EXTENDED ABSTRACT

Paper Title: Balanced Strategy of New Ventures under Resource Constraints – R&D versus Marketing Capabilities and New Venture Performance

Aim of the Paper and Research Framework

Porter's (1980, 1985) generic strategies of cost leadership and differentiation have become a dominant paradigm in the strategy and entrepreneurship literature. Each of these represents a fundamentally different approach to creating competitive advantages and promoting firm performance. According to Porter (1985), firms must make a choice between low cost leadership and differentiation or it will become stuck in the middle. Although Porter recognized that firms can pursue both a low cost and differentiation strategy successfully, he viewed these circumstances as temporal. When firms pursue both a low cost and differentiation strategy, they are vulnerable to the emergence of capable competitors that stress either differentiation or low cost. Put another way, Porter stressed that the combination of both low cost and differentiation is unlikely to produce sustainable competitive advantages in the market. This dominant paradigm has been supported in the literature. For example, Thornhill and White (2007) define a pure strategy as emphasizing one dimension of strategy relative to the other, and show empirical evidence that pure strategies perform better than hybrid strategies across multiple industries.

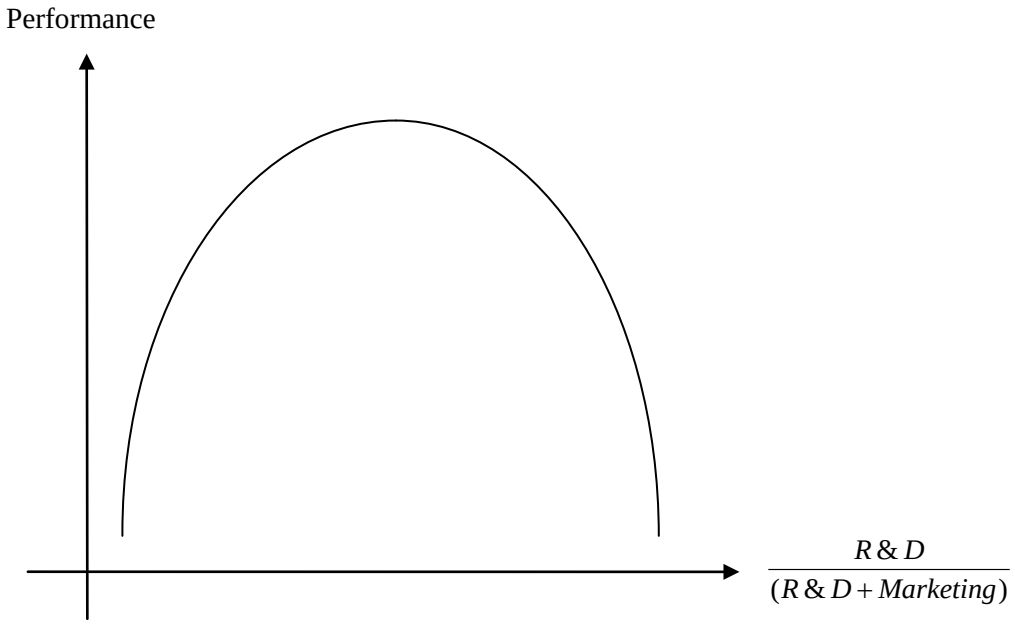
According to the traditional viewpoint of economics, however, Porter's theory of executing either a low cost or differentiation strategy is a puzzle for the maximization of firm performance. A low cost strategy involves reducing production costs and overhead with increased focus on economies of scale based on volume advantages (Porter, 1985), and it can be effectively implemented by expanding customer basis through aggressive marketing activities.

On the other hand, a differentiation strategy requires a greater investment in R&D to develop unique properties of final products and services so that firms can innovate earlier than competitors and establish first mover advantages in the market. As such, from a profit maximization problem of firms under resource constraints [i.e., Max $\Pi = \pi(R\&D, Marketing)$ subject to $R\&D + Marketing + Others \leq \overline{R}$], an optimal resource allocation between R&D and marketing activities should be made at the point where the marginal profit from R&D equals that from marketing activities. If $\partial\pi / \partial R\&D > \partial\pi / \partial Marketing$, firms should increase investment in R&D activities to enhance their firm performance, and vice versa. Only when $\partial\pi / \partial R\&D = \partial\pi / \partial Marketing$, do they achieve an optimal allocation of their investment between R&D and marketing resources resulting in their maximized profits.

Entrepreneurial new ventures are usually resource constrained compared to large and established firms due to the double liabilities of smallness and newness (Mudambi & Zahra, 2007), and, as a result, Porter's theory of the stuck-in-the-middle situation may not be applied to new venture performance. In this proposed project, I challenge Porter's dominant paradigm through the empirical analysis of U.S. new ventures created over the period of 2004-2010. Specifically, based on the concept of strategic balance in the strategic management literature (Deephouse, 1999; Rothaermel, Hitt & Jobe, 2006) and the potential complementarity between marketing and R&D activities in the marketing and innovation literature (Griffin & Hauser, 1996; Kor & Mahoney, 2005; Krasnikov & Jayachandran, 2008), I test a proposition that new ventures should be balanced between R&D and marketing capabilities to achieve strong competitive advantages and high performance in the market. Simply put, I aim to demonstrate

the superiority of a balanced strategy over a pure strategy, as captured in FIGURE 1, using a sample of new ventures from the newly updated Kauffman Firm Survey (KFS) dataset.

FIGURE 1: Balance strategy and new venture performance



Research Methods

Data and Variables

To conduct this outlined research project successfully, I applied for the Data Enclave (DE) version of the KFS data on the following variables in Fall 2012, and was awarded access to the Enclave in Spring 2013. In addition, I participated in the two-day Academy of Management (AOM) training sessions in Boston on August 1-2, 2012 for using the KFS data.

Since new venture performance is a dependent variable in this project, the following variables will be used to construct a diverse set of performance measures for new ventures.

(1) Total revenue

(2) Paid expenses

(3) Total profit or loss

(4) Estimated value of asset

(5) Estimated value of liabilities

(6) Sales out of the US

I define the degree of balance between R&D and marketing strategies as the ratio of the resources allocated toward R&D activities divided by those for both R&D and marketing capabilities [i.e., *degree of balance=R&D/(R&D+Marketing)*] using the following variables.

(1) Employment information for sales/marketing and R&D

(2) Service versus product

(3) IPR information

(4) R&D investment

Since I adopt a firm-level approach in the proposed project, I need to control for potential heterogeneity of firm characteristics that may affect new venture performance. As a result, the following variables are used for this controlling purpose.

(1) Industry codes

(2) Number of employees

(3) Prior work experience of owners in the same industry

(4) Gender of new venture owners (male or female)

(5) Percentage of total sales out of the US

Empirical Methodology

I estimate econometric models as quadratic fits between the degree of balance (*DoB*) and new venture performance (*NVP*). Therefore, the empirical equation to be estimated in this proposed project is as follows:

$$NVP_i = \beta_0 + \beta_1 \cdot DoB_i + \beta_2 \cdot DoM_i^2 + \sum \beta_c \cdot Control\ Variables_{ci} + \varepsilon_i$$

where for each new venture *i*, NVP_i is a performance measure; DoB_i is the degree of strategic balance between R&D and marketing capabilities; and $Control\ Variables_{ci}$ are five heterogeneous characteristics of new ventures that may influence their firm performance.

With respect to the choice of my empirical methodology, when the variances of the independent variables are unequal (i.e., heteroskedasticity), the OLS (ordinary least squares) estimators may be statistically inefficient resulting in misleading inferences of the estimators. Since the heteroskedasticity is a rule rather than an exception when cross-sectional data are used in regressions, I employ the FGLS (feasible generalized least squares) regression method to alleviate heteroskedasticity problem (Green, 2000). The FGLS is a two-stage weighted regression technique where each variable in the regression equation is divided by one size-related deflator in the estimation procedure to reduce statistical bias from using cross-sectional data (Greene, 2000). I also conduct Glesjer's test on the null hypothesis of homoscedasticity against some forms of heteroskedasticity with residuals from OLS before running the suggested regression model to justify the use of the FGLS regression method in the empirical estimation.

Contributions and Implications

By tackling this important task, I aim to make contributions to the strategic entrepreneurship literature in three aspects. First, I make a theoretical contribution to the literature by re-evaluating the relevance and/or applicability of Porter's (1980, 1985) stuck-in-the-middle situation between cost leadership and differentiation to entrepreneurial new ventures under resource constraints. Second, I make an empirical contribution to the literature by testing the superiority of a balanced strategy over a pure strategy between marketing and R&D capabilities for new venture performance: innovation capabilities alone may be useless to new venture performance without relevant markets where they can be commercialized; aggressive marketing campaigns alone may not produce high performance unless they are combined with differentiated and unique products that appeal to potential customers. Lastly, I make a practical contribution to business communities for formulating and implementing appropriate strategies of new firms with the empirical evidence to be obtained from this proposed project.

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