



## Firm competencies on market entry success: Evidence from a high-tech industry in an emerging market<sup>☆</sup>

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### ABSTRACT

This study explores the effects of three firm competencies, namely, business network, new product development (NPD), and marketing management on market entry success of a high-tech industry in an emerging market. Business network encompasses research and development (R&D) partnership, inter-organizational network, and government relationship (*guanxi*). NPD consists of R&D capability and product process innovation, while marketing management encompasses distribution channel, promotion, branding, and information management. Using data from 55 biopharmaceutical multinational companies in China, this study applies structural equation modeling technique with confirmatory factor analysis for testing and estimating relationships. We find that only marketing directly influences entry success, whereas the other two yield indirect effects. Our study also suggests the critical role of business network as a prerequisite for entry process. Simultaneously, NPD serves as the driving force of marketing through the creation of product competitiveness.

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### 1. Introduction

As the largest emerging economy, China becomes the most important investment destination (Gassman & Han, 2004). China has even overtaken the USA as the biggest recipient of foreign direct investment, rising to US\$53 billion in 2002 and reaches US\$92.4 billion in 2008. Although there was a slight dip in 2009 due to global slowdown, 2010 has again seen increasing up to US\$105.7 billion (Mofcom, 2011). Investment in hi-tech industry also shows similar result. Liu and Daly (2011) claim that from 1995 to 2008, a significant investment transformation from low-tech to hi-tech industry happened. The share of foreign total exports from China over the period increased significantly more in hi-tech (46.8% to 62.9%) compared with low-tech products (43.3% to 54%). As part of this total export, the medical and pharmaceutical sector showed a significant increase from 21.9% to 37%.

The catalyst for entry success of the high-tech industry in emerging market has received attention in international business, where many researchers underline the critical role of firm competencies to enhance entry success. Further, existing studies have discussed the types of competencies needed but only in a limited scope. Subramaniam and Venkatraman (2001) highlight NPD and innovation, others are exploring marketing (Jaworski & Kohli, 1993; Salomo, Brickmann, & Talke,

2008; Vorhies, Morgan, & Autry, 2009), or business networks (Lee, 2007; Li, 2005; Nielsen, 2005; Yang, 1998). Broader studies are simultaneously observing NPD and marketing (Aydin, Cetin, & Ozer, 2007; Bruni & Verona, 2009; Song, Droge, Hanvanich, & Calantone, 2005), investigating business networks and product process innovation (Pittaway, Robertson, Munir, Denyer, & Neely, 2004; Ritter & Gemunden, 2004; Zhou, 2010), or exploring networking and marketing (Fan, 2007; Yu, Gilbert, & Oviatt, 2011). From these studies we find that researchers concern with the roles of networking, NPD, and marketing, and also find that these competencies are indirectly related. Based on this, we argue that it is necessary to conduct a further study which simultaneously covers three competencies, the interplay among them, and analyze how they affect entry success. To achieve this, we apply structural equation modeling technique to explore the effects of competencies on entry success. We choose China to represent emerging market because it is the largest market in the world in this regard (Gassman & Han, 2004; Luo, 2001a), while biopharmaceutical is chosen since it is considered as a representative setting of the high-tech industry due to its strongly science based, nimble, innovative characteristics, and within the industry – the firms are far more radical than in other industries (Gans & Stern, 2004).

We organize the rest of the paper as follows. In the next section, we review the literature and propose hypotheses that link firm competencies with entry success. Next, we explain the sample, measurement, and analytic techniques to test the hypothesis. Subsequently, we present and discuss the findings. Finally, we outline theoretical and practical implications to Asian business, and provide future research directions.

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## 2. Theory and hypothesis

### 2.1. Firm competencies and market entry success

The mechanism of how competencies can drive entry success can be regarded in two perspectives. The resource based view suggests that competencies are catalysts to asset accumulation, which underpins the competitive advantages (Verdin & Williamson, 1994), contributes to value, and acts as a gateway to new markets (Coates & McDermott, 2002; Hamel, 1994), while the industrial organization underlines that entry success is influenced by the firm's ability to acquire resources and capabilities (Robinson & McDougall, 2001) which can accumulate firm strength and reduce entry barriers (Pehrsson, 2004; Porter, 1980).

As mentioned earlier, in this study we explore the relationship of three competencies to entry success. To identify the measure items we combine two frameworks of structural indicator (Verdin & Williamson, 1994) and entry barrier factors (Luo, 2001a), adopt supporting publications, and then followed by in depth-interview and focus group discussion (FGD) to validate the measure items. The in depth-interview and FGD were conducted between 2009 and 2010 by involving 13 experts in China from various firms (i.e., pharmaceutical manufacturing, association, and business consulting). Following these processes, we find that NPD is captured by R&D and product process innovation. Marketing management is measured by distribution channel, marketing promotion, branding, and information management. Business network encompasses R&D partnership, inter-organizational network, and government relationship (*guanxi*).

Then how do we measure market entry success? Most previous studies underline financial performances such as profit and revenue (Osland & Cavusgil, 1996). However, Yang (1998) defines success from non-financial performances. The logic behind this idea is that multinational companies (MNCs) have different goals and expectations at a certain time, and they come with both success and war stories of their China operations. Evidence from in-depth interview and FGD shows that it takes 10 to 15 years to obtain profit, thus in the early stage of entry process, MNCs perceive success from their non-financial performances. With this understanding, we adopt Pan and Chi (1999) who identify three entry success measures. First, timing affects profitability in China. The early movers are locked in strategic advantageous positions and apparently capable of sustaining this advantage. The late entrants have to fight an uphill battle to gain a market position (Pan & Chi, 1999; Robinson, Fornell, & Sullivan, 1992). In this regard, we identify that early entrant yields better performance and vice versa. Second, the choice of entry mode is addressed. Before China joined the World Trade Organization in 2001, most MNCs enter China through joint ventures (JVs) with local firms, and gain higher profitability. This situation changed dramatically after 2001. In 2009, the proportion between wholly foreign-owned enterprises (WFOEs) and JVs is 80–20 (Mofcom, 2011). Moreover, when firms have high levels of R&D capability, full ownership will better protect the proprietary technology from theft by local rivals (Chiao, Lo, & Yu, 2010). In this regard, we define that WFOE yields highest performance. Third, location advantage in China is important. Pan and Chi (1999) underline three municipalities, namely, Beijing, Shanghai, and Tianjin, as more profitable than other locations. However, experts reveal that current competition in those cities has intensified, which triggered MNCs to expand in other smaller cities. Based on this, we use market coverage instead of location advantage, where wider market coverage leads to a higher performance (Wallace, Johnson, & Umesh, 2009).

### 2.2. New product development competence

NPD competence is described as the firm's ability in identifying the needs of new products, translating them into technical specifications,

and producing the final product (Aydin et al., 2007). In biopharmaceutical, this is critical with some reasons. First, the industry is challenged to discover and develop new products, and needs to build credibility in novel areas such as cell biology, molecular genetics, and medicine delivery (Khilji, Mroczkowski, & Bernstein, 2006). Second, product development and process innovation have a key function in the transition of products from bench to market, where these competencies positively drive firm development speed (Ritter & Gemunden, 2003, 2004; Salomo et al., 2008), and contribute to firm renewal (Danneels, 2002). Third, it takes longer time to develop biopharmaceutical products (about 15 years) from scientific discovery to commercialization, than traditional pharmaceutical, thus the ability to design effective and efficient NPD is critical to reduce costs (Dimasi & Grabowski, 2007). Further, firms with NPD competence in developing unique medicines and possess strong internal R&D, enjoy greater international entry success (Yeoh & Roth, 1999). This finding leads to our first hypothesis:

**Hypothesis 1.** When a high-tech firm enters emerging markets, the new product development competence of the firm positively affects the market entry success of the firm.

### 2.3. Marketing management competence

Joshi (2005) defines marketing management as a process in managing the practical application of marketing techniques, resources and activities of a firm, while Kotler and Andreasen (1996) specifically define marketing as the process of planning, executing programs designed to create, build, and maintain beneficial exchange relationships with target markets for satisfying individual and organizational objectives, where it helps firms take a pro-active attitude to do business and be responsive to customer needs and market changes (Kohli & Jaworski, 1990). In high-tech sector, many publications overemphasize key innovation outcomes which are related to R&D performance (Luca, Veroma, & Vicari, 2010). However, to deploy successfully firms need to develop marketing capabilities that enable them to deliver repeatedly the desired benefit bundles to customers (Vorhies et al., 2009). Previous studies show that marketing has a positive impact on market success (Jaworski & Kohli, 1993; Salomo et al., 2008). Specifically, it enables the realization of the firm's strategies (i.e., differentiation, cost, and product market), which leads to increased market and financial performance. At project level, marketing competence is useful in the final positioning and launch of the medicines, contributes to knowledge related to the opportunity of the potential candidate molecule, and identifies the right technological avenue (Bruni & Verona, 2009). These lead to our second hypothesis:

**Hypothesis 2.** When a high-tech firm enters emerging markets, the marketing management competence positively affects the market entry success of the firm.

### 2.4. Business network competence

Business networking is a socioeconomic activity by which groups of like-minded business people recognize, create, or act upon business opportunities (Osterle, Fleisch, & Alt, 2001). In biopharmaceutical, networks are vital to discover opportunities, test ideas, garner resources for the formation of new organizations, and enable firm to establish and use relationships with other organizations (Ritter & Gemunden, 2004). High-tech industries form two types of partnerships through networking, which are partnership and sponsorship-based linkages (Lee, Lee, & Pennings, 2001). Under partnership-based scheme, we identify two types of partnership. First, the R&D partnership represents the relationship between firms and academic (Wang, Hong, Marinova, & Zhu, 2008). Firms compete on the basis of accessing a unique and valuable research-based knowledge, which makes it crucial to have appropriate sufficient returns from R&D-related investments (Erden, Kroh, Nytorp,

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