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Internationalization Strategy of MNEs from Emerging Economies: The Case of Huawei

Sunny Li Sun

Abstract: With the current rise of multinational enterprises (MNEs) from emerging economies (EE), more attention is now being directed to EE MNEs and what drives the internationalization of these companies. In this article we aim to provide more insights into the strategies and development of EE MNEs by conducting an in-depth study of a Chinese high-tech company in the communications equipment industry: Huawei. Our case study proposes that EE MNEs (1) tend to nurture their capability in the domestic market as a base before internationalization; (2) prefer to enter markets with fewer barriers in cultural, technological, economic, and institutional distances to accumulate experience and move up the value curve; and (3) use inward and outward linkages to complement their strengths and offset their weaknesses in the global market. Our study on the internationalization patterns of EE MNEs enriches and broadens current MNE theory.

Keywords: Internationalization, multinational enterprises, emerging economies, value curve

INTRODUCTION

What determines the international success or failure of a firm is a fundamental question in strategy and international business (IB) research (Peng 2004; Rumelt, Schendel, and Teece 1994). Most of the established IB literature has assumed or taken the perspective of how multinational enterprises (MNEs) from developed economies (hereafter DE) successfully enter and effectively compete in other developed or developing countries. With the current rise of MNEs from emerging economies (hereafter EE), more attention is now being directed toward EE MNEs and what drives the internationalization of these companies (Bartlett and Ghoshal 2000; Luo and

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In developing this research, I have benefited from helpful discussions with Mike W. Peng, Yanli Zhang, John Cantwell, and Daying Yan. I thank the special issue editor Prof. Rajesh K. Pillania and two reviewers for their excellent guidance. I also appreciate the editing help from Erin Pleggenkuhle-Miles.

Tung 2007; Pillania 2009a). However, relatively little is known about how EE MNEs develop their strategies to survive and thrive within the “new world order” as latecomers (Pillania 2009b; Mathews 2006; Ramamurti 2004). In this study, we ask three unique questions: (1) where do EE MNEs’ competitive advantages originate; (2) what constraints do EE MNEs face in their internationalization and how do they deal with them; and (3) how have the EE challengers established themselves successfully against the sometimes fierce resistance of DE MNEs? We expand the influence of the resource-based view (RBV) into traditional theories of internationalization and provide more insights into the strategies and development of EE MNEs through an in-depth study of Huawei, a high-tech Chinese company in the global communications equipment industry.

Huawei was established in 1988 and has become one of the leading global telecommunications network solution and equipment providers. In 2008, Huawei rose to become the largest patent applicant in the world under the WIPO Patent Cooperation Treaty (PCT) (No. 4 in 2007).¹ Huawei’s revenue rose 36% in 2008 to \$17 billion, showing better performance than most of its Western rivals including Ericsson, Alcatel-Lucent, Motorola, Nortel Networks (Nortel filed for bankruptcy protection in 2009), and Cisco, amid the global economic turmoil.² In January 2008, Huawei won the first global commercial contract to supply equipment for an advanced “fourth-generation”/LTE mobile network in Oslo, Norway. The bid shows that Huawei also has high-end technologies in its portfolio, as well as cost-competitive ones. Business Week magazine also lists Huawei in “The World’s Most Influential Companies,” which lists companies that have played a major role in the world of business during 2008 and could shape the corporate landscape for years to come. With 75% of its contract sales coming from outside China in 2008, Huawei is a significant example of an EE MNE that has nurtured its capability in the low-end domestic market and then treated global competition as an opportunity to accumulate capabilities, moving into the more profitable value curve, and adopted strategies that turn late-comer status into a source of competitive advantage.

RESEARCH QUESTIONS AND THEORETICAL FRAMEWORK

Internationalization refers to the degree in which a firm’s sales revenue or operations are conducted outside its home country. There are three main streams of research in internationalization: (1) the eclectic paradigm (Dunning 1980), which highlights the importance of transaction cost and ownership advantage (Buckley and Casson 1976); (2) the Uppsala process

1 The World Intellectual Property Organization (WIPO) (2009) Global Economic Slowdown Impacts 2008 International Patent Filings, http://www.wipo.int/pressroom/en/articles/2009/article_0002.html

2 The Wall Street Journal (2008), Huawei Posts Sales Growth, Even as Rivals Slump. January 16, 2008.

model (Johanson and Vahlne 1977), which identifies the different development stages of internationalization and treats MNEs as learners (Contractor 2007; Mathews 2006) and knowledge acquirers (Kogut and Zander 1993); and (3) the international entrepreneurship approach (Mathews and Zander 2007; Oviatt and McDougall 1994), which argues that “born global” firms are more likely to internationalize at a young stage with limited resources but a strong global mindset.

Although these three streams give us useful knowledge of internationalization, some scholars still want to integrate different perspectives to enhance our understanding of the complex phenomenon of firms’ international behavior (Andersson 2000). Could these three streams of research fully answer the critical questions emerging from EE MNEs? Are existing theories in the context of developed economies adequate, or do they need be modified to explain internationalization of emerging market firms? To build a solid theory, we first identify three unique questions related to EE MNEs, then try to answer them by integrating the RBV framework (Li 2007; Peng 2001; Management International Review 2007/2 special issue).

Question 1: Where do EE MNEs competitive advantages originate?

In traditional MNE theory, MNEs exist because of their capability to transfer and exploit knowledge more effectively in intrafirm subsidiaries than through the external market. In other words, MNEs have ownership advantage in rent appropriation (Peng 2001). However, even we agree that while EE MNEs have some specific competitive advantages (such as in low cost production), their own technologies, resources, and capabilities are all limited compared to their grown-up DE counterparts. Therefore, one question that rises is: where do their capabilities come from? We explore this critical question from two angles: the demand side and the supply side.

First, from the demand side, all EE MNEs have deep roots at the bottom of the pyramid in domestic countries (Prahalad 2005). Although these EEs have inadequate infrastructures, slothful bureaucracy, and weak institutions, emerging markets are scalable enough to make a profit. For example, Hindalco, Essar, Tata Steel, Mahindra, Ranbaxy, and other India giants grew up and matured by serving the domestic Indian market first. Recently, China’s cross-country M&A deals and oversea investment in acquiring natural resource firms have grown at a rapid pace. Of the top five Chinese

M&A deals in terms of size, three are resource-related in 2008.³ This trend is also driven by the domestic market demand.

Second, in the macro-level of the supply side, strategic trade theory suggests that a large domestic market increases the economies of scope and that countries tend to export those goods for which they have relatively large domestic markets (Krugman 1979). Extending Krugman's model of monopolistic competition, Melitz (2003) argues that firms need to first prove themselves at home, discovering their own limits and abilities. Only after firms gain knowledge of their own productivity can the best of the firms then venture overseas because entering foreign markets is costly with irreversible investments. A trade flow dynamics model further supports that the boom of emerging global-challenged firms has a strong correlation with the domestic business cycle (Ghironi and Melitz 2007). This view also echoes the organization ecology theory, which states that intense competition in the domestic market filtrates and sorts firms, eliminating the weakest firms and leaving a greater share of the market to their stronger rivals (Barnett and Hansen 1996).

In the meso-level of the supply side, the domestic market also geographically concentrates on interconnected firms, specialized supplier and service providers, associated universities, research institutions, and trade agencies to build the cluster, a striking agglomeration of virtually every competitive economy (Porter 1990). Porter also emphasizes the importance of local rivalry and demanding customers as the driving forces behind the evolution of Japanese competitive firms. EE MNEs can benefit from domestic emerging clusters to increase their innovation and growth (Doz, Santos, and Williamson 2001; Porter 2000). For example, domestic embeddedness and knowledge transfer among India IT industry clusters also breeds India's outsourcing firms' innovation capability and global competitiveness (Dayasindhu 2002; Niosi and Tschang 2009).

In the micro-level of the supply side, different from matured DE MNEs that can mobilize and exploit the knowledge base across individual subsidiaries all over the globe (Doz et al. 2001; Pillania 2009c), EE MNEs rely strongly on the home country's knowledge base, especially in their early stages of international ventures (Kuemmerle 2002). Other studies also show that the shapes and sizes of EE MNEs depend on the home-country context although they leverage distinct competitive advantages and pursue distinct internationalization paths (Ramamurti and Singh 2009; Pillania 2008).

3 Reuters: China's hunger for resource M&A remains strong, November 7, 2008; Economist: China's quest for resources: A ravenous dragon, March 13, 2008.

Combing the two sides, by serving domestic markets or growing in local clusters with home knowledge, EE MNEs sharpen their competitive teeth and build dynamic capability in reducing cost or engaging innovation. EE firms may not be able to compete with DE MNEs in the sense of absolute technology leadership, but they often come up with disruptive innovations (Bower and Christensen 1996) and recombinations of technologies that suit the local market and capture market share. Building on the advantages from the home country, EE MNEs are able to employ critical resources and high talent and leverage the comparative advantage to develop their internationalization strategy. Therefore, "...in shaping the nature of these initial ownership advantages of developing country firms, home country characteristics play an important role" (Cantwell and Barnard 2008: 115). Accordingly, we offer the following:

Proposition 1: EE MNEs tend to nurture their capabilities in the domestic market and clusters as a home base in their internationalization, especially in their early stages.

Question 2: What constraints do EE MNEs face in their internationalization? How do they deal with them?

The Uppsala process model proposes that psychological distance, such as differences in language, education, business practices, culture, and religion, is the most important factor burdening firms in internationalization (Johanson and Vahlne 1977). MNEs increase their internationalization by gradually accumulating, integrating, and learning the knowledge of foreign markets. However, this model has roots in the mature MNEs in Scandinavian countries and ignores division of labor in the international product market. According to the product cycle theory (Vernon 1966), EE firms produce low-end standardized or commoditized products with low costs, while DE MNEs produce high-end new products with premium prices. Therefore, EE firms face more pressure because of the extra cost of internationalization while they find that distant customers comply with alien regulations and set up distribution channels abroad more than their DE counterparts. EE firms' low margin in low-end products sometimes cannot cover the extra costs. Thus, how to increase the value of EE MNEs products becomes their toughest challenge.

Bartlett and Ghoshal (2000) propose a value curve strategy to promote EE MNEs into more-profitable product segments. A value curve is a graphic depiction of a company's relative performance across its industry's key success factors (Kim and Mauborgne 1997). According to conventional logic of competition, an industry's value curve follows one basic shape.

EE MNEs, as latecomers, can improve value by offering a little more for a little less and challenging the shape of dominant DE MNEs' curve. For example, comparative research finds that Chinese and Indian software outsourcing firms engage in a persistent pattern of moving up within the international value chain towards higher value-added segments, in spite of their differences (Niosi and Tschang 2009).

However, moving up the value curve is not an easy job. It calls for EE MNEs managers to change their peripheral mindset, acquire advanced skills, and build up complementary assets in customer relations and brands (Bartlett and Ghoshal 2000; Mathews 2006; Ramamurti and Singh 2009). In the moving up process, the Uppsala process model also supplies valuable advice on how to increase gross margin by introducing technological and marketing complexity.

Johanson and Wiedersheim-Paul (1975: 308) refer to "psychic distance" as "factors preventing or disturbing the flows of information between firm and market." For example, Indian software outsourcing firms mainly target culturally similar markets, such as the US market where the English language is dominant with a low psychic distance. To some degree, Chinese firms do the same with the Japanese market (Niosi and Tschang 2009). However, the concept of "distance" has recently been criticized for not being thorough enough to describe, analyze, and assess the impact in multi-cultures as a metaphor (Shenkar, Luo, and Yehekel 2008), and Uppsala school's focus on a single dimension, especially in cultural distance, are contradictory in empirical examinations (Tihanyi, Griffith, and Russell 2005). To fully catch divergence between low-cost countries and high-cost countries, we extend this one dimension concept to the other three, namely technological distance, economic distance, and institution distance (Tsang and Yip 2007; Vernon 1966; Xu and Shenkar 2002). These four dimensions (see Figure 1) more clearly show the difficulties EE MNEs have in moving up the value curve. For example, institutional distance affects EE MNEs' choices of entry country, entry mode, and joint ventures (JVs) or subsidiary performance (Gaur and Lu 2007; Tsang and Yip 2007). For example, the Chinese National Offshore Oil Company (CNOOC) fails to bid for American company Unocal, and Huawei's acquisition on 3Com fails in the US congress.

EE MNEs with limited capabilities are more likely to enter markets that are normatively adjacent, as they can gain more competitive advantages through establishing legitimacy in the host country and transferring strategic orientation and organizational practices from the parent firm to the foreign subsidiary. The RBV on the theory of firm growth (Penrose 1987)

supports such geographic expansion patterns, sequential decision making, and learning (Buckley and Casson 2007).

To avoid head-to-head experienced global DE MNEs, Bartlett and Ghoshal (2000) further suggest that EE MNEs first enter the smaller markets where DE giants are not yet well established. Through the incremental process of moving up the value curve, as suggested by the Uppsala School, EE MNEs accumulate knowledge of foreign markets and overcome barriers from cultural, technological, economic, and institution distances. Thus, we offer the following:

Proposition 2: EE MNEs prefer to enter markets with fewer barriers in cultural, technological, economic, and institutional distances to accumulate experience, overcome obstacles the liabilities of foreignness, and move up the value curve.

Question 3: How do latecomers like EE MNEs catch up? How have the EE challengers established themselves successfully against the sometimes fierce resistance of DE MNEs?

There has been debate on whether EE latecomers have internationalization strategies that differ from traditional strategies of MNEs from DE (Dunning 2006; Mathews 2006). Mathews (2006) argues that challenger firms from EE establish themselves successfully through the strategy of linkage, leverage, and learning to overcome the sometimes fierce resistance of incumbents. The new phenomena suggest new perspectives on the resources accessed through internationalization and inspire scholars to rethink the criteria normally utilized in traditional resource-based accounts of strategy, which focuses more on the internal resources of firms (Lavie 2006).

The RBV framework helps incorporate entrepreneurial management into the theory of MNEs (Augier and Teece 2007). While Oviatt and McDougall (1994) suggest that new ventures strongly rest on alternative governance structures because they commonly lack sufficient resources to control many assets, the strategy also can be applied by EE MNEs. EE MNEs can have early access to information, quickly enhance their knowledge assimilation capability, and jointly shift the value curve through building external networks (Mathews and Zander 2007).

Network linkages, as a potential source of learning, promote efficient skill transfer among firms or generate novel discoveries (Powell, Koput, and Smith-Doerr 1996) and gain or retain access to materials, markets, man-

power, or other productive resources (Ahuja 2000). Because of the unbalanced learning race (Hamel 1991) and unequalized relationship between latecomers and front-runners in size, skill, and resource endowment in the external network, EE MNEs have many opportunities to short the technology gap through knowledge spillovers. Such spillover effects rest on the motivation of DE MNEs to achieve, expand, or defend their first-mover advantages (Javorcik 2004), the absorptive capabilities of EE local partners (Buckley, Clegg, and Wang 2007), and the partners' structure position in asymmetrical alliance network (Ahuja 2000).

Another kind of network is built among EE MNEs. The linkage in this kind of network is the best way for EE MNEs to acquire complementary assets and share knowledge. For example, Desarrolladora Homex is investing a total of \$4m in a JV called Homex India and has struck an alliance with the Egyptian Sawiris business dynasty to build 50,000 new homes in Cairo. EE MNEs use such inward and outward alliances to acquire strategic assets needed to compete more effectively against global rivals and to exploit

Figure 1: Latecomer EE MNEs' Internationalization Strategy

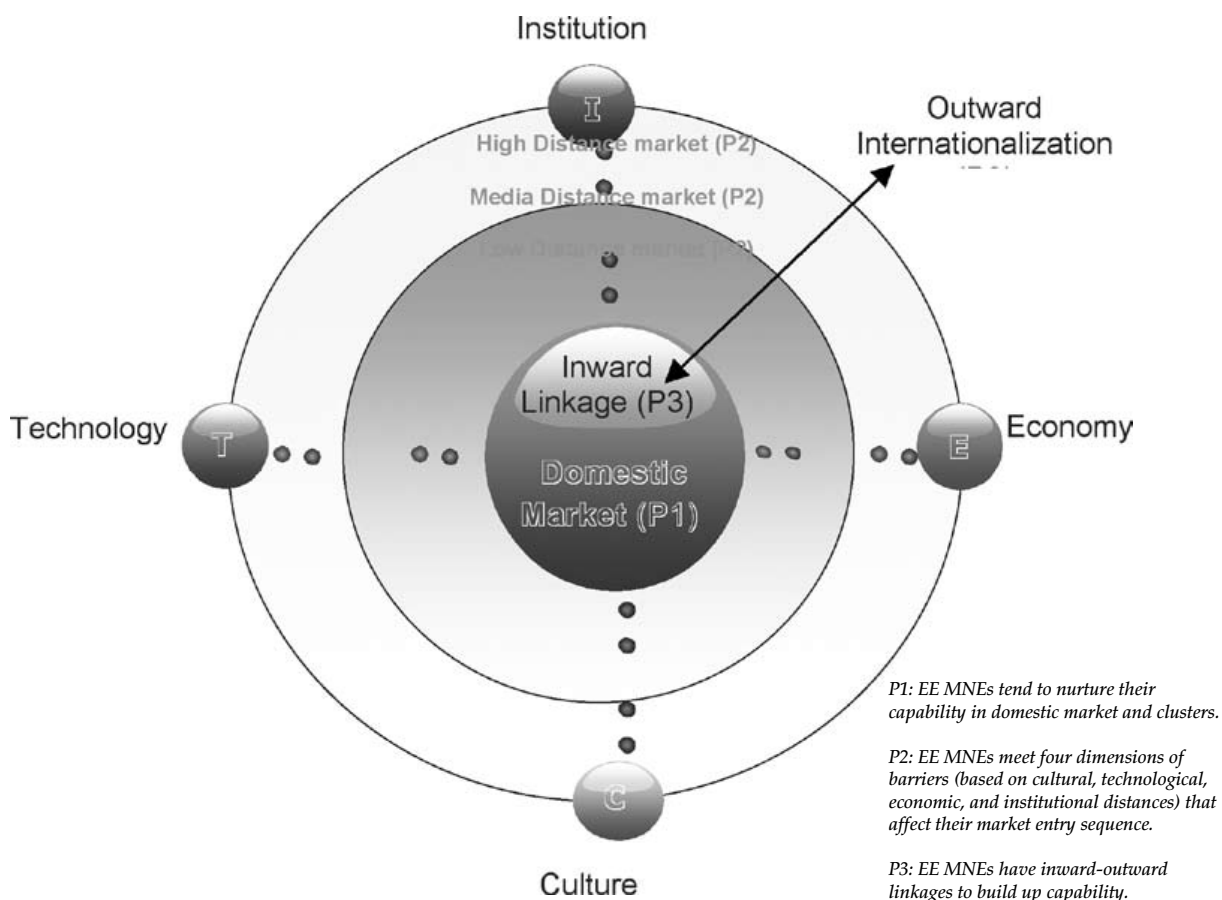


Table 1: EE MNEs Enrich Internationalization Theory

Research Question	Underlying IB Theory	Features of EE MNEs
Where do EE MNEs competitive advantages originate?	Eclectic paradigm: owner/location/internalization advantages	Home country market: Nurture capability (P1) <ul style="list-style-type: none"> • Domestic demand • Domestic competition • Cluster • Knowledge base
What constraints do EE MNEs face in their internationalization? How do they deal with them?	Internationalization as a process and learning experience under the Uppsala process theory	Market Entry Sequence: Accumulate capability (P2) <ul style="list-style-type: none"> • Move up value curve • Shorten institutional distance • Shorten economic distance • Shorten technologic distance • Shorten cultural distance
How have these EE challengers established themselves successfully against the sometimes fierce resistance of DE MNEs?	Accelerated internationalization from international entrepreneurship theory	Inward-outward linkages: Build up capability (P3) <ul style="list-style-type: none"> • Alternative governance structure • Network • Knowledge spillover

more foreign opportunities to replicate their business model, which is effective in their domestic market. Thus, we offer the following:

Proposition 3: EE MNEs tend to equip themselves with inward and outward linkages, like hybrid governance structures (e.g., joint ventures or cooperation with private equities), to complement their strengths and enhance their capabilities in the global market.

Figure 1 summarizes our theoretical framework and the three propositions. Overall, based on the three questions and three propositions, we argue that integrated traditional IB theories and RBV will catch the new movement of internationalization of a firm from EE (Peng 2001). EE MNEs exhibit some patterns of internationalization that are uniquely suited to their advantages and challenges, and we believe that studying them will contribute to and enrich IB research and practices, as summarized in Table 1.

METHOD

We use case study as the main methodology because there is a limit on existing theories that examine the rarely explored subject of the internationalization of EE MNEs. In such situations, a case study approach for explorative, descriptive, and explanatory questions is useful in generating novel and accurate insights from the phenomenon under study (Eisenhardt and Graebner 2007). Case research design allows cases to be treated as a series of independent experiments to confirm or disconfirm our theoretical construction (e.g., Duysters, Jacob, Lemmens, and Jintian 2009; Lee and Slater 2007; Li 2007). We interview 13 senior managers of Huawei from its headquarters in Shenzhen, China and Dallas, Texas, the U.S. during the last five years. The managers' functional departments cover R&D, sales, marketing, and human resources. We also interview four senior managers of Huawei's rivals or partners, including ZTE Technology Co. (in Shenzhen), 3Com (in Hangzhou, China), Cisco (in San Francisco), and Nortel (in Dallas). We collect 257 reports or books about Huawei, covering 15 years of history. The long-term tracks of investigation improve our interpretation of data and help us construct systematical theories.

We will show how Huawei's internationalization experience illustrates our three propositions above, exhibits the ambitions of EE MNEs, and shows their particular internationalization path -- thereby enriching the current theoretical framework on internationalization.

THE CASE OF HUAWEI: A WOLF COMPETING WITH GLOBAL ELEPHANTS

Overview of Huawei

Founded with a US\$9 million bank loan and 30 employees in 1988, Huawei grows rapidly to revenues of US\$1.2 billion and 6000 employees in 1998.

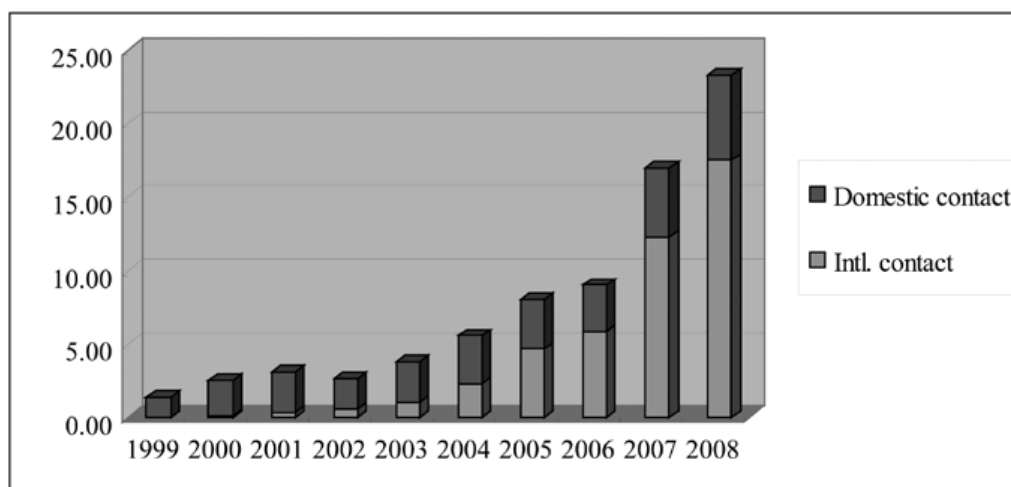


Table 2: The Internationalization Ratio of Huawei

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
International contract (in US\$ Billion)	0.05	0.12	0.33	0.55	1.05	2.28	4.66	5.86	12.24	17.48
Domestic contract (in US\$ Billion)	1.34	2.45	2.75	2.11	2.77	3.29	3.36	3.16	4.76	5.83
Total contract (in US\$ Billion)	1.39	2.57	3.07	2.66	3.82	5.57	8.02	9.01	17.00	23.30
Internationalization Ratio	3.48%	4.69%	10.59%	20.81%	27.44%	40.91%	58.11%	65%	72%	75%

Huawei starts to jump from a local player to a global competitor with a revenue of US\$17 billion in 2008 (see Figure 2 and Table 2). In 2008, 75% of Huawei's sales come from the overseas market. The sales in Europe, the United States, and Japan increases more than 150%. Since 2007, Huawei surpasses Nortel Networks and becomes the world's fifth largest telecom equipment manufacturer.

Figure 2 (p. 144): Fast Internationalization of Huawei (in US\$ Billion)

Huawei is a leader in providing next generation telecommunications networks and now serves 31 of the world's top 50 carriers, along with over one billion users worldwide. From its startup, Huawei reinvests no less than 10% of its sales revenue in R&D and 10% of the R&D budget in cutting-edge technologies and fundamental technologies. The company is committed to providing innovative and customized products, services, and solutions to create long-term value and growth potential for customers.

At the end of 2008, Huawei has over 87,502 employees, of whom 48% are dedicated to R&D. Huawei's global R&D centers are located in Bangalore (India); Moscow (Russia); Stockholm, (Sweden); the Silicon Valley, California (USA); and Dallas, Texas (USA), in addition to those in Beijing, Shanghai, Nanjing, Shenzhen, Hangzhou, and Chengdu in China.

Huawei's global market is divided into eight different zones that report directly to the Marketing Management Committee:

- China (Headquartered in Shenzhen)
- Latin America (Headquartered in Brasilia, Brazil)
- North America (Futurewei subsidiary, headquartered in Plano, Texas)

- Asia Pacific (Headquartered in Kuala Lumpur, Malaysia)
- Europe (Headquartered in London, England)
- Southern Africa (Headquartered in Johannesburg, South Africa)
- Middle East and North Africa (Headquartered in Cairo, Egypt)
- Commonwealth of Independent states (Headquartered in Moscow, Russia and includes the Central Asian Republics)
- East Pacific (Headquartered in Sydney, Australia and includes Australia, Hong Kong, Macao, Taiwan, Japan, and Korea)

A Huawei vice president heads each of Huawei's eight regional headquarters. The regional offices are organized by product lines, have technical support departments, and two departments in charge of client relations and business development.

Domestic Market to Overseas Market

Many Western reporters highlight Huawei's military background, puzzled by its eccentric, earnest company culture. Aside from the 14 years of service from its CEO Ren Zhengfei in China's People's Liberation Army, Huawei has no linkage with military and only receives a very small contract from China's military. However, in the early years of development, Huawei's culture was strongly influenced by its CEO's training in the military. Discipline, hard work, and purpose are the main drivers of Huawei's employees.

Compared with government-supported state-owned rivals, private-owned Huawei has no close linkages with its clients, all of which are state-owned communication carriers. Huawei develops essential competitive skills, similar to a wolf, realizing the crucial *natural selection* in the marketplace. It is widely reported that Huawei incorporates the wolf spirit as part of its indispensable corporate culture: a sensitive nose, aggressiveness, and persistence on attack.

The first trait is a sensitive nose for opportunities. Wolves always keep their eyes fixed on their prey, closely observing the movements of sheep and even the behavior of the shepherds. Once an opportunity emerges, wolves immediately mount an attack. In Huawei, this inquisitiveness is vital in tracing the development of new technology, formulating business strategies, studying price fluctuations, and surveying the movements of competitors. Starting as a PBX equity agent, Huawei heavily invests in R&D and is the second innovator on the C&C08 digital switch in 1993, both of which were in huge demand by the rapidly developing Chinese communication industry in the 1990s and dominated by foreign suppliers, such as Siemens and Alcatel. Based on excellent technology and low price on

equity, Huawei triumphs over foreign companies and ranks fourth in local switch suppliers in 1998 (all three leading suppliers are state-owned).

The second trait is aggressiveness and unyieldingness. When wolves attack a flock of sheep, they firmly bite into their prey and won't let them go easily. A wolf is not satisfied with getting enough food from the killing of one sheep but is determined to kill as many as possible in a short time. This aggressiveness describes precisely how Huawei gains six-fold growth from 1996 to 1998 and how Huawei develops the leading GSM mobile switch system. In 1999 Huawei is selected as the principal supplier for China Mobile's nationwide CAMEL Phase II compliant IN. This aggression makes Huawei the number one local supplier in the mobile communication equity market even before Nokia and Ericsson dominated.

The third trait is persistence. In competition, Huawei keeps a furious attack with its comparatively low-cost R&D, in other words, the cheaper intellectual resources from EE. Data from Siemens indicates that the annual average working hours of European research workers is only 1,300 to 1,400 hours per year, while Huawei's reaches 2,750 hours a year—twice as many as Europeans working in the same field. The average R&D personnel cost at European MNEs is US\$120,000 - 150,000 per annum. At Huawei, the cost is only US\$25,000 per annum. The input to output ratio of Huawei R&D work is ten times larger than its European counterparts. This explains Huawei's advantage.

Gaining 85% sales growth in 2000, Ren senses the incoming stagnating domestic market. If Huawei only focuses on this market, Ren believed that Huawei would experience "the chill winter". He boldly sells Avansys Power Co., Huawei's fast-growing subsidiary of telecom and data network power conversion products, to Emerson with 20 times the P/E in October 2001 and raises US\$750 million to initiate a large scale attack in the global market. Ren shares a stirring lecture for the oversea campaigners on January 18, 2001:

"In this era, an entrepreneur is awesome if he has the vision of global strategy; a nation is thriving and prosperous if it can feed the marrow of globalization; a company grow forever if it can build a global commercial ecosystem; a staff has a transcendent career if he treat every strange place as his familiar home."

Huawei's Pain in the U.S.; Happiness in EE and EU

Huawei begins to attack the North American market aggressively in 2001. Rather than targeting traditional telecommunications products, the company chooses to explore the burgeoning market of digital communi-

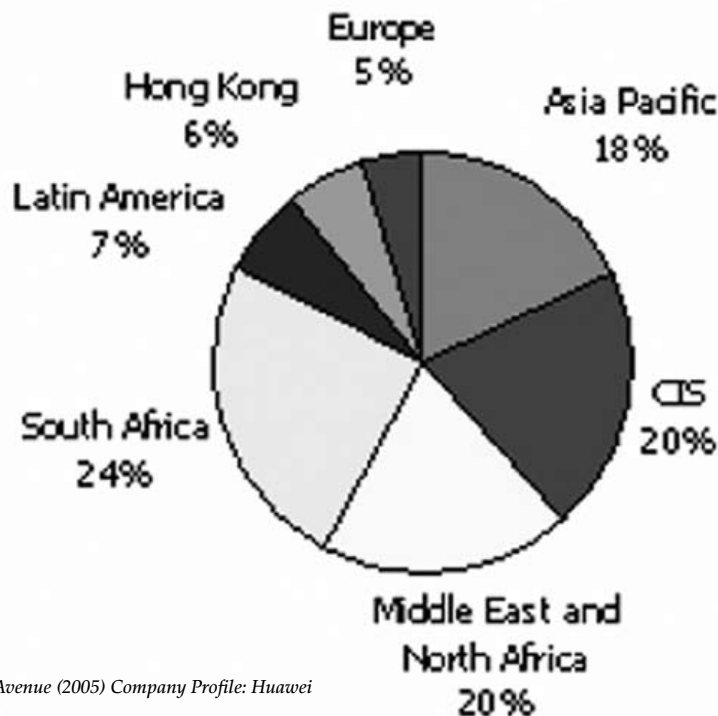
cations. It adopts a very aggressive marketing strategy. Huawei's products challenge Cisco directly with a 30% lower price. Huawei also airs an extremely hostile advertisement featuring Huawei products against the background of the Golden Gate Bridge in San Francisco, which happens to be the symbol of Cisco Systems Inc. The message line reads, "The only difference between us and them is price."

The competitors in the communication industry immediately recognize the high-quality performance of Huawei's routers. Cisco's first reaction is to discuss the possibility with Huawei that Cisco would give all of its low-end products as OEM orders to Huawei if Huawei would give up its R&D in high-end products and not build its brand in the US. Such requests are refused by Huawei straight away.

In June 2002, Cisco's CEO, John Chambers, visits Huawei's booth at the SuperComm shown in Atlanta, and later a counter-attack plan against Huawei is formulated. In January 2003, Cisco accuses Huawei of intellectual property rights (IPRs) infringement. A federal judge in East Texas is considering Cisco's motion for a preliminary injunction to prevent Huawei from selling many of its products in the U.S. market⁴.

⁴ Einhorn, B. 2003. Huawei vs. Cisco Just Got Nastier, *BusinessWeek*, June 3, 2003; Cisco: In Hot Pursuit of a Chinese Rival, *BusinessWeek*, May 19, 2003.

Figure 3: Huawei's International Sales Distributed by Region in 2004 (not including China)

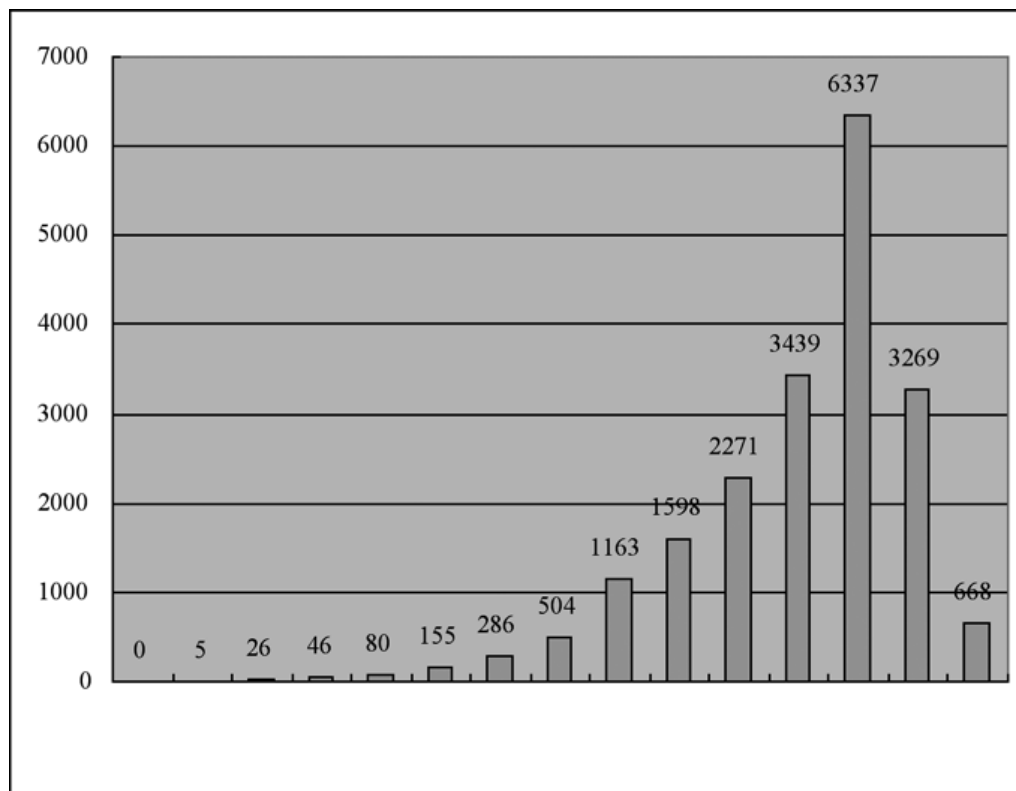


Source: MarketAvenue (2005) *Company Profile: Huawei*

Huawei needed a partner, a friendly American partner. It decides to give up its brand to 3Com in the overseas market (the joint venture called “3Com-Huawei” in English but “Huawei-3Com” in Chinese) and signs the sweeping JV agreement with the struggling networking company just one week after it had been sued by Cisco.

3Com helps to increase Huawei’s bargaining power in settling the lawsuit. 3Com CEO Claflin said, “If Cisco were to sue the JV, it’s 100% certain that we would countersue. It would be very different than just suing Huawei [which, unlike 3Com, has no U.S. patents with which to negotiate a settlement].” Cisco and Huawei finally reach an agreement on July 28, 2003. Cisco withdraws the lawsuit and both companies resolve all patent litigation, with each party paying for its own legal fees. Neither side reveals the terms. However, Huawei withdraws almost all of its products from the largest market in the world over the next several months.

Figure 4: Huawei’s Registered Patent Number in China



Source: the database of the State Intellectual Property Office of PRC (<http://search.sipo.gov.cn/sipo/zljs/>).
(The number covers all patents granted in invention, utility model, and design. Some application patents in 2007 and 2008 were still pending on the access day, November 29, 2008.)

Huawei decides to focus on emerging markets and Europe. The global de-regulation wave around the world helps Huawei win a lot of orders from EEs. Many hard-budgeted EE carriers are attracted by Huawei's low-cost, high-quality products and are apparently untroubled by allegations of IPRs problems. In 2003, Huawei's overseas sales soars to \$1 billion, double what they were the year before. Most of its revenue came from Asia Pacific, South Africa, Middle East, and North Africa in 2004 (see Figure 3). The smallest was for Eastern Europe, which together with Western Europe, the second smallest piece, accounted for 7% of the whole.

However, Huawei has a persistent attack in EU. It wins the first national network contract from France's second-largest fixed-line telecom carrier, LDCOM Networks. LDCOM already used Cisco's metro Ethernet switches and routers in its network. However, Huawei swiftly finishes a temporary project and its low price and quick response to the customer defeat Cisco. Huawei also targets BT, Britain's incumbent carrier from 2001. After a three-year attestation process, Huawei joins the "short list" of BT's 21st Century Network planning in 2004.

Since Huawei took huge pressure for allegedly IPR pilfering in Cisco's lawsuit, it scales up the application patents in the US Patent and Trademarks Office (USPTO). Huawei's registered patents show rapid growth since 2004 in recent years (Hu and Mathews 2008). For six consecutive years, Huawei is ranked first in the number of patent applications in China. At the end of 2007, Huawei has a total number of 26,880 patent applications.

According to the World Intellectual Property Organization (WIPO), Huawei becomes the largest patent applicant under the WIPO Patent Cooperation Treaty (PCT), with 1,737 applications published in 2008.

Linkage, Leverage, and Learning

After various failed attacks, Huawei begins to realize that it cannot win the global game as a lone wolf; instead it needs to modify its wolf spirit to teamwork. Huawei tones down its predatory attitude and begins to emphasize cooperation with established telecom equipment suppliers, hoping to obtain access to the international market through them. Since 1999, Huawei has established joint R&D labs with Texas Instruments, Motorola, IBM, Intel, Agere Systems, Sun Microsystems, Altera, Qualcomm, Infineon, and Microsoft. As of June 2005, Huawei Technologies has a total of ten joint research labs. Huawei now maintains in-depth cooperation with Motorola for wireless equipment, with Siemens for digital communications and TD-SCDMA, and with NEC for digital communications and mobile

terminals. In other areas, they still remain rivals. This paints a very complex picture of competition and cooperation.

While few of the ventures are directed towards the North American market, Huawei uses Huawei-3Com JV as a new route to enter international markets, especially those in developed regions. Even after it sold its JV's 49% ownership to 3Com with US\$882 in 2006, Huawei partners with private equity Bain capital to take over 3Com in 2007 but fails to pass through the national security reviews by the Committee on Foreign Investment in the United States (CFIUS) in 2008.

Huawei also jointly develops with Vodafone and supplies mobile phones to this largest mobile carrier in EU since 2006. Huawei and Vodafone make a closer strategic alliance in 2009, extending Huawei's service orders from Vodafone in Turkey, Spain, Greece, Hungary, and Romania. Huawei also builds strategic alliances with Intel in WiMax technology from 2005 and with the Google-backed Open Handset Alliance to launch an Android phone in February 2009.

Although Huawei has a low-cost advantage in R&D based on cheaper intellectual resources and engineers, as international business is playing an ever bigger role for Huawei, its costs have also increased. In global resource distribution, global service, materials and product parts purchasing, financing, marketing, and other areas, Huawei's advantages are starting to erode. For example, there are more urgent demands on the quality of products, academic qualifications of staff, quality of service, product delivery capacity, and so on. All these factors lead to increasing business costs. Additionally, Huawei's IPRs cost is actually higher than its Western counterparts. Also, its relatively lower R&D cost often leads to higher total cost of ownership⁵ since products out of the low-efficient R&D may have defects.

Since 1997, Huawei has realized this management challenge. IBM, Towers Perrin, the Hay Group, PricewaterhouseCoopers, and Fraunhofer-Gesellschaft have been acting as Huawei Technologies' consultants, respectively, on process transformation, employee stock option plan, human resource management, financial management, and quality control. Huawei learns management skills from these leading multinational consultancy firms to keep in line with the best practices in the industry.

5 Total cost of ownership (TCO) is a financial estimate designed to help consumers and enterprise managers assess direct and indirect costs related to the purchase of any capital investment.

The benchmark learning has borne sweet fruits: employee productivity (per capita sales) of Huawei in 1996 was only US\$73,300 even when the staff worked overtime every day, but this figure increases to US\$193,000 in 2005 and US\$266,280 in 2008.⁶ This success is achieved despite a decreasing amount of overtime work. Huawei builds up its capability in the world-class R&D management models, not relying on personal cleverness and diligence but on organizational integration in “speed, quality and low cost”.

Currently, Huawei has joined 83 International Standard Organizations, has taken up nearly 100 roles in these organizations, and has actively participated in international standard-setting. In 4G, LTE, SAE, NGN, IPTV, and other fields, Huawei has submitted a total of 3,072 proposals in 2007. Through these linkages, Huawei builds its global learning networks and brings dispersed knowledge together to fuel its innovation (Doz et al. 2001).

CASE ANALYSIS

Home Country Market: Nurture Capability

As shown in Proposition 1, Huawei develops its capabilities by concentrating on cutting costs, raising productivity, and ensuring a strong cash flow from its domestic market. The restructured Chinese telecommunications market and its strong growth from the 1990s nurture Huawei’s growing dynamics and capabilities. Lakshmi Mittal, the chairman of steel giant Mittal, said: “Some managers from emerging markets have had to develop certain abilities that are proving very valuable when they go to a first-world economy, where productivity is crucial.” In the internationalization process, low cost and high productivity help Huawei compete with global elephants of telecom equipment providers.

Domestic clusters support Huawei’s fast growth. Huawei and Zhongxing Telecommunication Equipment (ZTE)⁷ were founded in Shenzhen city in the 1980s. Shenzhen city has full-fledged structures of customers, inventors and innovators, entrepreneurs, and industrialists to support its high-tech industries annual growth at a staggering 45% from 1992 to 2006.⁸

6 Comparative data: Ericsson’s employee productivity per capita: US\$396,563 in 2007. Ericsson Year Report: http://www.ericsson.com/ericsson/investors/financial_reports/annual_reports/index.shtml

7 Another one of China’s leading telecommunications companies, listed global top 100 patent applicant in WIPO in 2008.

8 In 2006, Shenzhen’s high-tech production reached RMB 630 billion, topping China’s other major cities. The city’s investment in R&D is some 3.4% of its GDP, far higher than the national percentage of 1.4%.

Apart from the Shenzhen high-tech cluster, Huawei operates six domestic R&D centers in Beijing, Shanghai, Nanjing, Hangzhou, Xi'an, and Chendu. All of these domestic R&D centers work closely with some public research institutions such as the Research Institute of Telecommunications Transmission, the China Academy of Telecommunication Research, Xi'an Electronic Engineering Institute, and Beijing Design Institute, thus providing a glance of the importance of these public research institutions for Huawei's own technological development (Hu and Mathews 2008). Certainly, to reach other countries' markets, Huawei also leverages external technology through its six overseas R&D centers. China's fledgling software outsource companies show the same patterns (Niosi and Tschang 2009), which support Mathews' (2006) argument that firms pursuing asset-augmentation FDI strategies will locate R&D operations in knowledge-intensive countries so they can tap into resources and knowledge that would otherwise not be available at home. However, Huawei's domestic headquarters still serves as a backbone (similar to most of China's software outsourcing companies). Huawei invests \$517 million on a new R&D and manufacturing base in Shenzhen in 2007. Based on RBV analysis, most of Huawei's low-cost competitive advantage comes from its domestic root.

Huawei's domestic market also provides learning-by-doing experiments. As Bartlett and Ghoshal (2000) recommend in their benchmark strategy for EE MNEs, adapting and responding to DE MNEs' entry into home markets is the best training ground for EE MNEs in future head-to-head competition in foreign markets. Huawei sets its strategic partner, IBM, as its benchmark and learns internal cooperation, new product development, and supply channel capability. IBM laid down the foundation for Huawei's competitiveness.

In addition, the transformation from domestic focus to accelerated internationalization is not easy. Huawei's bold decision to divest Avansys in 2000 and its inside conflicts in 2001 also show the importance of strong global mindset (Bartlett and Ghoshal 2000; Levy, Beechler, Taylor, and Boyacigiller 2007). EE MNEs from the periphery need to clearly articulate their global perspective and not be burdened with existing commitments and attitudes born of domestic self-sufficiency (Mathews 2006).

Market Entry Sequence: Accumulate Capability

After successful growth in its domestic market, Huawei boldly tries to enter the American market first in 2001. However, it underestimates the DE's barriers, especially on IPRs in a high-institutional distance. China's low development of IPRs environment made Huawei misunderstand the rules, regulations, and restrictions in the American market. DE MNEs

have a first-mover advantage in IPRs, which grant them market power along the value chain and establish barriers to entry (Reitzig 2004). Cisco's lawsuit gives Huawei a great lesson. Although Huawei had to retreat from the American market in 2003 because of backfire from the lawsuit with Cisco, Huawei improves its performance in the IPRs and files 1,737 WIPO's Patent Cooperation Treaty (PCT) applications in 2008, topping the list of PCT applicants (No.37 in 2005; No.13 in 2006; No.4 in 2007). The accumulation of large portfolios of patents by Huawei clearly shows that it seeks to use these patents in cross-licensing bargains with established DE MNEs and to insulate itself against the effects of patent litigation or infringement judgments in DEs (Mowery 2009). Only after it accumulated enough patents did Huawei win its first American contract in 2007.

Although it retreated from the American market, Huawei has particular success selling its products in developing countries, especially in Asia Pacific, Africa, and the Middle East, which have a low distance from China (see Figure 3), then Huawei invades prosperous DE markets again. It isn't until Huawei gets British Telecom's contract on building a 21st-century network in 2004, a milestone in DE market, that Huawei speeds up its internationalization scales in DE (see its annual internationalization ratio in Table 2). It clearly shows that moving up EE MNEs' value curve in the geographic expansion takes care of all kinds of barriers in culture, technology, economy, and institution. Huawei's lessons suggest an optimized method of international expansion: first enter a foreign market a low distance from home country, and then adapt to markets at a high distance.

Based on the RBV framework, four dimension distances raise the costs of EE MNEs in foreign entry, but EE MNEs can accumulate capability through sequential entry from lower distance countries to higher distance countries. Benefitting its large market share in EEs and allowing the periphery to lead (Doz et al. 2001), Huawei moves up its value curve, especially in R&D capability.

Inward-Outward Linkages: Build Up Capability

DE MNEs are increasing their offshore R&D activities at a fast pace. Some are doing so through growth in strategic alliances with EE firms in R&D and related technology-development activities (Mowery 2009). Such "inward-linkage" also becomes EE MNEs' opportunity to move up the value curve and outward internationalization. After Cisco drops the lawsuit on Huawei, tellingly, CEO John T. Chambers later says that he would love to partner with Huawei.

As Proposition 3 predicts, Huawei builds many kinds of inward-outward linkages. From allying with 3Com to compete with Cisco, joint venturing with Symantec, partnering with Bain capital to bid an American company, teaming up with Google, and participating in international standard settings, Huawei shows increasing skills in accessing new markets, acquiring intangible assets such as brands and M&A experience, and experimenting with new business models.

Some outward linkages also extend Huawei's market extension. For example, Huawei's alliance with Vodafone and Spain Telefónica extend its market penetration in Spain, Greece, Hungary, Romania, and Latin America. Through weaving the alliances with these DE MNEs, Huawei can reach their global network. Extending the RBV framework, Huawei's success in outward internationalization illustrates how inward-outwork linkage can help EE MNEs extract rents and move up the value curve using alliance networks (Lavie 2006).

DISCUSSION

Contributions and Implications

Three primary contributions emerge from our study. First, this article offers a unique perspective for understanding EE MNEs' internationalization strategy. One of the most dramatic developments of the past decade has been the development of EE MNEs. Our case study on Huawei indicates that existing theories and frameworks are relevant in explaining the internationalization of EE MNEs. The prominent and unique patterns of internationalization of EE MNEs enrich and broaden our understanding of the eclectic paradigm (Buckley and Casson 1976), the Uppsala process model (Johanson and Vahlne 1977), and the international entrepreneurship theory (Oviatt and McDougall 1994). Particularly, we connect IB research and strategy through the RBV and show how EE MNEs nurture, accumulate, and build up capability in the internationalization process.

Second, this study advances our understanding of the role of internationalization in the catch-up race of EE MNEs. EE MNEs usually have weak technological capabilities or limited resources compared to DE MNEs. There is the fundamental theoretical question and debate of whether we can expect a systematic positive relationship between firms' internationalization processes and performance (Contractor 2007). Our case shows that Huawei, like many EE MNEs, experiences internationalization as a key means to achieve strategic learning, capability building, and company growth. Competing in the domestic market alone is not enough for EE MNEs to catch-up. Understanding Huawei's competitive sources from

global competition will also benefit our full appreciation on the potentials of EE MNEs.

Third, this study has taken one step forward in identifying some important strategy design variables, like value curve, global mindset, and inward and outward linkages, in making critical internationalization choices. We are also aware of some special external variables, like cluster, cultural distance, technological distance, economic distance, and institutional distance, which drive internationalization choices. Some effects of these variables in the EE MNE context are the same as in the DE MNE context, like global mindset (Bartlett and Ghoshal 2000; Levy et al. 2007), but others are different. IB and MNE literature are full of research on entry country choice and entry mode but few exist on market entry sequence as our Proposition 2 proposes. These variables and our three propositions in Figure 1 and Table 1 can be used as a practical tool to check or optimize EE MNEs internationalization strategy.

Limitations and Future Research Directions

Qualitative case research always raises the question of generalizability to a broader population of firms. Cases can be selected with bias toward “ideal” types, especially a single case that cannot provide contracts and varieties (Eisenhardt and Graebner 2007). In the future, we will collect and analyze more cases from different EEs to better understand why and how a phenomenon occurs in one setting and performs a completely different way in another setting.⁹ Such strategic comparison across cases will help confirm, disconfirm, or extend our three propositions (Ellinger, Watkins, and Marsick 2005). In addition, quantitative methods counteract the potential bias of individual judgment through more objective, systematic procedures. We can use mixed methods with quantitative data to further verify our findings.

Despite the limitations, we believe our propositions from this study may have important implications to practitioners and scholars. This study also initiates new insights on the often disputed first-mover or late-mover advantage (Lieberman and Montgomery 1998). Recently, debate is whether America’s competitiveness could be the next victim of the global financial crisis¹⁰ and

9 For example, Indian Bajaj Auto first targeted some EEs in 2004, like Indonesia, Brazil, and Nigeria, as key markets for exploration (support P2). The export business booms. Its largest oversea investment is a joint venture in Indonesia with a local partner and formed partner Japan Kawasaki (support P3). Its first three-wheeler, the RE-4S (CNG), is launched in Jakarta in August 2006; EBITDA margins on exports are higher than domestic operations. It shows that internationalization moves up Bajaj’s value curve (support P3). Today, the exports contribute 32% of volume in Q1FY09, compared with 26% in Q1FY08 (still supports P1: 68% sales come from its home market).

10 The Economist (2008) Innovation in America: A Gathering Storm? November 20, 2008; M. E. Porter (2008) Why America Needs an Economic Strategy? BusinessWeek, October 30, 2008.

whether the rising China, India, or BRICs become the new innovation engine. How Huawei competes with global giants (like Cisco, Ericsson, and Alcatel-Lucent) with disruptive technology is worth further inquiry.

CONCLUSION

As the first EE firm to catch the champion laureate in the world patent applicant WIPO list, Huawei deserves a thorough analysis by academics. Based on the case study of its eight-year accelerating internationalization process, we propose that (1) EE MNEs tend to nurture their capability in their domestic market as a base before internationalization; (2) they prefer to enter markets with less institutional barriers first to accumulate experience and overcome the liabilities of foreignness; and (3) they use inward and outward linkages to complement their strengths and offset their weaknesses in global market. The case of Huawei starkly demonstrates that “globalization” no longer means just new markets for DE MNEs but also tremendous opportunities for latecomer EE MNEs.

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