Innovation Capability, Marketing Capability, Dynamic Capability and Performance: Effects of Competitive Intensity and Firm Size on Resources Utilization

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ABSTRACT

The aim of this study is to examine how the integration of marketing and innovation capabilities enables firms to compete in dynamic markets and enhance performance. In addition, we seek to understand how small, medium, and large enterprises build their dynamic capabilities, and provide suggestions on the development of organizational capabilities under conditions of high industry competitiveness. This study fills a gap the current literature by examining the complementarity of innovation and marketing capabilities, which has been investigated very few studies. The proposed conceptual model was tested on a selected sample of 692 companies, which was divided into sub-samples of small, medium, and large enterprises. Our findings demonstrate that the development of organizational capabilities is not necessarily beneficial to performance, while competition is not necessarily detrimental to it; the impacts vary depending on a firm’s resource base and the level of competition. In small enterprises, dynamic capability proved to be crucial in order to withstand competition. Therefore, despite the limited resources of such firms, managerial efforts should be focused on the integration of marketing and innovation capabilities, because each capability alone does not have a significant positive impact on performance. In medium-sized enterprises, the support of marketing capability is required to raise profitability under conditions of high industry competitiveness; otherwise, innovation would not lead to actual profits. For large enterprises, industry competitiveness was found to be a less serious threat to performance, and instead is a catalyst to the development of capabilities, suggesting that managers of such firms should focus on building long-term strategic advantages.

Keywords: Dynamic capability, Innovation capability, Marketing capability, Resource-advantage theory, Industry Competitiveness.

INTRODUCTION

The current study is based on the growing literature around the concept of organizational capabilities (Slater, Olson, & Hult, 2006), and how these contribute to firm performance (Morgan, Vorhies, & Mason, 2009). Research in this area recognizes that a firm’s ability to deploy resources through its organizational capabilities may be more important than the amount of resources itself in driving performance (Vorhies, Morgan, & Autry, 2009). Previous studies also enhanced the understanding of how some firms with high-level capabilities overcome resources deficiencies and perform better than those with similar resources (DeSarbo, Di Benedetto, & Song, 2007; Krasnikov & Jayachandran, 2008; Morgan et al., 2009). Ketchen, Hult, and Slater (2007) argued that resources have only potential value, and that the actions (i.e.,
capabilities) developed and utilized by firms are what capitalize on these and result in superior firm performance. However, the resource-based view has not fully discovered what kinds of actions are critical and how they create the value of the resources that are available (Ngo & O'Cass, 2012).

Although good firm performance can be the result of resource uniqueness (Barney, 2001), or the efficient integration of existing resources (Eisenhardt & Martin, 2000), still little is known about how firms can better utilize their capabilities in competitive markets (Helfat, 2000; Song, Droge, Hanvanich, & Calantone, 2005). In addition, there have been no extensive, empirical or theoretical examinations of the interactions among firm capabilities (Song et al., 2005; Newbert, 2007).

In order to address this gap, we examined the integration of innovation and marketing capabilities by looking at the direct effects of each capability alone on performance. This kind of capability-capability interaction is known as a dynamic capability (Teece & Pisano, 1994). The allocation of resources related to such essential firm functions as innovation and marketing plays a key role in the implementation of strategy (Christensen & Bower, 1996). The ability of firms to integrate, build, and reconfigure these abilities in response to a changing environment can help build a strong foundation for the development of dynamic capabilities (Teece, Pisano, & Shuen, 1997). However, investing resources solely in innovation may lead to the capability-rigidity paradox, when the development of an existing product innovation capability prevents the exploration of new ones (Atuahene-Gima, 2005). We argue that the complementary effect of innovation and marketing is synergistic, and thus will have stronger impact on firm performance than the direct effect of each capability alone.

Although integration of firm resources and capabilities has long been recognized as beneficial to a firm’s competitiveness, it is still unclear how it actually affects profitability. Moreover, such interactions tend to have ambiguous effects on firm performance due to different environmental variables, such as industry turbulence (Song et al., 2005; Pavlou & El Sawy, 2011), or market orientation (Ngo & O'Cass, 2012). In addition, the separate effects of innovation and marketing capabilities have been shown to have different outcomes due to competitive pressure (Ahn, 2002; Cetindamar, Phaal, & Probert, 2009; Helfat, 2007). Therefore, the most important issue is that firms upgrade and reconstruct their core capabilities in response to their environments (Wang & Ahmed, 2007). This is because the inability to adapt to major environmental changes may significantly affect firm performance (Audia, Locke, & Smith, 2000), especially in today’s economy, when managers face challenges associated with frequent major and discrete environmental shifts in competitive, technological, social, and regulatory domains (Barreto, 2010), and when the lifespan of competitive advantages is decreasing over time (Wiggins & Ruefli, 2005). Resource allocation to the development of sustainable competitive advantages in such “hypercompetitive environments” (Wiggins & Ruefli) is a serious issue for firms of different size. Therefore, one motivation for this study is to investigate the results of dynamic capability under conditions of high industry competitiveness. Controlling for both industry and revenues, we test how the impact of organizational capabilities is reflected in net income among small, medium, and large enterprises.
Given the limited amount of resources available for investment in innovation and marketing, the development of these two capabilities requires careful managerial consideration in order to allocate resources in a way that is most beneficial for the firm. The challenge is thus how to invest resources to create more value and obtain sustainable competitive advantages in a very competitive market. In summary, this research aims to contribute to the literature in the following three ways: (i) in addition to the direct effect of internal (i.e., innovation) and external (i.e., marketing) capabilities, we examine the interaction effects of both on performance; (ii) this study also considers how industry competitiveness shapes the market and moderates the capabilities-performance relationship for different firms; (iii) finally, it examines how firms of different sizes develop organizational capabilities and deal with competition.

LITERATURE REVIEW

Classic resource-based or capability theories propose two related sources of advantage that allow firms to achieve and maintain competitive advantages. The first are the resources which a firm has accumulated (e.g., investments in scale), while the second are capabilities, which bring and deploy all these assets together to achieve a market advantage (Day, 1994).

In our conceptual framework, the relationships among capabilities and performance under conditions of high industry competitiveness are drawn from the resource-advantage (R-A) theory and dynamic capabilities perspectives. Connecting the R-A and dynamic capabilities theories in the current research explains the nature of resources in firms of different size, and how these resources can be utilized under competitive pressure, while dynamic capability theory clarifies how firms compete based on their resource base and build organizational capabilities out of existing resources.

Innovation is viewed as firm’s capacity to find and create new resources and produce products and services that are superior to those offered by competitors (Hunt & Morgan, 1995), while marketing is seen as a firm’s capacity to bring all its marketing resources together and enable them to be deployed in a way that improves performance. Therefore, innovation, marketing, and the interaction of both, can be considered as organizational capabilities, because they represent the act of deploying resources with a new ability to create value (Day, 1994; Yang, Marlow, & Lu, 2009).

Linking the theories of R-A and dynamic capabilities can enhance our understanding of the conceptual framework presented in this work, because: (i) it explains the sources of enterprise-level competitive advantage over time (Teece, 2007), represented by innovation, marketing, and dynamic capabilities; (ii) it considers the adaptation, integration, and reconfiguration of internal and external organizational skills, resources, and functional competences towards a changing environment (Teece, 2007; Teece et al., 1997), thus explaining the integration of firm resources and capabilities, which leads to the development of dynamic capabilities; (iii) it considers not merely technological innovation, but rather the capability to generate new products, services, or processes that can be used to enhance long-term performance (Rush, Bessant, & Hobday, 2007), and thus considers the multidimensional nature of innovation. Figure 1 presents a framework which indicates how organizational capabilities impact firm performance, as well as the moderating role of industry competitiveness.
Based on the above two theories, six hypotheses were generated as listed below. The arguments are eliminated due to the page limitation and are available upon request to the authors.

H1: Innovation capability is positively related to performance.
H2: Marketing capability is positively related to performance.
H3: Dynamic capability is positively related to performance.
H4: Industry concentration has a negative moderating effect on the relationship between innovation capability and performance.
H5: Industry concentration has a negative moderating effect on the relationship between marketing capability and performance.
H6: Industry concentration has a negative moderating effect on the relationship between dynamic capability and performance.

Figure 1. Conceptual model.

DATA COLLECTION

We conduct an empirical investigation using archival data. Time series data for the period from 2002 to 2011 was collected from Standard and Poor’s Compustat database, which provides data on United States (US) and Canadian publicly held companies. The following variables were retrieved: R&D and advertising expenditure, net income, total revenue, and number of employees.

The industry concentration ratio was assigned in accordance with the North American Industry Classification System (NAICS) and used as an inverse proxy of industry competitiveness. The industry concentration ratio is calculated by dividing the sum of the market shares of the 50 largest firms in each industry, based on total capacity, and represents the percentage of the total output of each industry accounted for by these firms. The industry concentration data is available from the US Census Bureau in years ending in the numerals two and seven. Given the time period of our panel data, industry concentration ratios are available for firms for the periods 2002-2006 and 2007-2011.

Dependent and independent variables were standardized by the number of employees in the corresponding firms. The indicator for innovation capability represented by R&D expenses was
thus divided by the number of employees, and other variables were standardized in the same fashion (Mithas et al., 2012).

RESULT AND IMPLICATIONS

This empirical study found that innovation capability is positively associated with performance in medium and large enterprises. Therefore, investments related to innovation capability enable medium and large enterprises to modify, extend, or introduce new products and services which contribute to greater profitability.

However, in small firms, innovation capability has a negative effect on firm performance, meaning that R&D expenditures would significantly reduce the overall profitability of an enterprise. Possible explanations for this result are that the innovation efforts in small firms were not yet reflected on their profitability in the data used in this study, or that the outcomes of such efforts were not significant enough to lead to a competitive advantage. The benefits of innovation are not reflected in profitability in the short term, but only become visible in later stages. Depending on the conditions that prevail in each specific industry, the development of innovative products may require a considerable amount of time before the resulting items can be successfully monetized, thus improving firm performance. For example, looking at the history of the development of new products in the hard drive manufacturing industry, we can see that many lagging firms once occupied niche markets and introduced new models of hard disks without gaining significant profits or demonstrating outstanding performance, while their disruptive innovative technologies were still in their infancy (Christensen, 1997). The second explanation is based on the inability of innovative small firms to sustain their competitive advantages due to a limited resource base. The impact that an innovation has on performance depends on the magnitude of the effect which it has on the competitive advantage of the focal firm compared to its competitors (Hunt & Morgan, 1996). It is likely that the products or services that are invented by small firms are less likely to create significant competitive advantages (Otero-Neira, Lindman, & Fernández, 2009), because they are easily imitated by competitors with greater access to resources.

As expected, a high level of industry competitiveness reduces the performance of small and medium enterprises. Under greater competitive pressure, small and medium firms are not able to monetize their innovative efforts, and thus the development of innovation capability is associated with decreased performance, because severe competition exhausts the resources that are available. On the other hand, a large number of smaller competitors are not a serious threat for large firms with a stable resource base, and thus innovation capability enables such companies to sustain their advantages in competitive markets.

In contrast to hypothesis 4, the results show that industry competitiveness serves as catalyst of innovative activity for large firms. This can be explained by drawing on the industry organization literature, which contains two theoretical predictions about the effect of competition on innovativeness. Traditionally, competition has been considered as detrimental for innovation and technological progress. However, competition forces firms to innovate, and can thus lead to better product innovation, performance, and productivity growth (Ahn, 2002). Also according to Hou and Robinson (2006), creative destruction is more likely to take place in competitive
industries, where high risk is associated with higher returns. The results presented in this work demonstrate that industry competitiveness is beneficial for the development of innovation capability, which leads to higher profits. However, competition is conducive only for large enterprises that can utilize more resources, build stronger innovation capability, overcome competitors, and thus gain high profitability.

For small enterprises, expenditures on marketing tend to decrease overall performance. This may be because advertising is less efficient for small firms, because their limited resources do not enable them to create the level of market awareness that companies with a greater resource base can achieve. Therefore, expenditures on advertising may severely weaken the resource base available for innovation activities at smaller companies. Therefore, due to size limitations and a lack of resources, small enterprises should focus on performance, and their resources should be allocated to activities that are most likely to enhance profitability.

For large enterprises, greater competitive results in increased performance, as the entry of new competitors motivates such companies to invest more in innovation and marketing activities. In a changing market, this dynamic capability is an essential factor which enables firms to create competitive advantages and increase profitability. Majumbar (2010) reported that the entry of more competitors into the US telecommunications industry actually increased the efficiency of incumbent firms. It has also been suggested that greater competition allows some firms to succeed, even when others fail (Dethier, Hirn, & Straub, 2008). Our results show that despite greater competition, the dynamic capabilities of large firms enable them to improve their level of innovation and also to better commercialize the resulting products or services, thus increasing profitability.

From an academic perspective, our findings have a number of implications with regard to how dynamic capability theory works when it comes to the integration of innovation and marketing capabilities. The results show that developing a dynamic capability out of innovation and marketing capabilities can strengthen a firm’s competitiveness and improve performance by increasing profitability.

In addition, from a dynamic capabilities perspective, industry competitiveness is a given condition, and one that forces firms to adjust to a rapidly changing environment. We also examined how competition affects and shapes dynamic capability in small, medium, and large enterprises. We found that although dynamic capability does not necessarily lead to enhanced performance, it can help enterprises to withstand competition. Furthermore, the results have some implications with regard to R-A theory, as the dynamic capability examined in this work is a newly created resource produced by the integration of marketing and innovation efforts, one that allows firms to gain competitive advantages and increase profitability.

Our findings show that building a dynamic capability is a good investment of resources for small, medium, and large enterprises. Due to their limited resources, small firms should concentrate their resources, capabilities, and managerial efforts on creating the right integration of marketing and innovation capabilities, because the resulting dynamic capability is critical in order to withstand competition. However, if resources are not managed properly, then innovation and marketing efforts can dilute focus of smaller companies and waste resources. In addition, the
results showed that each capability alone did not have significant impacts on performance for small firms.

For medium-sized enterprises, a good marketing capability is required to raise profitability in a highly competitive industry, and if this is not achieved then an innovation is unlikely to lead to actual profits. Managers should thus use market-based knowledge resources when building this dynamic capability, and focus innovative efforts on market needs (Ngo & O'Cass, 2012). For medium-sized enterprises, operating under the constraint of limited financial resources, innovation activities should be driven by strong market research and be more closely related to satisfying customer needs. In this way such efforts can support marketing capability, and enable a firm to promote the output of its innovative activities more successfully.

We found that due to their strong innovation and marketing capabilities, large enterprises are better able to increase performance and generate profits, even in conditions of high industry competitiveness. Managers of such companies should thus focus on building long-term competitive advantages, because competition itself is not a serious threat. Using their advantage of a significant, stable resource base, large enterprises should focus on process innovation, which requires long term resource investments that are difficult for competitors to imitate.

References


