Reverse Technology Transfer as a Globalization Strategy for EMNE's

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Abstract

Recent years have witnessed a surge in the number of firms from emerging markets that have successfully globalized and become capable competitors in a variety of industries. In this paper the strategies and processes that a few of these successful Emerging Market Multinationals (EMNE's) have deployed are examined and compared. Firms from Brazil, Mexico, China, India, Taiwan, and South Korea in a variety of industries are included in this sample. Some common denominators are found in their strategies and processes that might serve as guidelines for other EMNE's. These lessons include capability development in the areas of product development and R&D, manufacturing efficiency, management development, financing, and strategic alliances and acquisitions. Cultural intelligence plays a key role in the internationalization process and is acquired by EMNE's through international collaborations, management training, and international experience. These EMNE's employ a process of reverse technology transfer to a much greater extent than the traditional MNE's from advanced countries (AMNE's), which has allowed for a rapid catch-up to the AMNE's in global competitiveness.

Keywords: emerging market multinational, globalization strategy, internationalization, technology transfer, capability development

Introduction

In the latter part of the 20th century a new phenomenon arose in the global economy, the advent of successful Multinational Enterprises (MNE's) headquartered in emerging market countries. First firms from South Korea, Taiwan, Hong Kong and Singapore became competitors to the MNE's from the developed countries to be followed by firms based in China, India, Brazil, Mexico and other developing countries. As this trend continues and intensifies many observers have noted that these Emerging Market Multinational Enterprises (EMNE's) are not pursuing the same strategies that MNE's from the developed countries (AMNE's for Advanced MNE's) followed but yet are achieving success in becoming capable global competitors. It is worthwhile to examine the strategies of these successful EMNE's to discern commonalities and what might be useful to other EMNE's attempting to follow in their footsteps. It also may be valuable for the MNE's from developed countries to understand the EMNE strategies so that they can respond competitively. In this paper the strategies of a few very successful EMNE's from Brazil, China, India, Taiwan, South Korea and Mexico are examined and related to the current theories of globalization.

There are several existing theories of the internationalization process for firms that emphasize different aspects of the process but are generally complementary. They usually do not distinguish between developed country and emerging market firms expecting that they would

follow more or less the same process of globalization. Let us briefly examine some of the major theories used to explain how and why firms globalize.

Internationalization Process Theory (IPT) views the internationalization process as incremental as the firm acquires international experience and gradually expands globally. Usually the initial expansion occurs in countries that are similar economically and culturally to the home country of the firm. Only after the firm has achieved success in such markets do they expand to less similar markets (Johanson and Vahlne, 1977 and 2009).

Internalization Theory (IT) emphasizes how the firm uses its unique experience and capabilities to expand abroad and then internalizes the knowledge gained from the global expansion to improve its capabilities to fuel further expansion (Buckley and Casson 1976). The MNE that results is a highly integrated global enterprise that generally attempts to maintain the same governance structure throughout its international operations and considers this homogeneity as a strategic advantage (Verbeke and Kano, 2015).

The OLI model (Organization, Location, Internalization) stresses possession of specific advantages such as market power due to brand names, technology, or production efficiency to allow a firm to internationalize. These capabilities are developed in the home market and then deployed globally to become a MNE. A unified approach to global expansion is followed and the experiences internalized to facilitate future growth (Dunning 1988 and 1998 and Rugman 2009).

The Resource Based View (RBV) says a firm's competitive advantage is derived from its unique blend of capabilities be it management, technology, production, marketing or other resources (Williamson 1985). The firm develops its capabilities primarily in its home market and then deploys them abroad. The internationalization then further develops and expands these capabilities via the globalization process. Later versions of this model emphasize the need to make these capabilities dynamic so that the firm can rapidly adjust to a changing global environment (Teece 2014).

The "Classic Theory" of the MNE is primarily economics-based drawing upon the work of Coase (1937) and Vernon (1979) to view firms as exploiting market imperfections to expand both domestically and globally (Buckley and Casson, 2009 and Narula and Verbeke, 2015). The firm will expand internationally when it has production advantages over local firms; this theory emphasizes cost advantages more than marketing strengths. These production advantages deal with the typical production function of capital and labor and may foster both horizontal and vertical expansion. Buckley, et al. (2007) employ the classical approach in analyzing outbound Chinese foreign direct investment (FDI) finding that foreign market size and growth, geographic and cultural distance, income levels, trade flows and exchange rates, and other factors determined where Chinese firms made FDI.

The Springboard theory of Luo and Tung (2007 and 2018) specifically addresses the internationalization process for EMNE's emphasizing how they can use international expansion as a means to acquire strategic resources that then can be used in the home market to strengthen their capabilities' there and fuel further international expansion. The international growth also

helps to overcome home country institutional constraints and lagged development compared to developed country MNE's.

The "munificence" theory of Estrin, Meyer, and Pelletier (2018) postulates that home country deficiencies of EMNE's relative to AMNE's shape the strategy of firms from developing countries. These deficiencies involve less access to resources, weaker institutional support, lack of international management experience and networks, and smaller markets in terms of purchasing power. This leads to a home country "liability of foreignness" for EMNE's as they venture abroad (Klossek, Linke, and Nippa, 2012) causing them to invest in developed economies with larger markets and fewer barriers to entry.

The extant theories of internationalization generally support the notion of EMNE's following the same pattern as AMNE's with a few tweaks to the theory. Lately with the success of many EMNE's and the evidence of modes of investment of EMNE's that appear to differ from those of AMNE's, some are beginning to wonder if the current paradigm of internationalization needs to be modified or even rejected for EMNE's (Cuervo-Cazurra and Ramamurti, 2014 and Hernandex and Guillen, 2018).

In this study we examine the internalization strategies of eleven successful MNE's from six emerging markets (China, India, Brazil, Mexico, Taiwan and South Korea) in a variety of industries. These case studies indicate that at least for these EMNE's the classic paradigm is deficient in explaining their success in globalization, and in fact they have developed a new approach that substantially differs from the existing theories. The key aspects of the EMNE's strategies of internationalization are identified and facilitating factors that make these new strategies effective are discussed. A new theory of globalization for EMNE's is proposed that focuses on reverse technology transfer (the ***boomerang model)*** and an ***Alliance vs. Colonization*** approach.

The contributions of this research are to add to the understanding of how some MNE's from developing countries have been able to rapidly build up their capabilities to become successful global competitors. In many cases this is a different path than has been followed by AMNE's. Understanding the strategies employed by these successful EMNE's may be instructive for other MNE's whether from emerging markets or developed countries. The study also contributes to the literature on technology transfer, absorptive capacity, and deployment. The process for EMNE's is much more of a two-way process with significant reverse technology transfer in comparison to AMNE's. The methods used may provide useful guidelines for MNE's from both developing and developed countries.

In the next section we will examine the reasons for the success in globalization of some well-known EMNE's.

Success Stories of EMNE's in Globalizing

Our sample of eleven successful MNE's from emerging markets includes the following companies along with their home country and the major industry they represent (many of these firms operate in multiple industries and the primary one examined in this study is listed below):

Firm	Country	Industry
Samsung	***South Korea***	***Electronics***
Hyundai	***South Korea***	***Automotive***
Haier	***China***	***Home appliances***
Lenovo	***China***	***Electronics***
Geely	***China***	***Automotive***
Tata	***India***	***Automotive***
Infosys	***India***	***Information technology***
Cemex	***Mexico***	***Construction and building materials***
3G Capital	***Brazil***	***Food products and fast food***
InBev	***Brazil***	***Brewing***
Foxconn	***Taiwan***	***Electronic contract manufacturing***

These eleven firms were selected because they are all well-known success stories which represent a range of different industries and countries. South Korea and Taiwan are now generally considered developed countries; but when the three firms in our sample from these countries began their path to globalization they were emerging markets. Of course the success of these firms contributed to their home countries becoming advanced economies. Other emerging markets are following a similar trajectory as the firms in this sample pursue strategies involving technology transfer back to the home country as will be explained below.

Different strategies have been followed by multinational firms from emerging markets to become global competitors, but there are some common approaches. These can be broken down into five broad categories:[1]

Acquisition of foreign brands and distribution channels

Establishment of foreign production facilities

Acquisition of foreign production facilities and technology

Vertical integration

[1] The information on these firms was compiled from a variety of sources: cases, textbooks, articles in magazines, and online.

Strategic technology transfer alliances

Many successful EMNE's followed more than one of these strategies. Next we examine the strategies followed by our sample of EMNE's.

Acquisition of foreign brands and distribution channels

Haier, Lenovo, Geely, Tata, Cemex, Foxconn, 3G Capital, and InBev have all followed the strategy of acquiring well-known, respected foreign brands and distribution channels to expand their sales to other countries.

Haier acquired the General Electric (GE) appliance business in 2015 and continues to use the GE name and distribution and service system. Haier previously had established a plant in the U.S. to make small appliances such as compact refrigerators, and the GE acquisition allowed them to now market a much broader selection of appliances as well as tap the GE distribution channels for Haier products. Haier was already a major player in China before the acquisition of the GE division and now can compete more broadly on the world stage with the GE brand.

Lenovo acquired the personal computer business of IBM in 2005 and the IBM server division in 2014. Lenovo, already the dominant domestic computer manufacturer in China, was able to expand to the U.S. and other countries, first under the IBM brand and subsequently replacing it with the Lenovo brand. The vast IBM distribution network around the world allowed Lenovo to quickly gain market access to many countries and established the firm as among the largest makers of servers and PC's in the world. Subsequently Lenovo acquired the Motorola Mobility division from Google in 2014 giving them a premium brand in the mobile phone industry and has become a major player in the smart phone market globally.

Geely is a more recent entrant into the global markets for more advanced products, autos in this case. Geely only had a small share of the automobile market in China, which was, and still is, dominated by foreign firms in joint ventures with Chinese firms. Lacking an alliance with a foreign partner, Geely recognized they needed more advanced technology as well as a well-respected brand name, to become a major player in the Chinese auto industry. This led to the acquisition of Volvo. Geely kept most of the Swedish management and design team at Volvo and continued to export Volvos to China from Sweden while building factories in China to manufacture Volvos there as well as a U.S. factory. Geely's access to Chinese capital has allowed rapid expansion that Volvo would not have been able to accomplish on its own or under its former owner Ford Motor Co. Geely has chosen to maintain Volvo as a distinct brand with its own design and management team that will allow Geely to expand abroad more rapidly than with its own brand. Geely recently also took a 9.7% stake in Daimler further potentially increasing its access to foreign technology. Additionally, it owns the majority stake in Lotus Cars in England.

Tata has long been producing cars in India but has recently ventured into the global luxury automotive industry with the acquisition of Jaguar/Land Rover. Tata has made cars in India for decades but did not have much of a global presence. The well-known Jaguar and Land Rover brands, along with their British design and manufacturing facilities, give Tata the means to expand into the global luxury section of the market. Tata's financial resources have allowed Jaguar and Land Rover to expand their range of models and manufacturing capacity and extend their share of the luxury auto market.

Cemex, the largest Mexican cement producer, has rapidly expanded abroad in the last three decades by leveraging their strong position in the Mexican construction industry and access to global capital to embark on a series of foreign acquisitions that have made it the number two cement company in the world (LaFarge Holcim is the largest). Its facilities are now found throughout the Americas, Europe, Africa and Asia. Cemex has used its advanced production and information technology to improve the efficiency of the foreign acquisitions further bolstering its strong global position in the industry.

Foxconn acquired Sharp Corporation of Japan in 2016 giving it a well-known brand which it can use to enter the consumer electronics industry. The extensive distribution network of Sharp in this industry will allow Foxconn to quickly build up a market presence. It has been anticipated for some time that Foxconn was planning to begin selling products itself rather than just manufacture for other firms, and the Sharp acquisition gives them an additional way to do so.

3G Capital and InBev, both from Brazil, have followed similar strategies of acquiring well-known foreign brands and then trying to cuts costs and expand marketing. 3G Capital has acquired Burger King, Heinz, Kraft Foods, and Tim Horton's in recent years while AmBev (the predecessor to InBev) acquired the Belgium brewer Interbrew in 2004 and Anheuser Busch in 2008. In 2016 InBev acquired SAB Miller making InBev the largest firm in the beer industry globally with more than 2000 brands including Stella Artois, Becks, Budweiser, Miller, and Corona. Both 3G and InBev have kept their foreign acquisitions separate from the parent, which operates as a holding company. In essence they act as private equity firms using substantial leverage to fund their acquisitions. They have brought in Brazilian managers in some cases to operate their acquisitions while maintaining their individual identities.

Establishment of foreign production facilities

A few of the firms in our sample established production facilities overseas as a way to penetrate foreign markets. They believed that they already possessed strong manufacturing prowess and could build market share for their own brands in the foreign countries. This group includes Samsung, Hyundai, Foxconn, Infosys, and Haier. Both Samsung and Hyundai had large market share in the electronics (Samsung) and automotive (Hyundai) industries at home and were major exporters of their products from South Korea. Their brands were already well-known in foreign markets, and they had reached a sufficient level of sales in countries like the U.S. to justify building their own manufacturing facilities. They believed they could transfer their production methods to the foreign countries and built factories there.

Hyundai established a factory in Turkey in 1997, India in 2000, and China in 2002. Currently it has production facilities in Taiwan, Vietnam, Venezuela, Iran and the Sudan as well. It now has two plants in the U.S producing Kia and Hyundai vehicles. Hyundai has also opened R&D centers in Europe, the U.S. and Japan. Samsung began its global expansion with a television assembly plant in Portugal and a plant in New York in 1984 and has a large semiconductor plant in Austin, Texas. Samsung has an R&D facility in San Jose, California and has been granted more U.S. patents than any other firm, U.S. or foreign. The company has also acquired a few small tech firms in the U.S. to boost its R&D capabilities.

Foxconn, which now produces 40% of the world's electronic products, has factories in Brazil, Mexico, Europe, Taiwan, as well as China. Some of these facilities were acquired from other firms. Foxconn recently announced plans to build a large LCD factory in Wisconsin, USA. These factories produce electronics such as mobile phones, PC's and servers,, notebooks and laptops, video game consoles, televisions, and many other products for Apple, Sony, Nokia, Nintendo, Amazon, Microsoft and others.

Infosys has established more than 100 development centers in the U.S., China, Australia, Japan, the Middle East, and Europe to support its Business Process Management (BPM) and consulting activities in the countries in which its IT services are offered. The nature of the BPM industry requires close consultation with the client to tailor the software and applications to its requirements. This global expansion has resulted in most of the company's revenue coming from outside India—62% from the U.S. and 23% from Europe in 2017. It has also acquired small IT firms in the U.S., Australia, Switzerland, Israel, and the U.K. to expand its range of software and consulting services.

Haier was not well-known in the U.S. when they built a factory in the U.S. to manufacture small refrigerators used in college dorm rooms and offices so they sold under other brands, often private labels. Once they had built up a stronger brand image they began selling more under their own brand and importing larger appliances from China. However, they remained a minor player in the U.S. market until they acquired the GE appliance business in 2015.

Acquisition of foreign production facilities and technology

Several of the successful EMNE's have followed the strategy of acquiring foreign production facilities and technology to become globally competitive. This strategy allows them to rapidly enter foreign markets by utilizing existing factories but also gives them access to production methods which they can transfer back home to improve the quality and efficiency there, thus becoming more competitive at home as well. In this category are the companies listed above who acquired foreign brands and distribution channels. They also acquired production facilities along with the brands. These are the firms Tata, Haier, Lenovo, Geely, Foxconn, Cemex, 3G Capital, and InBev.

The EMNE's in the automotive industry from China and India, Geely and Tata, were already manufacturing autos and exporting them when they made their acquisitions of Volvo and Jaguar/Land Rover respectively. Geely also had arrangements with other firms in developing countries to assemble their cars from knock-down kits shipped from China (Indonesia Sri Lanka,

Malaysia, Ukraine, and Russia). However, their factories were not state-of-the art plants. By the acquisition of the luxury brands they acquired the engineering and manufacturing talent to transform their factories at home, adopting lean production and improved quality control. This made them more competitive in their home markets building a stronger base for future global expansion. Geely was a minor player in the Chinese automotive industry with a reputation for poor quality and unimaginative products prior to the Volvo acquisition. Now it is considered one the premier car manufacturers in China due to the absorption of Volvo's design and manufacturing capabilities.

Lenovo and Haier were successful in their home markets before expanding abroad. Haier opened its own factory in the U.S. before acquiring the GE appliance business in 2016, but did not have the quality reputation to compete in the large appliance portion of the market. The GE acquisition gives Haier the brand name and the production capacity (GE's large appliance manufacturing complex in Louisville, Kentucky was acquired along with several other plants) to be a player in the more profitable parts of the appliance market and also acquire GE production technology to improve its own plants, both at home and abroad. Lenovo was a major producer of personal computers before the acquisition of IBM's PC business, but it had neither the scale nor the efficiency and quality to compete globally. The IBM acquisition provided both the factories to expand capacity and the production technology to be transferred to its Chinese plants. Foxconn has constructed its own foreign production facilities as well as acquiring factories from other MNE's to expand its global manufacturing footprint.

Cemex had developed efficient and technologically advanced production in Mexico using information technology to schedule deliveries of a very perishable product and to manage its cement plants before most competitors. Building upon a dominant position in its home market, it was able to generate the financial strength to begin acquiring foreign companies to which it could then apply its superior technology. This has resulted in Cemex becoming the second largest cement producer in the world.

The Brazilian companies, 3G Capital and InBev function more as holding companies and prefer to maintain the existing management of the firms that they acquire. At times they have sent in new managers but essentially keep operations as is, only trying to cut costs. In this sense they are a private equity firm and depend on acquiring existing production systems and trying to streamline them and expand their market presence. They are known for inserting a few key managers, usually Brazilian, to implement this strategy, but have generally not made extensive changes to production technology other than trying to cut costs.

Vertical Integration

Several of the EMNE's have followed a strategy of vertical integration at home to build manufacturing and supply chain capabilities and then expanded this approach abroad. The South Korean companies Samsung and Hyundai have done this, following the tradition of the chaebol common in Korea. They built up an extensive network of firms, all affiliated with the chaebol, to provide a range of products as well as services to other group companies. This strategy cannot be fully transferred abroad but does provide some valuable support for foreign operations

through the affiliated companies. Foxconn started its contract manufacturing operations in Taiwan and then relocated most of these to China to take advantage of the lower wages available there. Foxconn quickly developed supply chains in China to support their factories which primarily are in the electronics industry. By manufacturing complex electronic products such as the IPhone and Macintosh computer and video game consoles for Sony and Microsoft, Foxconn was able to not only master state of the art production processes but also learned something about product design. Using these capabilities it has recently begun to develop and manufacture products under its own or acquired brands. Lenovo as well has taken in-house the development of many of its key components to reduce dependence on suppliers and increase speed to market.

Strategic technology transfer alliances

Strategic alliances and joint ventures (JV) have been extensively used by the firms in our sample to bolster their technology capabilities. Samsung had a joint venture with Sony to make LCD displays in South Korea, which it now wholly owns, as well as JV's with Toshiba to make optical disks, Sumitomo and Dow in chemicals, and Corning for LCD glass production. Geely established a JV with Liebherr in 1984 to acquire both product and process technology from the German firm. Technological alliances may be used such as Foxconn working with Apple and Lenovo with IBM. They seek the capabilities of the firms they have alliances with to complement rather than replace their own self-grown ones. This may be in the areas of branding, marketing, production and information technology. It is much more a two way transfer of knowledge than the more traditional one-sided approach of MNE's from developed countries where most of the technology transfer is from the home country to the foreign one.

In the strategies of the EMNE's there is an underlying theme of the goal of becoming global competitors through the acquisition of management and technology from abroad to supplement already competitive positions in the home market. The capabilities that they seek are of both the hard and soft technology skills. The management skills such as production process and marketing knowledge are generally of the tacit or softer types of capabilities sought. The product design and manufacturing facilities are of the hard technology sort. Some of these EMNE's may feel their home-grown capabilities are not world class, and the best way to acquire them quickly is to do global acquisitions and/or expand their own operations abroad. These new capabilities can then be transferred back to their home countries further strengthening their global competitiveness. In some cases the EMNE's may believe their own capabilities are superior to those of the foreign acquisitions, especially in the manufacturing area. Haier, Cemex, Foxconn, Hyundai, Samsung, and Lenovo fall into this category. In this case they can transfer their process technology to their foreign operations. In both situations there is two way technology transfer which helps to make these EMNE's stronger global competitors.

Facilitating Factors

To make these strategies effective, some factors that have facilitated success for our sample of EMNE's can be discerned. These involve certain attributes including the following:

Investment in R&D

Management development

Capital availability

Low manufacturing costs

Large domestic economies

Most of these EMNE's have made extensive investment in R&D, both of the product and process variety. Some of them have done much of the R&D in their home countries while others have done it both at home and in their foreign operations. In the former category are firms such as Infosys, Foxconn, Cemex, Samsung, and Hyundai while the latter category includes Geely, Lenovo, Haier, and Tata. The difference results from whether the technology to be developed is process or product related and whether the capabilities to develop it reside primarily at home or abroad. For example Infosys had a large pool of low cost, talented engineers in India so it made sense for them to do most of their R&D at home. Samsung and Hyundai also had abundant engineering talent in South Korea to develop both its product and process technologies which then could be transferred abroad. On the other hand Geely and Tata, lacking foreign partners in the automotive industry in their home countries, felt a need to acquire foreign firms to improve their R&D capabilities. This was achieved through their acquisitions of Volvo and Jaguar/Land Rover, respectively. Both Geely and Tata have chosen to keep much of their R&D abroad in these subsidiaries. For process technologies such as manufacturing or information technology, some firms have developed these capabilities at home (e.g. Foxconn, Infosys, Lenovo, Haier, Cemex, Samsung, and Hyundai) and then transferred them to their foreign affiliates.

Management development has been another key element in the success of EMNE's. There are several means that have been used to develop a cadre of world-class managers. A few of these firms have their own in-house management development activities. For example Hyundai has dedicated staff and facilities in South Korea for management training, often importing foreign experts to conduct courses for their managers throughout their careers. Infosys has a large training center in India to develop managers as well as technical staff. Another approach is to hire managers and engineers either educated or trained in a developed country. Most of the firms in our sample have used this approach to some extent. Some send managers to developed countries to acquire an MBA or an engineering graduate degree. Many also rotate both local and home managers through their international and domestic operations to acquire global experience and transfer that knowledge to other managers in the firm. Another approach is to try to entice successful foreign managers of the nationality of the EMNE to return to their home country. Often the lure is a job with greater responsibility at home than they have with a foreign firm as well as more opportunity for advancement.

Capital availability is of course essential for a firm to acquire other firms, build factories abroad, and conduct R&D. The EMNE's first had to achieve success at home to acquire the capital and the access to capital markets to fund foreign expansion. This meant achieving market success in their home countries and building strong balance sheets that would provide the capital needed.

Many of these firms, especially those from South Korea, China, and India, had protected local markets allowing themto achieve market dominance and scale. Once global expansion began they typically would initiate relations with large global banks giving them access to the global capital markets to raise debt and equity capital. Again there was a feedback effect as their success abroad made capital-raising in their home countries easier.

Low manufacturing costs often gave some of these firms an initial competitive advantage given their country of origin and their emphasis on efficient production processes. They could then achieve scale in their home country allowing them to further lower costs and compete abroad. The low cost structure also allowed them to accumulate substantial profits that could be used for R&D and foreign expansion. As labor and other costs rose at home, these EMNE's were now well positioned to move to higher value-added products as they had the resources to do R&D and acquire technology from abroad through acquisitions. Then product and process technology could be deployed throughout the firm enhancing competitiveness in both the foreign and home markets.

A large domestic economy is characteristic of most the firms in our sample. The smaller economies of South Korea and Taiwan do not have as large a population as India, China, Mexico, and Brazil but were more developed with high GDP per capita allowing for sales of more advanced products with higher profit margins. Scale is important as it allowed them to achieve a high level of sales in their home countries and thus economies of scale and scope. Once they had sufficient size and capital resources from their large home markets they could then venture abroad. Achieving success in the home market was of course facilitated by the protectionist policies of some of these countries restraining foreign competition.

Commonalities in Strategies

In examining the strategies pursued by our sample of EMNE's we can discern some common features. In all cases these firms started the process by building capabilities in their home markets. Importantly, all of these firms are from countries with large enough domestic economies to support a substantial home market in which these firms could build economies of scale and scope. In our sample most of the firms had markets protected from foreign competition allowing them to achieve the scale needed. This allowed them to accumulate the experience and the capital necessary to begin foreign expansion. They became large enough to have a cadre of capable managers who had learned to design products, market them, and operate efficient production facilities. They now possessed the human resources to begin foreign expansion. However, they also needed substantial capital to establish foreign production facilities and/or acquire foreign firms. The success they had achieved in their home markets provided them with this capital, both from the retained earnings accumulated as well as the access to the capital markets that financial success provides. They were able to obtain loans and issue securities as needed to fund their global expansion. In this sense they are similar to MNE's from developed countries although the paths taken differ for some EMNE's from the AMNE's. The AMNE's generally did not seek to acquire foreign brands as they already possessed strong,

well-known brands. If they acquired foreign firms they would usually try to replace the local brands acquired with their global brands. The EMNE's are different as they have made many acquisitions primarily to secure a global brand allowing rapid penetration into the new markets rather than trying to build up their unknown home brands.

Another substantial difference between the AMNE's and the EMNE's is the pursuit of technology. Most AMNE's already possessed advanced product design and production process technology and either deployed that through their own greenfield facilities abroad or incorporated it into foreign acquisitions. The EMNE's are different in that they seek not only to acquire foreign brands but also the product and process technologies in which they lag (Kedia et al 2013 and Li et al 2012). This allows them to leapfrog into global markets without having to go through the slow process of building their own capabilities. A few of the EMNE's were able to develop advanced capabilities at home (Samsung and Hyundai and Infosys) but still viewed foreign expansion as a way to hone these capabilities and develop a cadre of international managers.

Technology transfer is a key differentiator between the AMNE's and the EMNE's. For most AMNE's technology transfer is primarily one-way, from the MNE to the foreign subsidiaries. Very little product and process technology is transferred back to the parent company, and what is transferred is primarily marketing related. The EMNE's are different with a dominant strategic goal to acquire foreign technology, employ it abroad to develop a competitive position in those markets ***and*** transfer it back to the home country to strengthen competitiveness there (Herrigel, et al 2013, Hitt, et al 1997). Since these EMNE's were already very competitive in their home markets; the absorption of the foreign technology made them even stronger at home. The successful foreign operations complemented an augmented home market further enhancing their global competitiveness. Increased managerial competence, greater economies of scale and scope, and larger financial resource availability internally and through the capital markets, made these EMNE's successful competitors to the AMNE's. The rapidly built their capabilities and developed Firm Specific Advantages (FSA's) that allowed them to become mature multinationals faster than traditional MNE's (Ramamurti and Hillemann 2018).

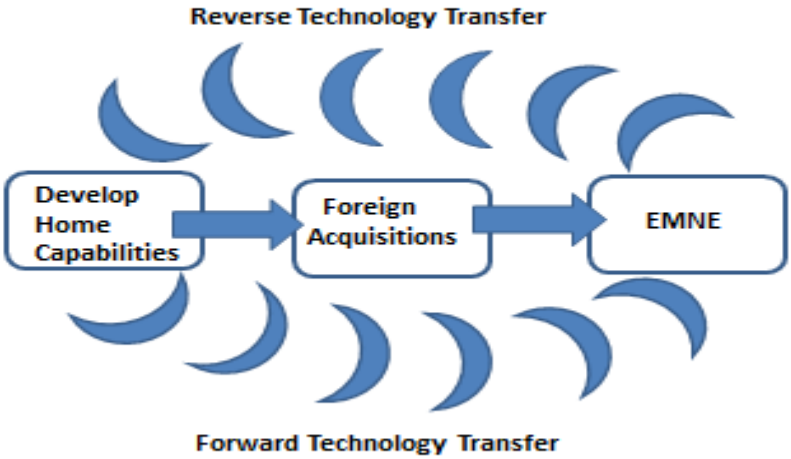
The technology transfer differences between AMNE's and EMNE's also extend to the nature of the technology transferred. AMNE's tend to transfer hard technology; that is product designs and production equipment to their foreign subsidiaries with some soft technology (i.e. implicit or tacit knowledge) in the form of organizational processes and procedures. The transfer is primarily one-directional—from the parent to the subsidiary. There is very little reverse technology transfer of either the hard or soft type. In contrast EMNE's transfer less technology of either type from the parent to the subsidiary and instead mainly do reverse technology transfer. The soft/implicit technology is emphasized, especially product design and R&D methods as well as production and marketing skills (Buckley et al 2016). The EMNE's acquisition of the foreign subsidiaries' hard and soft technology gives them a greater cultural intelligence that can be applied globally throughout the network of operations.

EMNE's tend to let local managers run operations more than the AMNE's, perhaps because they venture abroad to acquire technology, not to transfer their home-grown technology. Wang, et al

(2014) found that EMNE's tend to delegate more authority to their foreign subsidiaries and use foreign managers as part of the senior management team to a greater extent than AMNE's, and this sample of EMNE's confirms this. For example, Lenovo has three headquarters; in Beijing, Morrisville, NC (USA) , and Singapore, and transfers top executives among all three as well as a R&D facility in Japan. As a result Lenovo has a more global outlook than most AMNE's. Two CE0's of Lenovo have been non-Chinese and the company has adopted English as its official language. The current CEO of Lenovo, Yang Yuanqing, even moved his family to the U.S. to learn English and the American culture. This "light-touch" approach contributes to the reverse technology transfer process by absorption of the foreign technology rather than suppression of it. The transfer and absorption of the tacit or soft technology is a particular beneficiary of this approach. It also increases the cultural intelligence of the EMNE increasing its global capabilities.

This might be called the ***boomerang model of technology deployment*** reflecting the two-way technology transfer employed by the EMNE's. This is illustrated in Figure 1 below. The EMNE builds home capabilities first before acquiring foreign technology (brands, R&D, product and process technology) and then combine that technology along with the distribution channels and production capacity acquired abroad to become an EMNE. The process of internationalization throughout involves significant technology transfer both forward from the emerging market country to the acquired foreign assets and in reverse back from the foreign operations to the home base. This contrasts with traditional MNE's from the developed countries which is much more a one-way, forward technology transfer from the home country to the foreign operations with much less reverse transfer. For the successful EMNE's this is an ongoing process with the forward and backward technology transfer and absorption resulting in a cycle of continuous capability enhancement and deployment.

The Boomerang Model of Technology Deployment



Emerging Market MNE (EMNE)
Figure 1

The absorption of the product design and production process technologies acquired through foreign acquisitions and operations is used to strengthen the home market capabilities of the EMNE to a much greater extent than is common with AMNE's. Absorptive capacity and technological capacity determine the extent to which EMNE's can benefit from the reverse technology transfer (Li et al 2010 and Smith 2014). The knowledge acquired abroad may elicit innovation at home by providing new insights that allow the foreign and local knowledge to be combined in novel ways (Corredota and McDermott 2014). Several studies have shown that firms with more diversified knowledge bases invest more in R&D, file more patent applications, and have more breakthrough innovations (Garcia-Vega 2006, Quintana-Garcia and Benavides-Velasco 2008, and Srivastava and Gnyawali 2011). The boomerang technology transfer and absorption process employed by the EMNE's has allowed them to quickly become successful in international markets, including the most advanced countries. In fact this may be the "Achilles' Heel" of the AMNE's as their reluctance to transfer technology acquired abroad back to the parent, and more importantly, absorb it into their global operations, gives the EMNE's a decided advantage in the global marketplace. The knowledge transfer from the developed to the developing countries by AMNE's may result in the creation of new competitors. This has been an issue in China where joint ventures with a local firm are required in many industries, and the local firm acquires technology from the AMNE allowing it to become a competitor. In fact it is a stated policy objective of the Chinese government to acquire foreign technology. Also there may be significant spillover effects to other local firms, further weakening the AMNE's competitiveness (Jiang, et al 2018).

In summarizing the overall strategy differences between EMNE's and AMNE's one could perhaps describe the globalization strategy of most AMNE's as C***olonization*** versus the ***Alliance*** strategy of our sample of EMNE's. This difference in strategy is primarily a result of the approach to technology transfer employed by the AMNE's and the EMNE's. The MNE's from the advanced countries typically follow a one-way process of pushing their technologies (both hard and soft) developed at home to their foreign subsidiaries in effect colonizing them. The EMNE's, in contrast, emphasize a bidirectional approach with technology flowing both to and from the foreign subsidiaries. The reverse technology transfer to the home base of the EMNE allows them to integrate the knowledge acquired abroad into their worldwide network of operations creating a global alliance. The tacit or soft technologies transferred and absorbed are particularly important in the rapid capability building of the EMNE's.

Discussion

The eleven firms examined in this research were selected to represent a wide range of counties and industries. They have all been very successful in globalizing their operations, and some commonality in strategies has been found along with factors that have contributed to these strategies being effective. Therefore they may provide some worthwhile examples for other firms, both in developing and developed countries.

Relating these findings to the extant theories of internationalization we find support for some of these theories but not for others. Internationalization Process Theory (IPT) is supported in that the EMNE's begin by building capabilities at home and then expand abroad. However, the expansion abroad of EMNE's is often not based on the same factors that fueled success at home (Hashai and Buckley 2014). They synergistically incorporated acquired foreign technology and capabilities into new FSA's that allowed them to mature more quickly than traditional MNE's (Ramamurti and Hillemann). Nor do EMNE's tend to expand incrementally to similar countries, instead often making leaps into developed countries with large scale acquisitions. Likewise, Internalization Theory is supported by the EMNE's incorporating foreign knowledge gained into global operations, but it is much more of a two-way transfer for EMNE's than for most AMNE's. Nor do EMNE's try to impose a homogeneous organizational culture on their global operations tending to allow local managers to have extensive autonomy. OLI Theory is not supported as the global capabilities that lead to success for the EMNE's are often acquired abroad rather than developed at home. Similarly the Resource Based View (RBV) and Classic Theory are not supported by our sample as both theories suggest that the global competitiveness is primarily developed in the home country of the MNE rather than acquired abroad. The Munificence Theory that places more emphasis on home and host countries advantages and disadvantages provides some explanation of why EMNE's follow a different strategy to globalize. Specifically, the lack by most firms in emerging markets of brand names and distribution networks as well as international management experience and networks causes them to seek these capabilities through foreign acquisitions in many cases. The most appropriate theory to explain our results is the Springboard Theory that postulates that capabilities developed abroad are transferred back to the home country of the EMNE making it more competitive at home as well. Our results suggest that the successful EMNE's go a step further to continuously absorb, refine, and deploy the combined foreign and home technologies to enhance their global competitiveness. This ongoing process occurs through the reverse technology transfer representing the Boomerang effect. The EMNE's are thus transformed by their internationalization to a much greater extent than most AMNE's.

Other research has suggested that EMNE's differ significantly from AMNE's in their approach to internationalization (Guillen & Garcia-Canal, 2009 and Kale & Singh, 2017). Our case studies support many of the distinctions that they found. For example EMNE's tend to expand abroad at a more rapid pace and do not attempt to integrate organizationally as fully their foreign acquisitions. The EMNE's give their foreign subsidiaries more autonomy and use more strategic alliances and acquisitions than AMNE's as well.

Since this research provides only limited support for the traditional theories of globalization developed based on the experiences of firms from developed countries, and in some cases is contradictory to it, it would seem a new theory of internationalization needs to be developed for EMNE's. The model described in this paper is a start in the direction of new theory building. Expanding upon the Springboard Theory of Luo and Tang (2007 and 2018), the success of the eleven firms in the sample suggests that reverse technology transfer and deployment throughout the EMNE is a very significant factor. In contrast to the approach employed by most AMNE's where the home country technology and brands are pushed out to the foreign operations,

EMNE's are more likely to acquire foreign technology and pull it back to the home country. This not only allows the EMNE to become more successful in its country of origin but also to incorporate the acquired technology and knowledge throughout its overseas operations. This approach could provide an important competitive advantage to EMNE's in their global competitive struggle with AMNE's who in general are much slower to develop and deploy technology and knowledge from their foreign subsidiaries throughout their worldwide operations. This could be the "Achilles' Heel" of the AMNE's that gives the EMNE's a competitive advantage. As technology development becomes more widely dispersed around the globe, the ability to acquire and rapidly deploy both the hard and soft/implicit types of technology throughout a firm's global network could be an increasingly significant factor in global competition. The ***Alliance*** approach used by the EMNE's in this sample would seem to foster this process more than the ***Colonization*** approach typically followed by AMNE's.

The fact that these conclusions are based on only a few case studies may lead one to question how generalizable they are to other firms and other industries in emerging markets. Certainly no single strategy is appropriate for all firms be they from developed or developing countries. However, some useful patterns and practices can be noted from case studies that can be adapted for use by other firms. The firms in our sample are from large emerging markets, have achieved success in their home countries, and are well-capitalized. Obviously not all firms in developing countries have these advantages and cannot pursue similar strategies. But given the rapid growth of many emerging markets, and consequently firms based in those markets, there are a significant number of potential EMNE's that could apply some of the lessons from these success stories in their own path to globalization. A key determinant of success in globalization is absorptive capacity of the knowledge acquired abroad (Luo and Zhang, 2016). The firms in our sample have been successful in this aspect but not all firms will be as capable. There may also be some lessons for MNE's from developed countries as to how they may improve their competitiveness by being more open to foreign technology and practices and be more willing to deploy them throughout their global operations.

Conclusions

In examining the stories of eleven very successful Multinational Enterprises from emerging market countries (EMNE's), we find that their path to globalization is different in significant ways from that followed by MNE's from the developed countries (AMNE's). The strategy followed by the AMNE's might be described as a ***Colonization*** strategy while the strategy pursued by our sample of EMNE's could be called an ***Alliance*** strategy. One key difference is the manner in which EMNE's make Foreign Direct Investment (FDI). The AMNE's typically expand abroad by either building new facilities or by acquiring existing ones and transferring their products and process technology to the foreign site. In contrast EMNE's often acquire an existing firm in the foreign country to secure their brands, R&D capabilities, production capacity, and distribution channels while maintaining the existing product and process methods of the foreign acquisition. The type and direction of technology transfer is a key differentiator between EMNE's and AMNE's. The MNE's from developed countries typically follow a one

way type of transfer—from the developed country to the developing country.. The technology transfer for the EMNE's is more likely to be in the other direction—from developed country to the emerging market home of the EMNE. This in fact is often the primary strategic goal of the EMNE; to catch up quickly by acquiring well-known international brands and technology. The EMNE's then purposely use the technology acquired, both hard and soft, to transform the home country firm into a true global competitor—the ***Boomerang Model of Technology Deployment***. This model has proven highly successful for the firms in our sample and may serve as a prototype for not only other companies in emerging markets wishing to be global competitors, but also for AMNE's who may be overlooking the value of technology transfer from their international operations to their home base. They might strengthen their global competitiveness by utilizing this reverse technology transfer. Much of the benefit of this may lie in the soft technology aspects of cultural intelligence, management development, and a more global perspective.

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