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Capability reconfiguration of incumbent firms: Nintendo in the video game industry

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ABSTRACT

The importance of incumbent firms' ability to transform themselves according to the changing technological environment has been underlined by several scholars and practitioners. Yet, how incumbents leverage on commercial capabilities in order to develop such technological reconfiguration abilities in the midst of fierce competition from new entrants has not gained enough attention. To address the above research issue, our study investigated the case of Nintendo, an incumbent firm in the video game industry, using the dynamic capability perspective. Our study relied on primary and secondary data collected from diverse sources such as interviews, web contents, magazines, the US Patent and Trademark Office and Wikipedia. Three component factors that reflect the common features of dynamic capabilities across past studies emerged as the basis of Nintendo's reconfiguration ability. Underlining the significance of these commercial capabilities in the technological reconfiguration of an incumbent, our paper helps to synthesize this stream of literature and extends guidelines for future empirical studies to develop the dynamic capability construct. In addition, the findings also help managers devise strategies for an adaptive organization.

1. Introduction

The declining performance of long-standing companies in the face of dramatic changes has been well established in the literature. For instance, studies reveal that changes caused by discontinuous innovations can destroy the rent earning potential of incumbents' product/process improvement competencies, technical skills and architectural innovation capabilities (Tushman and Anderson, 1986; Henderson and Clark, 1990). In the event of shifts in technological paradigms, the well established routines prevailing within incumbent firms prevent them from adapting themselves to the dynamically changing environment (Tilton, 1971; Hannan and Freeman, 1977). Nevertheless, it is observed that some incumbent firms are capable of successfully transcending waves of technological changes (O'Reilly et al., 2009). The variation in incumbents' responses to technological changes is one of the more popular research focus points that has led to a proliferation of literature on entrant vs. incumbent firms (Tushman and Anderson, 1986; Christensen and Bower, 1996; Tripsas, 1997).

While the major tenet of this literature is that technological changes can be overcome by incumbents that can transform their capabilities, the existing research has treated incumbents as one population, rather than differentiating them in terms of the assets and capabilities that stretch beyond the technological domain. Contrary to this, it appears that an incumbent's reconfiguration ability depends on the extent to which they can leverage on their non-technology related strengths to quickly catch up with the technological transitions (Mitchell, 1991). For instance, it has been noted that incumbents exploit their complementary assets, cooperative competencies, distribution channels, etc. to buy time for catching up with the technological transitions (He et al., 2006; Teece et al., 1997; Rothaermel and Boeker, 2008). The purpose of this study is to demonstrate how incumbents rely on such commercial capabilities when dynamically reconfiguring themselves to the technological changes. In the process, we also identify a few of the capabilities that ensure firms to reconfigure themselves in the event of threats from technologically superior new entrants.

The transformation of firm capabilities has been encapsulated under different notions such as architectural competence (Henderson and Clark, 1990), core capability and rigidity (Leonard-Barton, 1992) and combinative capability (Kogut and Zander, 1992). These studies emphasize the organizing practices that convert the expertise of the organization and its members into useful innovations. In contrast, dynamic capability is more closely associated with change and the firm's ability to innovate outside its current routines. This can also be appreciated from the basic definition of dynamic capability: "the capacity to renew competencies so as to achieve congruence with

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the changing business environment" by "adapting, integrating and reconfiguring internal and external organizational skills, resources and fundamental competencies" (Teece et al., 1997, p. 515). Consequently, our research draws upon the dynamic capability perspective that provides a useful theoretical lens for examining the reconfiguration capabilities of firms in the context of relentless competition. More specifically, our paper intends to focus on those commercial capabilities of incumbent firms that help them to dynamically reconfigure themselves during technological transitions, especially when faced with fierce competition from superior entrants.

We will use the game console industry, particularly the case of Nintendo, to identify the components of dynamic capability and how they interact. Since its inception in the 1970s, the game console industry has been characterized by a number of significant changes. The industry has witnessed seven generations of video game consoles starting from Magnavox's Odyssey in the early 1970s to Nintendo's Wii, Microsoft's Xbox 360 and Sony's PlayStation 3 in the early 2000s. The industry has also had several other dominant players like Fairchild Semiconductor, Texas Instruments, Mattel, Atari, Sega and NEC. Industry leadership in such a dramatically changing industry can be a transient experience for firms. Nevertheless, Nintendo, an incumbent firm in this industry, occupies a unique and successful position in spite of the fierce competition that it has faced from technologically superior entrants like Sony and Microsoft. Our case analysis of Nintendo reveals that (a) dynamic marketing competencies, (b) collaborative competencies and (c) complementary competencies helped the firm in reconfiguring itself. Our research demonstrates how incumbents that have a strong foothold in the market related complementary assets and collaborative capabilities can rely on these capabilities to transform themselves during technological punctuations.

This paper is organized in the following manner. The next section presents a review of the literature that forms the basis of our case analysis. This is followed by a section elaborating on the video game console industry and the major firms. After that the findings and discussions of the study are presented. The paper concludes by presenting the theoretical and practical implications of our analysis.

2. Theoretical background

Researchers in technology and innovation management often categorize innovation into different types. Veryzer's (1998) framework, presented in Fig. 1, is a tool that provides a systematic way for classifying innovations into different types. According to the framework, there are two critical dimensions: (a) technological capability and (b) commercial capability, which characterize an innovation. The two dimensions are used to delineate

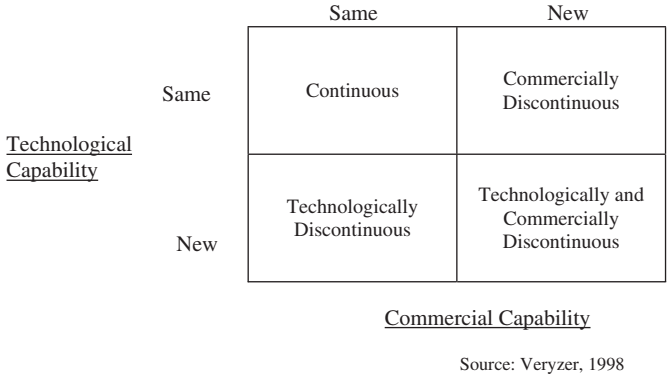

Fig. 1. Types of technological innovation.

varied levels or degrees of change in an innovation. The technological capability dimension refers to the extent to which the innovation draws upon knowledge from distant or new technologies in performing its functions (Veryzer, 1998). Technological discontinuity takes place when a new functionality is introduced in an innovation that is beyond the scope of the industry's existing technological knowledge base. The commercial capability dimension refers to the users' perception of the innovation in regard to the potential benefits and utility of the innovation. Commercial discontinuity results when existing customers change the way they perceive and use the innovation. Commercial discontinuity also takes place if the innovation is capable of attracting a new set of customers as its potential users.

Company-specific resources and capabilities determine the kind of innovation strategy that a firm pursues. In recent times, audit tools are being developed that help firms to investigate potential strategies that fit with the current competencies residing within organizations (Walsh and Linton, 2010). Several scholars have shown that established companies face tremendous challenges in adjusting to technological punctuations (e.g. Abernathy and Utterback, 1978; Henderson and Clark, 1990; Tushman and Anderson, 1986; Anderson and Tushman, 1990; Leonard-Barton, 1992; Christensen and Rosenbloom, 1995; Christensen, 1997). When there is a punctuation in the technological paradigm, established companies that are bound by well-rooted routines, norms and evolutionary paths find it hard to acquire the new knowledge and adapt to the dynamic changes (Tilton, 1971; Hannan and Freeman, 1977; Tushman and Anderson, 1986). The dynamic capability perspective is an influential theoretical framework that explains why some incumbent firms are capable of transcending shifts in technological paradigm (Teece et al., 1997). At the heart of the dynamic capability perspective is the firms' ability to integrate, build and reconfigure internal and external competencies to address the rapidly changing environment (Ellonen et al., 2009). In spite of several debates concerning the dynamic capability perspective such as definitional issues, inconsistent usage, contradictory arguments, etc., scholars have predominantly used this theory for analyzing the survival and performance of incumbents (Wang and Ahmed, 2007; Easterby-Smith et al., 2009).

A significant number of empirical studies have emerged in the last two decades, that have used the dynamic capability perspective to investigate the evolution of firms (Helfat, 1997; Tripsas, 1997; Spanos and Lioukas, 2001; Wang and Ahmed, 2007; Easterby-Smith et al., 2009). While the majority of these studies have remained at the level of underlining the significance and consequences of dynamic capability, a few have advanced this stream of research to the next level by identifying the operational foundation of dynamic capability (Iansiti and Clark, 1994; Eisenhardt and Martin, 2000). The research on the antecedents of dynamic capability has been conducted on a piecemeal basis by a variety of academics deriving insights from streams like marketing, R&D management, organizational learning, resource based views, etc. (Mengue and Auh, 2006; Danneels, 2008; MacCormack and Iansiti, 2009; Lichtenthaler, 2009; Helfat, 1997; Spithoven et al., 2010). These studies focus on several factors such as market dynamism, cross border acquisition of technological knowledge, internal and external acquisition of knowledge, capability possession, deployment, upgrading, etc. Other scholars have proposed that constant exploration and experimentation with emerging, pioneering and novel technologies can prevent incumbents from falling prey to myopia (Ahuja and Lampert, 2001). In line with Veryzer's framework, the above antecedents of dynamic capability can be broadly classified under the technological or commercial capabilities of firms. The interplay between technological and commercial capabilities differs depending on the context of study.