Criticisms on “the Innovator’s Dilemma”
Being in a Dilemma

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Abstract: \textit{The Innovator’s Dilemma} (Christensen, 1997) has been cited in many studies since Christensen published it in 1997. Some of these studies have advocated that concepts such as “dynamic capability,” “ambidexterity,” and “market orientation” can be used to overcome the environmental changes caused by the innovator’s dilemma. However, these studies are categorized into two general types that are not logical refutations: (a) those which merely suggest the concept without suggesting an opposing example, and (b) those which do not demonstrate that a trajectory disruption has occurred even when suggesting an example. We must demonstrate that a trajectory disruption has occurred and then suggest a case in which the environmental changes were mitigated to suggest an example of overcoming the innovator’s dilemma. However, arguments exist that doubt Christensen’s concept of trajectory disruption, indicating that the arguments are not facile.

Keywords: innovation, market, customer, innovator’s dilemma

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1. Introduction

Christensen published *The Innovator’s Dilemma*¹ (Christensen, 1997) in 1997 as a compendium of his previous study (Bower & Christensen, 1995; Christensen, 1992a, 1992b, 1992c, 1993; Christensen & Bower, 1996; Christensen & Rosenbloom, 1995; Rosenbloom & Christensen, 1994). This study has profoundly influenced the business administration domain. Previous innovation studies had highlighted the importance of markets and customers (e.g., Abernathy & Clark, 1985, Foster, 1986); however, they tended to focus more on the technological perspective (e.g., Abernathy & Clark, 1985; Tushman & Anderson, 1986). Considering this situation, Christensen mainly employed data from the hard disk drive (HDD) industry to test the importance of markets and customers in innovation.

How has *The Innovator’s Dilemma* been cited in subsequent studies? The major problems addressed in this study include assessing the influence of *The Innovator’s Dilemma*, which had significantly impacted the business administration domain, and offering some suggestions with regard to future research. This study is structured as follows. First, the beginning of the second section introduces examples of the manner in which Christensen’s study has been cited in subsequent studies. Examining the major studies that have cited *The Innovator’s Dilemma*, we can see that Christensen’s study has influenced a broad range of research, from strategy to

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¹ It is a theory describing the situation in which established industrial firms that have operated their businesses by listening to their established customers lose out to new firms that have developed and adopted technological innovations, which the established firms initially considered to be unattractive. However, some studies state that established firms as well as new firms can coexist (Shintaku, Nakagawa, Ogawa, & Yoshimoto, 2014). In addition, for the definition and types of innovation, see Akiike and Iwao (2013), Akiike (2014), and others.
marketing. In particular, researchers in the fields of strategy and marketing have made suggestions regarding the manner in which established firms can apply concepts such as dynamic capability, ambidexterity, and market orientation to overcome the situation of the innovator's dilemma (e.g., O'Reilly & Tushman, 2008; Slater & Narver, 1998).

The third section discusses the shortcomings of the major subsequent studies. Although these studies indicate the possibility to overcome the innovator's dilemma, their detailed examination indicates that most are concept-level studies. Even if they conduct case studies on this theme, they insufficiently analyze the core of Christensen's study—whether trajectory disruption of the established performance axis is occurring. Based on this fact, this study suggests that future research should first clarify whether the trajectory is being disrupted and then discuss whether that disruption was overcome when insisting that the innovator's dilemma was truly overcome. The fourth section examines the trajectory disruption. Based on previous studies by Takahashi, Shintaku and Ohkawa (2007, 2013) and others, a reassessment of the concept of trajectory disruption suggests some doubts regarding the argument. In other words, it is difficult to demonstrate the occurrence of trajectory disruption. In short, this study indicates the issues involved in testing the validity of and conducting subsequent studies on the innovator's dilemma. The fifth section summarizes the limitations, contribution, and other aspects of this study.

2. Can Incumbents Accommodate to Innovator's Dilemma?

*The Innovator's Dilemma* (Christensen, 1997) has significantly impacted many studies. For this study, we explored studies that cited Christensen (1997) on Google Scholar and verified the contents of the top articles (excluding books). We then surveyed how these studies
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cited the concept of the innovator’s dilemma.

These studies can be classified as follows: ① studies on dynamic capability (e.g., Benner & Tushman, 2003; Zahra & George, 2002); ② studies on the ambidexterity of exploitation and exploration (e.g., Gupta, Smith, & Shalley, 2006); ③ studies on the effectiveness of social capital and networks (e.g., Lee, Lee, & Pennings, 2001; Yli-Renko, Autio, & Sapienza, 2001); ④ studies on entrepreneurship (e.g., Gans, & Stern, 2003; Ireland, Hitt, & Sirmon, 2003); ⑤ studies on open innovation (Chesbrough & Rosenbloom, 2002; Laursen & Salter, 2006); ⑥ studies on technology diffusion (Geroski, 2000); ⑦ studies on sociotechnical theories on the joint promotion of technology and the organization (e.g., Geels, 2004; Unruh, 2000); and ⑧ studies on innovation from the marketing perspective (e.g., Hult & Ketchen, 2001; Sheth, Sisodia, & Sharma, 2000).② This study focuses on the studies on dynamic capability, ambidexterity (e.g., Gupta et al., 2006), and innovation from the marketing perspective (e.g., Sheth et al., 2000).

First, how do studies on dynamic capability treat Christensen’s *The Innovator’s Dilemma*? Dynamic capability refers to a firm’s competence in generating new products and processes and in responding to changes in the market environment (Teece & Pisano, 1994). In other words, it is the competence to continue innovating and accumulating these innovations inhouse.③ Such competence can be divided into three types: ① competence to sense opportunities or threats and develop ideas, ② competence to seize opportunities, and ③ competence to coordinate competitiveness through enhancement, combination, protection, or if necessary,

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② Other types of recent research exist that apply disruptive innovation to international business (e.g., Govindarajan & Ramamurti, 2011; Govindarajan & Trimble, 2013; Shintaku & Amano, 2009). Articles reviewing these are now emerging (Corsi & Di Minin, 2014).

③ See Fukuzawa (2015), which is a detailed review of research on dynamic capability.
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reconfiguration of the firm’s visible and invisible assets (Teece, 2007 p. 1319). Although firms with dynamic capability are believed to be capable of generating long-term profitability (Teece, 2007; Teece & Pisano, 1994; Teece, Pisano, & Shuen, 1997), further indepth study on the type of mechanism that can actually generate and retain this within the organization has been deemed necessary (Teece et al., 1997). In this situation, the discussion regarding ambidexterity arises from the alternative positions of whether innovation is promoted from the utilization of existing assets or whether new assets gained from external exploration lead to innovation. This argument has been used to advance studies on dynamic capability (O’Reilly & Tushman, 2008; Smith & Tushman, 2005), and Christensen’s study has been cited in this context. Ambidexterity is defined as “the ability of a firm to simultaneously explore and exploit, enables a firm to adapt over time” (O’Reilly & Tushman, 2008, p. 185). Although researchers have discussed this concept with respect to whether exploration and exploitation can be sequentially combined or pursued simultaneously (Gupta, Smith, & Shalley, 2006), in either case, studies have indicated that it is important to examine both exploitation and exploration.

The study by Danneels (2002) is an empirical analysis on this topic.4 Danneels (2002) categorized firms’ competences into market competence and technology competence, and presented them in a 2 × 2 matrix. This study notes that the development of market competence is linked to exploration, whereas the development of technology competence is linked to exploitation. Recent studies divided innovation into sustaining and disruptive innovation. Such

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4 Although Danneels (2002) does not mention ambidexterity, the indication that management of both exploitation and exploration is important is also cited in such studies on ambidexterity, such as the study by O’Reilly & Tushman (2008). For more information regarding ambidexterity with dynamic capability, see another paper discussing ambidexterity such as Wada (2015).
studies have proposed the solution that in general, exploitation is more advantageous to sustaining innovation, whereas exploration is essential to disruptive innovation (Raisch, Birkinshaw, Probst & Tushman, 2009). Other studies contend that Christensen’s findings are inaccurate because he asserts that disruptive innovation is common to new entrants, whereas organizations that possess ambidexterity are capable of responding to new entrants and therefore are able to gain long-term profitability (Chandy & Tellis, 2000; Hill & Rothaermel, 2003).

In addition, marketing researchers have tended to interpret Christensen’s argument as a warning that those who listen to their customers will fail (Hult & Ketchen, 2001; Matsuno, Mentzer, & Özsomer, 2002; Sheth, Sisodia, & Sharma, 2000). Marketing researchers thus present their counterarguments from the perspective of customer relation management (CRM) or customer-oriented marketing. Slater and Narver (1998) indicate their misgivings regarding comparing the conclusions of Christensen and Bower (1996) with the views of marketing research. In addition, they note that responses to customers seem to differ between those that are customer led and those that are market oriented. According to Slater and Narver (1998), being “customer led” means responding to customers’ superficial short-term wants, whereas being “market oriented” means responding to customers’ latent needs over the long term. Furthermore, Slater and Narver (1998) note that achieving a market orientation can lead to a firm’s competitive advantage. Other studies also have argued that a customer orientation is still more profitable if it can elicit significant customer data through such technological advances as information and communication technology (ICT) applications (Nambisan, 2002) or the development of

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marketing methodologies (Peppard, 2000).^6

3. Importance of Trajectory Disruption?

We have thus seen that the studies of strategy, organizational theory, and marketing have all noted the possibility of overcoming radical environmental changes caused by the innovator’s dilemma. In other words, a superior firm will be able to handle the innovator’s dilemma and other abrupt changes in the environment because it is customer oriented and it possesses dynamic capability and ambidexterity.

Has the concept of the innovator’s dilemma already been resolved successfully?^7 As these studies note, in theory it may be possible to resolve the innovator’s dilemma. However, these studies merely suggest concepts, and even if they suggest cases, they usually do not give any proof of trajectory disruption, which is the core concept of Christensen’s study.

Let us return to Christensen’s series of studies for a detailed explanation of this technological trajectory. Christensen began by analyzing the patterns of innovation in the HDD industry (Christensen, 1992a, 1992b, 1992c). Christensen (1992b, 1992c) combines the discussion of architectural innovation (Henderson & Clark, 1990) with that of the S-curve (Foster, 1986) and notes, “a different S-curve framework for processes of architectural technology change that comprehends both its technological and market aspects”

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^6 Seem Ichikohji and Katsumata (2014) for further information on lead users and user innovation, which have attracted attention in recent years.

^7 In Christensen (1997), the author discusses established firms’ responses to disruptive change in the second half of the study. Nevertheless, he says that established firms can manage such changes by generating a new stand-alone organization through a spin-off or other means. In other words, he does not comprehensively discuss the responses of established organizations.
(Christensen, 1992c, p. 358, summary section). Moreover, the word “disruptive,” a key term in his study, first appeared in Christensen (1992a), which was his doctoral thesis. He states “a relatively disruptive, incongruous effect on established performance trajectories” (Christensen, 1992a, p. 90). From this, we can infer that his initial research topic was its disruptive effect on a past performance trajectory. Christensen (1992a) also introduces the idea of the technology paradigm previously proposed by Dosi (1982) and Nelson and Winter (1982) in addition to the discussion in Christensen (1992b, 1992c). Furthermore, he indicates the major influence that differences in the performance trajectories of each markets have had on the established firms. The refinement and conceptualization of the discussion in Christensen’s subsequent studies (e.g., Christensen & Bower, 1996; Christensen & Rosenbloom, 1995) is also based on the this concept of trajectory disruption.

Trajectory disruption is thus the cornerstone of Christensen’s study. Therefore, if researchers cannot prove this part of his argument, they cannot say that the innovator’s dilemma has been overcome. We argue that subsequent studies to prove this point remain inadequate. For example, although Danneels (2002) conducts case studies involving environmental change, he does not prove that it was an occurrence of what Christensen terms technology trajectory disruption. Therefore, it is required to test whether a trajectory disruption has occurred and analyze cases wherein the innovator’s dilemma was overcome under such a position to assert that the innovator’s dilemma has been overcome.

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8 The term “disrupt” also appears in Abernathy and Clark (1985), which is cited in Christensen (1992a).

9 In general, later studies (e.g., Christensen & Bower, 1996; Christensen & Rosenbloom, 1995) have taken these views in refining and conceptualizing this discussion.
4. How is the Trajectory Disruption Depicted?

Nevertheless, one point should be remembered in this regard; that is the problem of depicting Christensen’s trajectory disruption. The trajectory that Christensen depicted was based on the voluminous data that he had collected on the HDD industry. Other researchers would find it extremely difficult to simply amass the same level of data on other industries. In addition, Takahashi et al. (2007, 2013) and others have questioned the validity of the disruption. Takahashi et al. (2007, 2013) criticize the figures used by Christensen in many of his studies (e.g., Figure 2 in Christensen & Bower, 1996). They contend that the disruption would have been smaller if he had used areal recording density from Figure 1 of Christensen and Bower (1996) as the vertical axis in Figure 2 instead of storage capacity. In addition, they argue that the HDD trajectory seems to be sustained by the specification of the vertical axis. In connection with this, Figure 1 in Agarwal, Echambadi, Franco and Sarkar (2004) contains a shape similar to an S-curve in its depiction of a new inch HDD that surpasses the old-generation inch HDD in terms of its areal density. This therefore suggests the question of whether the trajectory was really disrupted.\(^{10}\)

In other words, subsequent studies have confronted the dilemma that it is extremely difficult to prove whether a trajectory has been disrupted, despite the fact that creating ways to overcome Christensen’s innovator’s dilemma first requires confirmation that the trajectory has been disrupted.

5. Conclusion

This study has suggested that existing studies consider the fact

\(^{10}\) Takamatsu and Tomita (2015), Danneels (2004), and others discuss additional problems on Christensen’s study.
that Christensen’s innovator’s dilemma can be overcome by applying the concepts of dynamic capability, ambidexterity, and market orientation. In addition, it indicates the problem of proceeding with an analysis without considering trajectory disruption, which is the focus of his study. As a review, this study is limited as it surveys only the top studies listed in search results from Google Scholar. Nevertheless, a more detailed analysis of research influencing the business administration domain is essential to arrive at a major assertion that Christensen’s innovator’s dilemma can be overcome. In this sense, we believe that the findings of this study will be useful for future studies.

Nevertheless, the following point should be considered. The depiction of trajectory disruption is extremely difficult although creating ways to overcome Christensen’s innovator’s dilemma first requires the confirmation that the trajectory has been disrupted.

This is because data gathering and the analysis of the trajectory disruption are difficult. This study therefore highlights the major dilemmas that are present in subsequent studies. The question of “how will established firms survive over the long term?” has been extensively discussed as a major theme in the business administration domain. However, more logical and actual analysis is necessary to reveal the way by which firms can truly overcome the innovator’s dilemma and survive over the long term.

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