

The Static and Dynamic Growth Patterns of High-Tech Ventures in Korea

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ABSTRACT

This study explores on the static and dynamic growth patterns of high-tech ventures in Korea. We developed an integrative framework with target market (local vs. global), product/market maturity (existing vs. emerging), and technological capability (follower vs. pioneer). We also identified seven new ventures strategies as follows: i) reactive imitation, ii) proactive localization, iii) import substitution, iv) creative imitation, v) early market-entry, vi) global niche, and vii) global innovation.

With five successful Korean new ventures, we found different competitive behaviors and performance among new venture strategic types. This study also observed two different growth patterns: growth through strategic replication and growth through strategic change. It depends on whether they are pursuing similar strategy over time or different strategy within for growth. In addition, we found that creative imitation plays a stepping-stone role in two-step internationalization processes. Although this study is exploratory and needs more empirical studies, it can provide new ventures with meaningful guidelines for growth and internationalization with a dynamic perspective.

I. INTRODUCTION

Researchers have regarded entrepreneurship as processes to pursue opportunity without regard to resources currently controlled (Stevenson et al. 1994) and as organizational behavior based on strategic posture for pursuing opportunities (Covin and Slevin 1991; Lumpkin and Dess 1996; Zahra 1993). To identify and pursue promising business opportunities is one of the key entrepreneurial processes for start-ups and incumbents to grow continuously in the competitive environment. Prior studies just focused on the static comparisons between new venture strategies rather than dynamic changes. The purposes of this study can be summarized as follows: i) to develop an integrative framework to classify competitive strategies of

new ventures in a developing country and ii) to examine growth patterns of new ventures from a dynamic perspective.

This paper is composed of mainly three sections. Following introduction and literature review, we developed an integrative framework on new venture strategies. And next section, we analyzed new venture strategies and growth patterns from five successful Korean new ventures. Finally this paper concludes with summary and suggests managerial implications for new ventures to compete in the global business environment.

II. LITERATURE REVIEW

Historically new ventures, the sources of innovations, have pioneered new industries and displaced incumbents with technologically superior products (Schumperts 1934; Cooper and Schendel 1976; Tushman and Anderson 1986; Henderson and Clark 1990; Utterback 1994). A pioneer is the first company to introduce a product or technology to a market or a group of firms to entry into the early stage of product market development. The importance of pioneers is emphasized due to the advantages that only first-mover or pioneer can get in competitive environment. However, most of knowledge on pioneering advantages and disadvantages is based on the advanced countries or specific regions without global perspective. There are few studies on competitive strategies of technological followers in developing countries (Cho et al. 1998; Forbes and Wield 2000; Hobday 1995; Kim 1997). Previous studies have shown that technological followers in the developing countries have accumulated their technological capabilities from production or manufacturing -based capabilities to product or design-based capabilities (Kim 1997, Forbes and Wield 2000).

Recently a number of new ventures have identified and pursued business opportunities in the global market beyond the local home

market where new ventures are located from their inception. In the academic fields, there are also increasing interests on international entrepreneurship to explain and describe the existence of new ventures. Researchers defined international entrepreneurship as new and innovative activities that have the goal of value creation and growth in business organizations across national borders. (McDougall and Oviatt 1997; Oviatt and McDougall 1994). Although there were only few empirical studies on international new ventures, they showed that internationalization were related to different relationship with competitive strategy, industry structure, and performance. (McDougall 1989, McDougall and Oviatt 1996; Autio et al. 2000; Preece et al. 1999)

III. An Integrative Framework on New venture Strategy

We developed new framework with three dimensions to classify strategic types: i) technological capability (follower vs. pioneer), ii) product-market maturity (existing vs. emerging), and iii) target market (local vs. global). All three dimensions are key factors for new ventures to compete in global market and determinants of performance. The first dimension is the level of **technological capability** that firms develop and improve products and processes. Technological capability has been regarded as one of the most important factors on the performance of new ventures (Porter 1985, Zahra & Bogner 1999). Innovators can generate new technological knowledge and make their technological design on products and process widely accepted industry standard, dominant designs, in contrast to the imitator that should follow the technological trajectories and improve the existing products initiated by innovators.

The second dimension of the framework is the **product-market maturity**. Product-market maturity is related to the stage of product life cycle. Researchers conceptualized product-market life cycle stage as categorical variables, for example, introduction, growth, maturing, and decline (Anderson and Zeithaml 1984; Hambrick et al. 1982), and represented competitive environment and evolution of market (e.g., Levitt 1965; Rogers 1962; Anderson and Zeithaml 1984). One of important feature in technology-intensive industry is that the successive technological changes have shortened product life cycles so that existing products quickly become obsolesce ones. We classify product market into two stages: emerging and existing market. Emerging markets used in this paper refer introduction and growth stage of classic product life cycle and exiting markets indicate other stages, mature and decline.

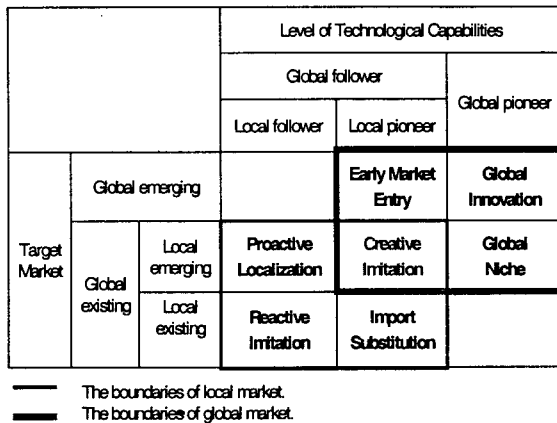
The final dimension, **target market**, addresses where most of customers are in and how many value chain activities are coordinated across different countries. The target market can be defined as the geographical scope of market that new ventures operate in and enter into. The boundary of target market can be simply divided into two geographical markets, i.e., local (or domestic) market and global (or international) market. Accelerating to the globalization and rapid diffusion of new products and services in high-tech industries, new ventures can target global market from the inception.

Finally we can build comprehensive framework on new venture strategies with three dimensions. We assume that business opportunities exist in each cell and one of key entrepreneurial processes is to identify and assess many business opportunities. Figure 1 shows that there are seven different strategic types (cells) to seek and pursue business opportunities, such as i) *reactive imitation*, ii) *proactive localization*, iii) *import substitution*, iv) *creative imitation*, v) *global niche*, vi) *early market entry*, and vii) *global innovation*. Of seven new venture strategies, first three strategies - reactive imitation, proactive localization, import substitution come from local market, other three strategic types global niche, early market entry, global innovation from global market, and the last one creative imitation is derived from overlapped cell of two geographical market. To identify and assess business opportunities, we should consider the relevance among three elements of the framework to build new ventures strategies.

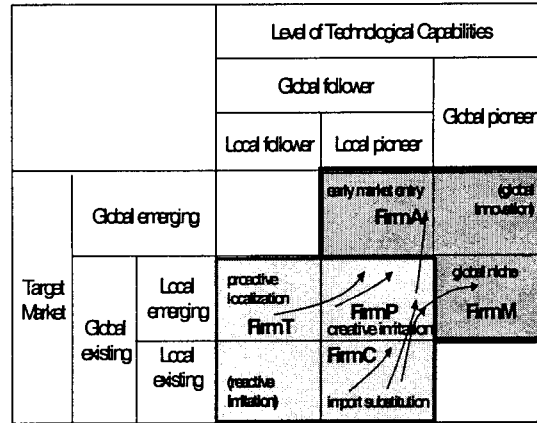
The framework suggested in this paper can provide more comprehensive perspective on strategic type for both local and global market. Using the framework, we can compare new ventures strategic types within a single industry, among multiple industries, furthermore between countries.

IV. Case Studies

We carried out case studies on the successful five Korean new ventures. All case firms are publicly held and listed on either of two Korean Stock Market Also they are mainly hardware-based manufacturers in competitive and technology intensive industries with rapid technological changes. Table 1 shows the summary of five cases on growth strategy over time, internationalization, and performance.



[Figure 1] A Framework on New Venture Strategy



[Figure 2] Growth Path of Case Firms

[Table 1]. The Competitive strategy and Growth Patterns of High-tech ventures

	Firm C	Firm P	Firm T	Firm A	Firm M
Characteristics of firms - Founding year - CEO	April 1988 Founder/Owner	March 1991 Founder/Owner	July 1990 Founder/Owner	February 1989 Founder/Owner	May 1985 Founder/Owner
Major products	CNC	Mobile phone (PCS)	Telecom solution (CTI)	Digital set-top box	Medical equipments
Growth Patterns -Replication vs. Change -Market vs. Technology	Strategic Replication Technology-Oriented	Strategic Replication Market-Oriented	Strategic Change Market-Oriented	Strategic Change Market-Oriented	Strategic Change Technology-Oriented
Competitive Strategy - Initial Strategy - Current Strategy	Import Substitution Import Substitution	Creative Imitation Creative Imitation	Proactive Localization Creative Imitation	Import Substitution Creative Imitation Early-Market Entry	Import Substitution Creative Imitation Global Niche
Degree of Globalization	Low	High	Medium	High	High
Strategic Changes	Moderate	Fast	Fast	Very Fast	Fast
CEO background	Engineer	Management	Management	Engineer	Engineer
Technological capabilities -R&D emp. ratio -R&D investment	20% 17%	23% 6%	38% 6%	45% 11%	32% 9%
Performance - Sales (1999) - Sale growth - ROA - # of emp. (1999)	41 billion Won (34 mil. US \$) 67% 10% 248 employees	227 billion Won (189 mil. US\$) 240% 4% 433 employees	55 billion Won (46 mil. US\$) 76% 17% 164 employees	54 billions Won (118 mil. US \$) 95% 3% 113 employees	212 billion Won (177 mil. US \$) 33 % 9% 314 employees

Note: The export ratio, sales growth, and ROA of new ventures are the average of last three years from 1997 to 1999.

V. Analysis and Discussions

In this section we just focus on the dynamic characteristics: internationalization and growth patterns.

Local new ventures follow two-step internationalization processes: *migration toward creative imitation* and *transition toward global players*. The first step is the new ventures movement toward creative imitation cells within framework as shown in Figure 2. Local new venture can pursue creative imitations, the most attractive one in the local market, from inception or move from other strategic types by changing their major products market from already grown product markets to growing ones or building technological capabilities in the same product and service market. And then local new ventures can become international new ventures by pursuing one of global strategies. International new venture would change most of their organizational attributes, the coordination of productions, and human resources with the global perspective.

In addition, We also found two different growth patterns from case studies. One pattern is the *growth through strategic replication* initiated by Firm C and Firm P. These pattern means that new ventures use similar strategies when they enter into new markets with familiar characteristics in terms of three dimensions. The other pattern is *growth through strategic change*, found at Firm T, Firm A, and Firm M. New ventures can pursue more attractive business opportunities by accumulating technological capabilities and changing their product and target markets. The first patterns seem to stay in a specific cell and the others look like moving toward upper and righter cells in the framework.

Figure 2 that depicts the dynamic patterns of strategic changes for five case firms, we can observe another growth pattern. Some firms (Firm P, Firm T, and Firm A) move along the product/market dimension [*market-oriented growth pattern*], while others (Firm C and Firm M) move along the technology capability dimension [*technology-oriented growth pattern*].

Many factors are influencing on the growth patterns and speed of change in new ventures. This papers found that following three factors - initial conditions of new ventures (i.e., entry strategy and resources capabilities at the founding time), entrepreneur or management team's capability (i.e., industry experiences and educational/functional/social backgrounds), and technological capability (i.e., R&D intensity and technological alliances), as most important determinants of growth patterns.

VI. Summary and Conclusions

We developed comprehensive framework with an integrated viewpoint of local and global markets. Three factors were used to classify seven new venture strategies - technological capability (pioneer vs. follower), product-market maturity (emerging vs. existing), and target market (local vs. global market). We analyzed five successful Korean new ventures on how they have survived in the local market and grown into the global market. Also we identified two different growth patterns of strategy: strategic replication or strategic change within the framework. It is also found that creative imitation type is very important as a stepping-stone for globalization. As this study is an exploratory one, it has many limitations to develop more theoretical and practical framework. We should develop more refined research models with hypotheses, empirical studies with more samples on diverse settings, and wide comparisons among different countries. The framework on new venture strategic type can help venture firms to formulate right strategies in a given situation and to find appropriate growth strategies. It can provide new ventures in the local market with meaningful guidelines for growth and globalization.

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