market experiences. To achieve this goal, some incumbents have established different committees and other informal channels to evaluate innovative ideas and determine which will be developed or not, make sure that no worker's ideas, knowledge or experience is ignored and ensure that every idea is given due consideration. Some incumbents have implemented incentives to encourage

their employees to present ideas. However, these ideas should fit with the incumbent's flow of needs and its innovation strategy, and any investment in a creative idea must lead to profits.

Discussion. The high profits earned by disruptor companies seem to encourage a certain number of incumbents to invest in developing strategies to find DI. However, many of these leading disruptors start out by merely aspiring to earn a small profit in order to survive in low-end markets. This finding may call on incumbents to rethink their strategies and perhaps amend some of them to allow DI to happen. Further studies are needed to put the role and potential of DI in proper perspective.

5.3 RQ4: What are the main management priorities, key factors, and challenges for incumbents in relation to tackling disruptive innovation? (covered in chapter 4)

To establish a clear storyline of DI theory and given that the data collected from the semi-structured interviews is so richly revealing of the incumbents' practices, another research contribution emerged, namely an analysis of the practices carried out by incumbents to tackle this theory.

5.3.1 Management Priorities

Several managerial approaches are applied by incumbents. To begin with, they all invest in gathering external knowledge to understand and keep up to date with what is happening in the global business environment. Contact with competitors, consumers, technology advances and industry are emphasized as important approaches to innovation. This external information plays an important role in improving the quality of innovations, identifying opportunities in the market, developing new technologies and avoiding threats. This knowledge allows most of them to forge strategic alliances in order to source innovative ideas, share the risk involved in a new product, share knowledge, improve their businesses or create new ones, achieve operational efficiency, and get better project results. One kind of strategic alliance that is particularly popular among incumbents is working with start-ups. The launch of innovations as soon as possible through product

diversification is other managerial priority for tackling DI that is associated with incremental innovation, whereby over half of incumbents opt to diversify their products and provide comprehensive packages by adding services to ensure that the consumers are offered everything they could need.

Almost half of our interviewees have created a specific unit to develop DI separately from their traditional operating activities, which ensures that part of the “business brain” and resources is not caught up in their daily lines of business. This type of unit reports hierarchically to the president of the company. An interesting strategy used by a third of interviewees is the adoption of a start-up philosophy. Incumbents view start-up companies as a suitable approach to developing DI due to their smaller, more flexible, and more streamlined structures. They do not have to develop the “*perfect*” product and are capable of greater diversification as well as offering more flexible solutions to their consumers and being more tolerant of errors when it comes to innovation. Incumbents that forge alliances with start-ups clearly adopt a start-up mindset and/or have created a specific unit to develop DI in accordance with the recommendations formulated by this theory.

Discussion. It is interesting to note that some incumbents who have experience of DI have invested heavily in start-ups and/or technologies around the world, either by buying entire start-ups or by collaborating with them in order to have a say in the future. To some extent, the perception is that start-ups have emerged with the aim of introducing DI. Despite the strengths that incumbents observe in start-up culture, many of them consider it to be the hardest aspect to achieve, as it requires a radical change of mindset.

5.3.2 Key Factors

Three key factors are highlighted by incumbents when developing DI. The first, technology, is identified by all interviewees as a key factor. They emphasized that the most revolutionary, ground-breaking, and successful innovations accepted by different markets come from this channel. It seems clear that the more technology an innovation involves, the greater its chance of being disruptive. Therefore, incumbents obviously consider investment in technology to be a crucial issue for business competitiveness. The second

factor is human talent. Almost half of the interviewees highlighted that aspects like knowledge, experience, and professional skills are key factors in the innovation process. Therefore, incumbents are keen to build strong multidisciplinary teams and to attract and recruit talented workers and knowledge from around the world. However, some interviewees argued that this is a complicated task. The third factor is the role of the founder and/or CEO, whose visionary leadership is a crucial factor for stimulating innovation and encouraging workers to focus on important matters. Well over a third of our interviewees consider that innovation as a strategy must come from the CEO, otherwise it will not work. Similarly, Christensen and Raynor (2003) argue that founders play an important role in developing DI as they have the authority to take action to explore, develop or override established measures. However, although the interviewees acknowledge that DI is a powerful type of innovation, a minority of them commented that it is difficult to identify the key factors that can help them to develop it. Mystery, courage, luck, spontaneity, curiosity, faith, obsession and thinking about new solutions were mentioned as potential drivers for achieving disruptive innovations.

Discussion: Undoubtedly, the key factors pointed out by incumbents are important elements in order to develop DI. Disruptive technologies lead to innovations and push not only incumbents but all other stakeholders too to deal with different challenges and to look for great business opportunities. However, a major factor emerges here: the importance of understanding unmet customer needs and, linked to that, the exploration of markets to discover opportunities and/or to create opportunities. DI is challenging the business world to take actions to resolve such issues as poverty and unemployment in a future that seems to be becoming more and more uncertain.

5.3.3 Challenges

The analysed incumbents emphasized that 1) In-depth analysis of their failed innovations and their competitors help them improve and focus their efforts on producing a product or service that meets consumers' preferences better. 2) In order to develop DI, bold decision making is needed, because it takes a long time to develop one, and profits are low (in the beginning). Thus, the outcomes of such innovations are often not aligned with the company's goals

in terms of returns in the short and medium term. 3) For the majority of incumbents, DI does not arise from asking customers what they want, but from the incumbents' interest in developing new products for a new market and in alignment with one type of DI, new-market disruption, because it focuses on creating new consumption. 4) In contrast with the previous observation, a minority of our interviewees argue that many innovations end in failure because they are not properly tested with consumers. These incumbents focus on observing what the others do not see in order to identify a "problem" and propose solutions.

Discussion: The four main challenges pointed out by incumbents are important for the development of DI, but perhaps the biggest challenge for them is exploring other markets, and especially the low-end market, to understand the unmet needs and propose the kind of solutions offered by DI. However, these markets are often not aligned with the incumbent's goals. If incumbents only focus on mainstream consumer preferences and needs, this may well be the wrong basis on which to develop disruptive innovations.

5.3.4 The quality-price ratio and the importance of emerging markets for developing DI

DIs strive to achieve low prices and develop "good enough" products, offering novel solutions to consumers in different markets. Over time, these products improve in quality, but their other characteristics are maintained in order to move up to the mainstream market. This explains the emergence of DI as a major threat to incumbents. However, DI can be risky for incumbents because of the ways in which it can affect their reputation, market share, commitment to society, and prosperity in the mainstream market. It is incumbents' experience and mainstream customers' preferences that lead incumbents to take action to innovate. All of the interviewees argued that their products or services are driven by quality attributes. They know that mainstream consumers want quality and greater reliability. They consider price to be more important when the product is mature in the market, because a "*mature product*" is of good or acceptable quality, but price is not such a relevant factor with new products. As the bulk of incumbents want to produce a product that no-one has in the market, quality and innovative solutions are

key elements of their development. Our interviewees confidently assume that lower prices are not a relevant issue when it comes to DI. However, DI arises as a result of efforts intended to respond to customers' unsatisfied needs, high prices and the oversupply of products.

Incumbents have made huge efforts to find a way to make innovations affordable, striving to strike a balance between an increase in resources and a moderate price for consumers. This balance is not only designed to maximize the incumbent's return on the investment made in each innovation, but also to ensure the population's well-being. Although our interviewees pointed out that product quality, price and profits are all analysed, the idea that "quality greatly affects the perceived functionality of the product" (Berg et al. 2020) strongly influences their level of interest in developing disruptive innovation.

One important point is that many DI are created in emerging economies (Hadengue, de Marcellis-Warin, and Warin 2017), meaning that these markets can be a source of DI (Corsi and Di Minin 2014) because they have an incentive to devise innovations at a lower price, with a different set of features, performance level and new functionalities. The theory of reverse innovation maintains that in order for a DI to be successful, it should be introduced and accepted by customers from emerging markets first. For many years, it has been argued that high-income countries have a strategic advantage over emerging ones as they have the right kind of companies to foster innovation. However, DI challenges this approach, because creative ideas may come from emerging markets and only reach more developed countries later on. China and India are considered examples of hotbeds of DI (Hadengue, de Marcellis-Warin, and Warin 2017). In fact, DI is less likely to come from developed countries and, if it does, it is less likely to be adopted in emerging markets. Therefore, the existing needs in emerging markets have led to new inventions to meet unmet needs, or create new ones, not only for these markets, but also for mainstream markets.

Discussion. DI undoubtedly pushes incumbents to adopt a different business philosophy, to find new ways of doing business through exploring other concepts, other segments of the market and other needs, which all entails a shift in their business mindset. However, incumbents are the dominant players in mainstream markets, where they enjoy a good reputation, are market leaders, and have strong commitments to different market players and

social actors. All these strengths are quite understandable and there are obvious reasons why incumbents want to pay special attention to their markets, and satisfy their customers' needs by offering quality products and taking care of the company's brand. Quality at a lower price is therefore a difficult task for them. However, it is important to consider that a lot of DIs arising in emerging markets can grow rapidly and can seriously affect the incumbents' business reputation, prosperity and survival. Incumbents are therefore constantly adapting their goals and structures to tackle these issues. DI is clear proof that in order to be competitive, it is important to be sensitive to quality and price.

Table 5.1 shows the main approaches to disruptive innovation theory identified by incumbents.

Disruptive innovation	Approaches by incumbents	Approaches according the principles of DI theory
Means	A process that transforms a market by using new technology and creating new needs and therefore new markets	DI not only use technology to create new needs
Identified as	A new and complex business model	✓
Begins in	Creation of a new market	Low-end segment of the market or creation of a new market
	Markets with high demands in terms of quality and price	Small markets distant form the mainstream market
Performance	Better performance than existing products that compete with the incumbent's products	DI offers "good enough" products or services
Characteristics	Unique characteristics and use of technology	DI is simpler, easier to use, at a lower price
Consumers	Tend to offer greater satisfaction and benefits to the bulk of consumers	✓
As a strategy	Totally change the traditional business model and bases of competition in the mainstream market	✓
Is disruptive due to	Use of a different strategy and its high profitability	DI has low profitability (in the beginning).

Table 5.1. Main approaches to disruptive innovation theory identified by incumbents

5.4 CONCLUDING REMARKS

DI is an “intellectual problem”. It is complex, difficult to undertake, and multidimensional in nature. Researchers have much to offer in this regard, with Hopp et al. (2018b), for instance, arguing that DI is a multidisciplinary, multifaceted phenomenon. Since Clayton Christensen introduced the concept twenty-four years ago, it has become an increasingly more important type of innovation due to the fact that it offers different opportunities for entrepreneurs, entrants, incumbents, and society, but also imposes different demands upon companies, users, regulators, and markets. The theory may be intriguing, messy, and have a questionable definition, but at the same time it is praised for its power to transform consumers from different markets, create new consumption, largely conquer mainstream markets and even threaten the incumbents’ leadership. A DI can be better than the existing products or services, and not just for one group of customers, but for all, or nearly all, of them.

There are several examples of the power of this type of innovation to change the world, but the existing literature on DI seems unable to give a simple answer as to its definition, its main principles, its real power to disrupt markets and its actual influence upon stakeholders in the market. DI remains an under-researched and under-theorised topic, but it is one that is worth studying because it is an “intellectual problem.”

5.5 FUTURE RESEARCH LINES

Given the difficulties providing a concise answer to the question of what a DI is, this topic is an outstanding matter of concern to researchers. Future research could perhaps tackle this issue by considering the 17 definitions that we have found (and divided into three groups). Moreover, given that customers adapt so well to DI, future work could also look in greater depth at the links between DI and Rogers’ adoption of innovation approach. According to our analysis, four of the five categories of adopters seem to accept DIs without following the stages defined by Rogers. For the vast

majority of incumbents, DIs could be a major leap forward for their businesses that will help them to stand out more from their competitors and disrupt markets, so further research could explore this matter in other contexts. Considering that alliances with start-ups and the adoption of a start-up culture are becoming more and more relevant in order for incumbents to achieve DI, further research should be addressed at the concerns, difficulties, goals, and results of deploying a start-up strategy with a focus on DI.

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**APPENDIX |  LETTER ASKING FOR
INTERVIEW AND
INTERVIEW
GUIDELINES**

Appendix 1. Letter asking for interview



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EMPRESA XXXXXXXX

Asunto: Solicitud de colaboración en una investigación sobre innovación disruptiva

Estimado,

El grupo de investigación en empresa de nuestra universidad está llevando a cabo una investigación sobre la innovación disruptiva. La investigación se desarrolla en el marco de la tesis doctoral de la doctoranda Sucet Martínez.

Uno de los temas que se están estudiando es el del concepto mismo de la innovación disruptiva y la manera en que las empresas lo utilizan en el marco de su organización y gestión de la innovación en la empresa. Esta parte de la investigación se ha estructurado a partir de una veintena de entrevistas a responsables de innovación de grandes empresas localizadas en Cataluña.

El objetivo de esta carta es pedirnos si aceptarais de colaborar en esta investigación. Se trataría de mantener una entrevista en la que recogeríamos su punto de vista sobre el tema en cuestión a partir de un guion semiestructurado.

La Sra. Sucet Martínez se pondrá en contacto con usted (o la persona en quien delegue) para ver si os sería posible aceptar nuestra petición. Por supuesto, los datos y los puntos de vista que nos pudierais facilitar tendrán siempre un tratamiento agregado y confidencial. La confidencialidad quedaría garantizada por el correspondiente protocolo. Complementariamente, nos comprometemos, por supuesto a hacerle llegar un documento con los resultados del trabajo una vez la hubiéramos finalizado.

La entrevista tiene una duración máxima prevista de cuarenta cinco minutos.

Los próximos días nos pondremos en contacto para saber si es posible aceptar nuestra petición y, en caso afirmativo, intentar coordinar las agendas de cara a fijar una fecha para la breve entrevista.

Agradecemos de antemano su atención.

Atentamente,

Jaume Valls Pasola

Coordinador

Grupo de Investigación en Empresa (UB)

Sucet Martínez Vergara

Investigadora

Grupo de Investigación en
Empresa (UB)

Appendix 2. Interview guidelines

Entrevista

Objetivo: conocer cuál es el comportamiento innovador de las empresas en España para desarrollar innovaciones disruptivas

1. Explorando innovación disruptiva

1. ¿La empresa utiliza el término “innovación disruptiva” (ID)?
2. ¿Qué es innovación disruptiva (ID) para usted? ¿La considera equivalente al término “innovación radical”?
3. ¿Es importante desarrollar ID para competir o sobrevivir en su negocio? ¿Por qué?

2. La innovación disruptiva en la empresa

1. ¿La innovación es responsabilidad de quién?
2. ¿Cuál es la política de innovación en la empresa? ¿En qué consiste?
3. ¿La empresa ha desarrollado o está desarrollando una innovación que ustedes puedan considerar disruptiva? Si continua la 4, No pasamos al punto 3
4. ¿Hay algún factor clave a destacar para el desarrollo de ID en la empresa?

3. Estrategias de la empresa para desarrollar o competir con ID

1. ¿Cuál es su principal estrategia para competir con ID? (aspectos organizativos, recursos, etc.).
2. ¿Tiene alianzas, colaboraciones con otras empresas (startups), sector, - existe una política que fomente la innovación abierta?
3. ¿Existen incentivos-premios?

4. ¿Recopila, utiliza o copia ejemplos de ID? (relacionado con la nro. 3 siguiente)

4. Perfil competitivo de la empresa en su sector

1. ¿La empresa se considera más innovadora respecto a otras? ¿Por qué?
2. ¿Cuáles son las dificultades entre las actividades de la empresa y las presiones del entorno para desarrollar ID?
3. ¿Hay innovaciones disruptivas que han afectado/influenciado/ cambiado su sector y por tanto su negocio en los últimos años?
4. ¿Sus competidores principales han desarrollado innovaciones disruptivas?
5. ¿Participa en proyectos/programas para fomentar ID? Conexión con (Fondos Europeos)

5. Gestión y Dirección para la Innovación Disruptiva

1. ¿Los directivos han implementado nuevos enfoques de gestión en los últimos años?
2. ¿Los directivos de manera sistemática desarrollan/recogen ideas disruptivas del personal, de su mercado y de las tecnologías?
3. ¿Cómo se evalúan las ideas en la empresa? ¿Relacionada a cómo conseguir una cultura de innovación disruptiva?

6. Innovación en la empresa bajo las bases de la teoría de ID

1. ¿Cuál es el perfil de quienes compran productos o servicios disruptivos en su sector?
2. ¿Las exigencias de los consumidores respecto a productos o servicios de mayor calidad a menor precio, es favorable o desfavorable para el desarrollo de ID?
3. ¿La maximización de beneficios, la dirección, las competencias profesionales, las exigencias del mercado, son complementarios o contradictorios para desarrollar ID?

4. ¿La combinación flexibilidad/tecnología son importantes para la ID? ¿Por qué? Posiblemente ya sea respondida con la 3-2.1
5. ¿La empresa identifica las necesidades de consumidores de mercados emergentes o intenta crear nuevos mercados? Posiblemente respondida con la 2.1

Entrevista (Guion interno de apoyo para el desarrollo de la entrevista)

Objetivo: conocer cuál es el comportamiento innovador de las empresas en España para desarrollar innovaciones disruptivas

Entrevistado

1. Explorando innovación disruptiva

1. ¿La empresa utiliza el término “innovación disruptiva” (ID)?
2. ¿Qué es innovación disruptiva (ID) para usted? ¿La considera equivalente al término “innovación radical”?
3. ¿Es importante desarrollar ID para competir o sobrevivir en su negocio? ¿Por qué?

2. La innovación disruptiva en la empresa

1. ¿La innovación es responsabilidad de quién?
2. ¿Cuál es la política de innovación en la empresa? ¿En qué consiste?
3. ¿La empresa ha desarrollado o está desarrollando una innovación que ustedes puedan considerar disruptiva? Si continua la 4, No pasamos al punto 3
4. ¿Hay algún factor clave a destacar para el desarrollo de ID en la empresa?

Entrevistador

1. Explorando innovación disruptiva

Si (continuamos con la entrevista)-No (preguntamos por innovaciones radicales o cerramos la entrevista)

- 2.1 ¿La ID es diferente respecto a otros tipos de innovaciones?
¿Por qué?
- 2.2 ¿Qué prácticas han sido introducidos debido a los cambios tecnológicos?

2. La innovación disruptiva en la empresa

- 2.1 La estructura de la empresa permite usar/evaluar/desarrollar ID?
¿Cómo? ¿Ha introducido nuevas prácticas para la creación de ID?
- 2.2 ¿Los siguientes factores son importantes, positivos/negativos para desarrollar ID?
 - El tamaño de la empresa, recursos financieros, recursos humanos,
 - Capacidades de dirección, tiempos,
 - La dependencia de los clientes actuales,
 - La rentabilidad exigida,
 - El cambio de lo tradicional a lo nuevo o desconocido
- 3.1 ¿Existe financiamiento para desarrollar ID? ¿Qué porcentaje?
- 3.2 ¿En su empresa cuál es la principal barrera para la disrupción?

3. Estrategias de la empresa para desarrollar o competir con ID

1. ¿Cuál es su principal estrategia para competir con ID? (aspectos organizativos, recursos, etc).
2. ¿Tiene alianzas, colaboraciones con otras empresas (startups), sector, - existe una política que fomente la innovación abierta?
3. ¿Existen incentivos-premios?
4. ¿Recopila, utiliza o copia ejemplos de ID? (relacionado con la nro. 3 siguiente)

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1. ¿La empresa se considera más innovadora respecto a otras?
¿Por qué?
2. ¿Cuáles son las dificultades entre las actividades de la empresa y las presiones del entorno para desarrollar ID?
3. ¿Hay innovaciones disruptivas que han afectado/influenciado/ cambiado su sector y por tanto su negocio en los últimos años?
4. ¿Sus competidores principales han desarrollado innovaciones disruptivas?

3. Estrategias de la empresa para desarrollar o competir con ID

- 2.1 ¿La estrategia es tradicional o flexible al cambio (modelo de negocios)?
- 3.1 ¿Como se afronta: ...?
 - Emprender
 - Tomar riesgos
 - La creatividad
- 2.1 ¿Tiene un departamento autónomo para desarrollar ID?

4. Perfil competitivo de la empresa en su sector

- 1.1 ¿Qué factores hacen que sean más competitiva?
- 1.2 ¿Porque algunas empresas son más innovadoras que otras?
- 3.1 ¿Cómo?
- 3.2 ¿En su sector cuales son las barreras más importantes para la disrupción?
- 5.1 ¿Cómo crear una cultura de innovación disruptiva?

5. Gestión y Dirección para la Innovación Disruptiva

1. ¿Los directivos han implementado nuevos enfoques de gestión en los últimos años?
2. ¿Los directivos de manera sistemática desarrollan, recogen ideas disruptivas del personal, de su mercado y de las tecnologías?
3. ¿Cómo se evalúan las ideas en la empresa?
Relacionado a ¿Cómo conseguir una cultura de innovación disruptiva?

5. Gestión y Dirección para la Innovación Disruptiva

- 1.1 ¿Los directivos siguen modelos tradicionales de gestión o se han implementado nuevas rutinas?
- 1.2 ¿Existe flexibilidad para que los directivos no sigan un enfoque tradicional a través de presupuestos y análisis que justifiquen la inversión y apuesten por ID?
- 1.3 ¿Se les permite actuar con menos formalidad para tomar decisiones respecto a posibles descubrimientos de ID?
 - 2.1 ¿Como se evita o previene la fuga de ideas?
 - 3.1 ¿Qué papel juega el directivo? Es el mismo directivo o se designa a otro personal.

6. Innovación en la empresa bajo las bases de la teoría de ID

1. ¿Cuál es el perfil de quienes compran productos o servicios disruptivos en su sector?
2. ¿Las exigencias de los consumidores respecto a productos o servicios de mayor calidad a menor precio, es favorable o desfavorable para el desarrollo de ID?
3. ¿La maximización de beneficios, la dirección, las competencias profesionales, las exigencias del mercado, son complementarios o contradictorios para desarrollar ID?
4. ¿La combinación flexibilidad/tecnología son importantes para la ID? ¿Por qué? Posiblemente ya sea respondida con la 3-2.1
5. ¿La empresa identifica las necesidades de consumidores de mercados emergentes o intenta crear nuevos mercados? Posiblemente respondida con la 2.1

6. Innovación en la empresa bajo las bases de la teoría de ID

- 2.1 ¿La empresa identifica necesidades de sus no clientes o potenciales nuevos clientes, intenta crear nuevas necesidades en los o sus consumidores?
- 2.2 ID = típicamente más baratos, más simples, más pequeños y con frecuencia, más cómodos de usar que el producto o servicio existente ¿Cómo afronta la empresa estos aspectos?
- 3.1 ¿Qué acciones son tomadas para contrarrestar una amenaza de ID proveniente de un mercado emergente o nuevo mercado?
- 4.1 ¿Un modelo de negocio flexible expuesto al cambio y una adecuada tecnología, son factores importantes para desarrollar ID? ¿Por qué?

