Mexican Multinationals: Insights from CEMEX

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Donald Lessard and Rafael Lucea

Since Vernon's seminal work (Vernon 1966; Vernon 1971), international firm expansion has been predominantly portrayed as a phenomenon led by firms located in economically and technologically developed countries in search for new markets, natural resources, knowledge leverage, and/or risk diversification. While venturing abroad was not devoid of obstacles (Hymer 1960; Zaheer 1995; Zaheer and Mosakowski 1997), the general view has been that developed country multinationals (DMNEs) were able to overcome these hurdles as a result of possessing better technologies, superior organizational processes, more financial power, or sounder home country institutions than their host country counterparts.

The emergence of multinational firms from emerging economies (EMNEs) challenges classic theories of the international firm that attempt to explain *why* multinational enterprises actually exist. In response to this puzzle, a number of studies, including those in this book, have pointed at a combination of environmental and organizational factors that help understand why EMNCs might enjoy a competitive advantage over DMNEs even when competing with these firms in developed markets – labeled "up-market FDI" by Ramamurti and Singh (2008, Chapter 1, Figure 1.1). Nevertheless, most of these competitive advantages appear to be temporary in nature and only provide plausible explanations as to how these EMNEs are able to take their first steps into the international competitive arena. However, they are significantly silent when it comes to explaining if and how they can sustain their competitive edge. And, yet, a small but growing number of EMNEs has been able to not only sustain their initial competitive position vis-à-vis DMNEs but significantly improve it over time. *How* this has happened and what it implies for current theories of international business is the subject of this chapter.

In this essay we propose a co-evolutionary model of international firm expansion and learning that explains why EMNEs are able to achieve and sustain their global competitive position even in the face of limited or waning home country-specific advantages. Our model posits that the idiosyncratic institutional and competitive conditions faced by emerging market firms strongly influence the shape and nature of the initial capability-set developed by these organizations. Under certain conditions, these capabilities may result in a source of international competitive advantage, making geographic expansion into more developed countries a possibility. Namely, they need to pass what we call the RATs Test (Relevance-Appropriability-Transferability). That is, their capabilities need to be *relevant* to customers in the foreign market, they need to be *transferable* internationally, and the rents they generate need to be *appropriable* by the firm.

Once these firms start to operate in more developed countries, EMNEs will need to continue to develop new locally relevant capabilities if they are to maintain their competitiveness in these markets. If and to the extent that these new capabilities are integrated with those forming the initial core set, the EMNE may find itself in a better position than other firms to further their international expansion. Crucial to this model are four elements. First, the recognition that idiosyncratic local conditions in emerging markets may constitute initial sources of international competitive advantage (Narayanan and Fahey 2005). Second, and contrary to classic theories of international business, we emphasize that the development of new capabilities that are crucial for the sustainability of the EMNE may derive from operating in *foreign* markets and not only from long lasting home-country specific advantages. Third, that both sets of firm capabilities, the ones derived from being born in an emerging market environment and the ones derived from operating in developed economies, need to be continuously evaluated, adapted, integrated, and diffused throughout the organization. It will be the exploitation of this continuous renewal capability that will make it possible for EMNEs to sustain and improve their competitive standing in the global arena. Finally, we point out that strong imprinting effects and some inherent EMNE characteristics, ranging from their late entrant status to idiosyncratic governance forms, will continue to differentiate the bases on which EMNEs and DMNEs compete for a long time.

While the main thrust of this essay is to propose an extension to the current body of theories concerned with the existence of the MNE, we will draw strongly on the corporate story of CEMEX, the Mexican cement, concrete and aggregates company, to illustrate our perspective. CEMEX is a prototypical "global consolidator" in Ramamurti and Singh's typology (2008, Chapter 1, Table 4), expanding by acquisition and competing on operational excellence in a mature industry in both emerging and developed economies. CEMEX is a "middle out" MNE in two senses of the word – it has expanded both up-market, horizontally, and down-market from a middle country in terms of income levels, technological development, and institutional development, and much of its sustained competiveness lies with middle management processes, characterized as "middle out" by Nonaka (1998),

We do not claim that the contextual and organizational circumstances that this firm encountered are fully representative of those faced by other potential EMNEs, or that the specific responses it undertook are an example to follow. Indeed, the challenges faced by CEMEX in the late 1980s and early 1990s are unlikely to be faced today by any other company in Mexico or elsewhere, and, as we will see, this firm's history has not been devoid of setbacks. However, we believe that the nature of the institutional, competitive, technological and organizational challenges that CEMEX faced and the outcomes resulting from its actions will help give texture to our arguments. Further, we believe that the learning organization that CEMEX has become is a relevant example for other MNEs from both developing countries and advanced economies.

The rest of this chapter is organized as follows. First, we succinctly contrast classic theories of the multinational, that justify MNEs expanding "down-market" -- from developed to developing markets, with more recent theories that explain why the reverse

phenomenon, expanding "up-market" from developing to developed countries, can occur. We highlight that currently accepted EMNE sources of international competitive advantage are temporary at best and that a theory that explains their sustainability is wanting. We continue by offering an overview of the internationalization story of CEMEX that helps us present the main elements of our proposed framework. A somewhat more formal description of the model follows.

I – Why do MNEs (and EMNEs) exist?

Two questions have preoccupied international business scholars since the beginnings of the field: 'what are the benefits for local firms to go international?' and 'what makes it possible for MNEs to exist?'

On the first question, scholars have developed a more or less consensual categorization of the benefits that domestic firms reap by venturing beyond the borders of their countries of origin. These benefits, summarized by Dunning (1998), include access to new markets, and new pools of scarce resources, the possibility to more efficiently exploit the firm's tangible and intangible assets, and the acquisition of strategic assets. Later, financially minded academics (Agmon and Lessard 1981; Lessard 1982) pointed out that by operating in multiple countries firms could significantly reduce the impact of economic, financial, operational, and political risk relative to the diversification benefits available to purely financial investors.

Expanding internationally, however, comes at a cost. Foreign firms are, at least initially, less familiar with the peculiarities of the new environment and face higher coordination costs in operating across greater geographic, institutional and cultural distances (Buckley and Casson 1976; Dunning 1977; Johanson and Vahlne 1977; Caves 1982; Zaheer 1995) than their domestic counterparts. As a result, a firm's foreign subsidiary needs to enjoy some particular advantage over its indigenous competitors to successfully compete against them. Theorizing and empirically testing the sources of these advantages has been one of the core themes in the field of international management (IM) from its inception. IB scholars have emphasized multiple sources of international competitive advantage that these can be categorized in two big groups: those that are common to all firms located in a given country and those that are specific to a particular firm as a result of its history and asset (in broad terms) configuration. The relevance of these sources of competitive advantage at any given point in time strongly depends on the predominant social, economic, political, and technological conditions in the global arena. Hence, the international macro context, country level factors and firm-specific characteristics have to be taken into consideration to explain why some firms, and not others, are able to operate and thrive in foreign countries.

In the remaining part of this section we produce a highly stylized characterization of these three dimensions at two different points in time and the main theories of the multinational that emerged in each period. We are well aware that changes in each of these dimensions took place gradually and unevenly across countries and by no means

imply that earlier theories have lost its value. However, to look at the body of work on IM from this perspective helps emphasize our central points. Namely, that operating across borders was seen as the prerogative of developed countries' firms, and that EMNEs were predominantly portrayed as competing on the basis of country-specific advantages that are available to all firms based there, and typically short-lived.

The macro context of the 1960s and 1970s in which the 'classic' IB theories were developed was characterized by a number of elements. First, barriers to both trade and foreign direct investment (FDI) were significantly higher than those prevailing in the later period. Second, the cost of transportation of goods and, particularly, information was also significantly lower in the second period. A third factor of significance was that basic technological development was geographically concentrated in the US, Europe and, later, in Japan. As a consequence, international trade and investment became the domain of large, vertically-integrated and product, not services,-oriented corporations.

Scholars attributed the predominant source of competitive advantage of these companies to a set of home country factors (Vernon 1966; Dunning 1998). In particular, direct access to sources of new technology and knowledge, large and mature home markets, and well developed and stable legal and financial institutions were regarded as the necessary elements on which to base the international expansion of firms. Interestingly, enjoying large endowments in natural resources or a large pool of unskilled and cheap labor, was seen at the time as a neither a necessary or sufficient condition for firms in a particular country to engage in international activity. Indeed, those companies that internationalized the most during this period were from countries that were at a relative disadvantage in this regard. Tapping foreign pools of scarce resources to serve the host markets was frequently the reason for venturing abroad rather than the factor that made international expansion possible.

At the firm level, operating successfully across borders also involved the exploitation of what came to be referred to as "firm specific advantages' (FSA) (Rugman 1981). The nature of these firm-level advantages was thought to be, mainly, of two kinds: proprietary assets and common governance. The most common proprietary assets cited by IB scholars in this first period were firm-specific technologies and brand. Some scholars (e.g. Kogut 1989) also stressed the network advantages that MNEs could obtain through common governance. Importantly, the origin and renewal of these FSAs was seen as residing in the headquarters of the organization; rarely in the foreign subsidiaries.

In sum, this first period was characterized by a highly fragmented international system whereby the key sources of international competitive advantage were geographically bound at the country level and organizationally concentrated at the level of firm headquarters. In trying to explain the MNE phenomenon, IB scholars developed an array of theories (see part I of Rugman and Brewer (2001) for a review of the key literature on IB) that were a reflection of the circumstances of this era. Of central importance for this essay, these early theories suggest that the emergence and persistence of EMNEs -- in particular up-market DMNEs -- is unlikely event. Among other things, the lack of effective institutions in most developing countries made it extremely difficult for

multinationals-to-be to access the necessary sources of finance, knowledge or technology needed to overcome the liability of operating in a foreign country. Moreover, the political and economic fragmentation of the international system made it extremely difficult for potential EMNEs to ”borrow” foreign institutions (Siegel forthcoming) in order to access foreign markets for capital and technology (Arora, Fosfuri et al. 2001). As a result, the predominant view in this earlier period was that EMNEs could only exist to the extent that they had control of internationally scarce and valuable resources in their home country. In practice, this meant that EMNEs would concentrate in natural resource sectors or in industries where it was cost effective to substitute cheap labor for capital and technology.

Starting in the late 1980s and particularly after the mid-1990s, significant changes at the macro, country and firm levels dramatically transformed the global competitive landscape. Concomitantly, the classic theories of the MNE were revised and expanded upon.

At the macro level, this new scenario would be characterized by lower barriers to trade and investment, the liberalization of the telecommunications and financial services industries, dramatic improvements in the digitalization and transmission of data, and the consolidation of a number of supra-national institutions and global markets. As a consequence of these developments, a significant number of industries experienced a process of vertical disintegration and international dispersion that was at shocking variance with the precepts of the previous period. It was also at this time that a growing number of firms from developing economies started to emerge. Two aspects of these early EMNEs were particularly difficult to explain using the classic theories of the MNE. The first one was that these EMNES were not only developing ‘horizontally’ into other countries of similar levels of economic development but also ‘upwards’ into more developed countries. Secondly, and perhaps more problematic, was the fact that a significant amount of this expansion was not founded on the existence of privileged access to home country natural resources. As a result, a growing number of IB scholars started to pay closer attention at elements at the country and organizational level that made the emergence of these EMNEs possible.

The picture that is emerging from these efforts, this book being a good example, is one of significant diversity depending on the country and industry under study. Some emerging countries’ multinationals such as those from Russia or China (chapters 5 and 7) clearly respond to the classic model of international expansion based on the privileged access to cheap or scarce resources in the home country. In other cases, such as India or Israel (chapters ZZ and TT), most of the companies venturing abroad have done it in sectors where natural resources or unskilled labor were irrelevant or non-existent. Finally, countries such as Brazil, Thailand and South Africa (Chapters KK, LL and MM) represent intermediate cases in this spectrum.

From a theoretical standpoint, the first type of EMNEs did not pose a significant problem. That is, to the extent that firms had access to internationally scarce but domestically abundant resources they would be able to compensate the disadvantage of competing

with foreign firms in their own markets based on, mainly, cost differentials. Significantly more puzzling were cases where these sources of competitive advantage were irrelevant. In order to provide plausible explanations for the emergence of these latter kinds of EMNEs, a number of theories were advanced. These early theories of the EMNE pointed at the gradual process of technological accumulation that developing country-based companies enjoyed from interacting with DMNEs operating in their countries. Learning from these companies, it was argued, gave developing-country firms the possibility to eventually venture abroad (Lall 1983; Wells 1983). However, these theories are hard pressed to explain how firms from emerging markets would be able to compete with their 'masters' in sectors where cost differentials are not the key driver for competitiveness. Later authors have pointed out that idiosyncratic governance structures such as corporate family groups can fill the institutional voids existing in some developing countries (Khanna and Rivkin 2001; Luo 2003). In a similar vein, skillful use of individual social networks has been described as a substitute for poorly functioning institutions (Boisot and Child 1996; Ahlstrom and Bruton 2006; Yiu, Lau et al. 2007). To the extent that the architecture and use of these networks are culturally rooted, they help explain the emergence of EMNEs. Still another important explanation for the emergence of EMNEs turns around the argument of poor institutions as a constraint for the international expansion of firms. Authors such as Narayanan and Khanna have argued that it is precisely because institutions are weak that firms in developing markets need to develop a particular set of capabilities to successfully operate in their *domestic* market. To the extent that these capabilities happen to be relevant in other developing countries (that is, pass the RATs test), horizontal or "down-market" EMNEs may emerge. However, it is unlikely that they can explain "up-market" EMNEs that engage successfully in countries with stronger and more complete institutions. At the organizational level of analysis, EMNEs are explained by some authors as the result of technological and organizational leapfrogs. This is a central thesis in Amsden's work (1989, 2003), for example. As latecomers, EMNEs are not constrained by past investment decisions nor outdated mental maps of the competitive environment (Barr, Stimpert et al. 1992; Tripsas and Gavetti 2000). In so far as developing market firms could access key technologies and knowledge by either purchasing them in the open markets, through their suppliers, or through other firm acquisitions (Vermeulen and Barkema 2001), they might find themselves in a better competitive position than rival DMNEs. Finally, at the individual level of analysis, EMNEs are portrayed as being strongly dependent on leaders that, having grown up in the home country, have studied or worked in more developed markets. Their experience as boundary spanners, it is argued, makes them better able to spot opportunities in foreign countries that can be successfully satisfied by emerging market firms operating abroad.

Most of the theories providing an explanation for the emergence of EMNEs are still in the process of being tested empirically and, as a result, it is difficult to evaluate their potency and scope conditions. Nevertheless, we find that the factors enumerated above provide EMNEs, at best, a temporary advantage and, as a result, may explain the emergence but not the sustainability of EMNEs. For example, EMNEs that base their international competitive advantage on the basis of privileged access to natural resources or cheap unskilled labor are, almost by definition, non-sustainable: natural resources are finite and wage differentials with more advanced markets may narrow quickly as

emerging markets develop. The second group of explanations provided above is similarly limited in its capacity to explain how EMNEs may maintain, let alone improve, their initial competitive edge. For example, relying on an individual's social networks severely limits the growth potential of a firm. Similarly, advantages stemming from being latecomers to a particular industry start to disappear the moment a firm makes its first investment or commits to a particular strategy. The disappearance of this type of advantage may be particularly dramatic in sectors characterized by fast technological change.

Given the fleeting nature of the factors that have been used to explain the emergence of EMNEs, we think that it is also necessary to account for the mechanisms that explicate the renewal of these companies' initial competitive advantage. The study of these mechanisms –largely related to the creation, integration and diffusion of knowledge within the organization- is not new to the IB field (Barkema, Shenkar et al. 1997; Barkema and Vermeulen 1998; Vermeulen and Barkema 2001). In fact, these topics have represented the core of the research agenda of the IB community in the last decade. What we think is new and valuable is the integration of both strands of research in a way that acknowledges the differential traits of firms born in emerging markets.

In the following section we present the case of CEMEX, the Mexican cement and concrete producer. Through this example, we want to make two main propositions. First, that EMNEs initial competitive advantage may be based on elements other than privileged access to scarce or cheap resources. Secondly, and most important, that in order to explain how EMNEs are capable of sustaining and improving their international competitive position, current theories of the EMNE need to explain how these companies are able to renew the capabilities that allowed them to venture into foreign markets. The CEMEX example places emphasis on the fact that these sources of capability renewal are as likely to originate in the foreign markets where the firm operates as in its home market, and on the firm's ability to capture and incorporate this learning throughout the system.

Our model is one of exploration, exploitation, and enhancement in a continuous learning cycle, in many ways harking back to Penrose's (1995) vision of the MNE , enhanced by March's (1991) insight.

II. The CEMEX case[1]

On June 7, 2007 Mexico-based CEMEX won a majority stake in Australia's Rinker Group. The $15.3 billion takeover, which came on top of the major acquisition in 2005 of

[1] This section draws on Lessard and Reavis (2007) an MIT Sloan case written by Don Lessard and Cate Reavis with the collaboration of Rafel Lucea and Rodrigo Canales. We gratefully acknowledge CEMEX's willingness to collaborate in the development of this case, and particularly to Ricardo Naya, MIT SF 2007, who had been PMI manager for CEMEX, for providing key insights regarding CEMEX's journey. We have also benefitted substantially from the cases on CEMEX written by Lee and Hoyt (2005); Ghemawat and Matthews (1999); Podolny and Roberts (1999); and, Spulber (2007), and Ghemawat's (2007) extensive analysis of CEMEX's success.

the RMC Corporation – then the world's largest ready-made concrete company and the single largest purchaser of cement – made CEMEX the world's largest supplier of building materials. This growth also rewarded CEMEX's shareholders handsomely. In the three year period beginning June 2004, CEMEX's share price shot up from $13.50 to $37 resulting in a CAGR of 40% and the total annual shareholder return since CEMEX's debut on the NYSE in 1999 through 2007 was 24%, and would have been substantially higher from a starting point in the 1980s or early 1990s.

CEMEX's success was not only noteworthy for a company based in an emerging economy, but also in an industry where the emergence of an EMNE as a global leader cannot be explained by cost arbitrage; given cement's low value to weight ratio, little output moves across national boundaries.

In this section, we review the development of CEMEX's growing international footprint and the associated learning process in four stages as identified in a time line in Table 1. Particular emphasis is placed on how CEMEX has exploited its core competencies, initially generated at home, and enhanced these with learnings from new countries, to begin the cycle again.

Table 1: CEMEX Internationalization Timeline

Year	Stage	Key Events	Key Steps in Internationalization Process (italics indicate acquisition)
	Laying the Groundwork		
1982		Mexican crash	
1985		Zambrano named CEO	
1989		Consolidates Mexican market position with acquisition of *Tolteca*	
1989		Anti-dumping penalties imposed on exports to U.S.	
	Stepping Out		
1992			Spain
1994			Venezuela, Panamá
1995		Mexican recession	Dominican Republic
	Growing Up		
1996			Colombia
1996		Death of CFO	PMI on Mexico
1997-1999			Philippines, Indonesia, Egypt, Chile, Costa Rica
1999		NYSE Listing	
	Stepping Up		
2000			Southdown US
2005			*RMC* (UK- based global ready mix)
2007			*Rinker* (Australian/US based global concrete, aggregates)

Laying the groundwork for internationalization. In the 25 years leading up to the Rinker deal, CEMEX had evolved from a small, privately-owned, cement-focused Mexican company of 6,500 employees and $275 million in revenue to a publicly-traded, global leader of 65,000 employees with presence in 50 countries and $21.7 billion in annual revenue in 2007.

Well before its first significant step toward international expansion in 1992, CEMEX had developed a set of core competencies that would shape its later trajectory including strong operational capabilities based on engineering and IT and a culture of transparency. It also had mastered the art of acquisition and integration within Mexico, having grown though acquisitions over the years.[2] Between 1987 and 1989 alone, it spent $1 billion in order to solidify its position at home.

When the current CEO, Lorenzo Zambrano, assumed this post in 1985, Mexico had already begun the process of opening up its economy, culminating with its entry into NAFTA. The 1982 crash undercut the state-led nationally-focused model that had been predominant in Mexico over the years, and Mexico had begun the process to enter GATT, the precursor of the WTO. Recognizing that these events would significantly change the Mexican cement industry from a national to a global game, Zambrano began preparing the firm for the global fight. This first step would involve divestitures from non-related business and disposal of non-core assets. CEMEX also began "exploring" opportunities in foreign markets through exports, which required a fairly aggressive program of building or buying terminal facilities in other markets. Finally, the company began laying the groundwork for global expansion by investing in a satellite communication system, CEMEXNET, in order to avoid Mexico's erratic, insufficient and expensive phone service, and allow all of CEMEX's 11 cement factories in Mexico to communicate in a more coordinated and fluid way (Lee and Hoyt 2005). Along with the communication system, an Executive Information System was implemented in 1990. All managers were required to input manufacturing data—including production, sales and administration, inventory and delivery— that could be viewed by other managers. The system enabled CEO Zambrano to conduct "virtual inspections" of CEMEX's operations including the operating performance of individual factories from his laptop computer.

Stepping Out. In 1989, CEMEX completed a major step in consolidating its position in the Mexican cement market by acquiring Mexican cement producer Tolteca, making it the second-largest Mexican cement producer and putting it on the Top 10 list of world cement producers. At the time of the acquisition, CEMEX was facing mounting competition in Mexico. Just three months before the deal with Tolteca was finalized, Swiss-based Holderbank (Holcim), which held 49% of Mexico's third largest cement producer Apasco (19% market share), announced its intention to increase its cement capacity by 2 million tons (*Neue Zuercher Zeitung* October 13, 1989). This, along with easing foreign investment regulations that would allow Holderbank to acquire a majority stake in Apasco, threatened CEMEX's position in Mexico (Barham 2002). At the time,

[2] CEMEX was formed in 1931 from a merger between Cementos Hidalgo and Cementos Portland Monterrey. Later acquisitions and domestic expansion activity included: 1966-67, acquisition of Cementos Maya's plants in Merida, Yucatan (South East Mexico) and construction of new plants in Torreon, Coahuila and Ciudad Valles, San Luis Potosi (Central Eastern); 1976, acquisition of Cementos Guadalajara's three plants (Central Western); 1987, acquisition of Cementos Anahuac; 1989, acquisition of Cementos Tolteca (Distrito Federal).

CEMEX accounted for only 33% of the Mexican market while 91% of its sales were domestic.

In addition to these mounting threats in its home market, CEMEX was confronted with trade sanctions in the United States, its largest market outside of Mexico. Exports to the U.S. market began in the early 1970s, but by the late 1980s, as the U.S. economy and construction industry were experiencing a downturn, the U.S. International Trade Commission slapped CEMEX with a 58% countervailing duty on exports from Mexico to the United States, later reduced to 31% (Ghemawat and Matthews 1999).

In 1992, CEMEX acquired a majority stake in two Spanish cement companies, Valenciana and Sanson, for $1.8 billion, giving it a majority market share (28%) in one of Europe's largest cement markets (Ghemawat and Matthews 1999). The primary motivation for entering Spain was a strategic response to Holcim's growing market share in Mexico. As Hector Medina, CEMEX Executive VP of Planning and Finance, explained, "Major European competitors had a very strong position in Spain and the market had become important for them."[3]

A further important reason for the acquisition was that Spain during this time was an investment-grade country, having just entered the European Monetary Union, while domestic interest rates in Mexico were hovering at 40%, and Mexican issuers faced a country risk premium of at least 6 % for offshore dollar financing (Hossie 1990). Operating in Spain enabled CEMEX to tap this lower cost of capital not only to finance the acquisition of Valenciana and Sanson, but also to fund its growth elsewhere at affordable rates. While this benefit could have been obtained in any EC country, Spain offered considerable opportunities for growth and was relatively affordable. In addition, the linguistic and cultural ties between the two countries made it a sensible strategic move.

In order to pay off the debt taken on to fund the acquisition, CEMEX set ambitious targets for cost recovery. However, it soon discovered that by introducing its current Mexican-based best practice to the Spanish operation, it was able to reduce costs and increase plant efficiency to a much greater extent, with annual savings/benefits of $120 million (Duncan 1993) and an increase in operating margins from 7% to 24% (Podolny and Roberts 1999).

Thus, while the primary motive for the Spanish acquisition was to respond to a competitive European entry in its home market, a major source of value resulting from the acquisition was the improvement in operating results due to the transfer of best practice from a supposedly less advanced country to a supposedly more advanced one. CEMEX discovered that its home-grown operating capabilities passed the RATs test and generated considerable value.

Further, although it had acquired and integrated many firms within Mexico, this acquisition, because of its size and the fact that it was in a foreign country, forced

[3] Roberts and Podolny (1999).

CEMEX to formalize and codify its Post Merger Integration Process (PMI). CEMEX also enhanced is capabilities through direct learning from Spain. The company discovered, for example, that the two Spanish companies were unusually efficient due to the use of petroleum coke as their main source of fuel. Within two years, the vast majority of CEMEX plants began using petroleum coke as a part of the company's energy-efficiency program (Chavez 2006).

Figure 1 depicts the improvement in Spanish operations resulting from the adoption of Mexican best practices as a single "forward" learning loop (exploiting existing capabilities), the resource enhancement to all of CEMEX from Spain's lower cost of capital as a single "reverse" enhancement loop, and the improvement of the PMI process as double loop learning regarding the PMI process (from application/improvement of existing capability to all of CEMEX).

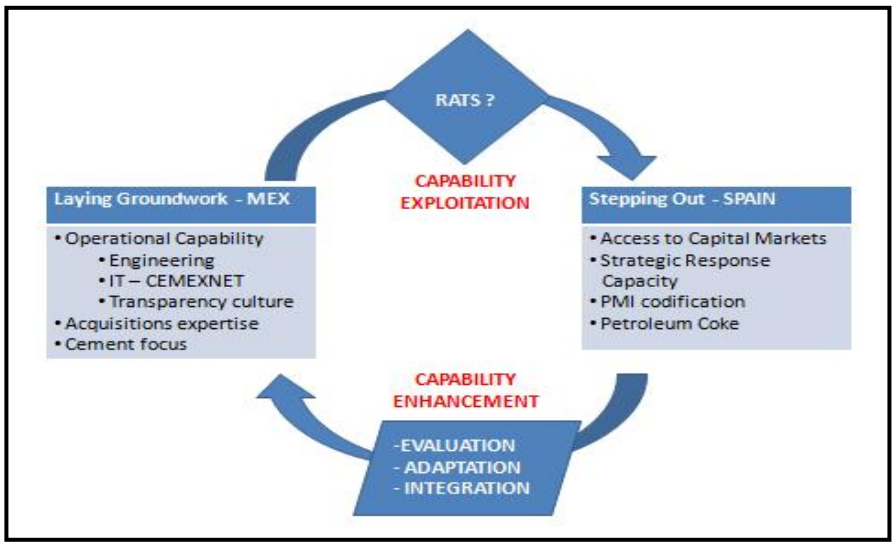

Figure 1- Stepping out

Accelerating Internationalization and Consolidating the CEMEX Way: CEMEX's move into Spain was followed soon after with acquisitions in Venezuela, Colombia, and the Caribbean in the mid-1990s, and the Philippines, and Indonesia in the late 1990s.These acquisitions, by and large, could be seen as exploiting CEMEX's core capabilities, which now combined learnings from the company's operations in Mexico and Spain.

The PMI process also underwent a significant change during this period. Attempts to impose the same management processes and systems used in Mexico on the newly acquired Colombian firms resulted in an exodus of local talent. As a result of the difficult integration process that ensued, CEMEX learned that alongside transferring best practices that had been standardized throughout the company, it needed to make a concerted effort

to learn best practices from acquired companies, implementing them when appropriate. This process became known as the CEMEX Way.

The CEMEX Way, also known as internal benchmarking, was the core set of best business practices with which CEMEX conducted business throughout all of its locations. More a corporate philosophy than a tangible process, the CEMEX Way was driven by five guidelines:

- Efficiently manage the global knowledge base;
- Identify and disseminate best practices;
- Standardize business processes;
- Implement key information and Internet-based technologies;
- Foster innovation.

As part of the integration phase of the PMI, the CEMEX Way process involved the dispatch of a number of multinational standardization teams made up of experts in specific functional areas (Planning Finance, IT, HR), in addition to a group leader, and IT and HR support. Each team was overseen by a CEMEX executive at the VP level (Whitaker and Catalano 2001).-

The CEMEX Way process was arguably what made CEMEX's PMI process so unique. While, typically, 20% of an acquired company's practices were retained, instead of eliminating the 80% in one swift motion CEMEX Way teams cataloged and stored those practices in a centralized database. Those processes were then benchmarked against internal and external practices. Processes that were deemed "superior" (typically two to three per standardization group or 15-30 new practices per acquisition) became enterprise standards and, therefore, a part of the CEMEX Way. As one industry observer noted, CEMEX's strategy sent an important message of, "We are overriding your business processes to get you quickly on board, but within the year we are likely to take some part of your process, adapt it to the CEMEX system and roll it out across operations in [multiple] countries." (Austin 2004) The cumulative effect of this process has been substantial. By some estimates, 70% of CEMEX's practices had been adopted from previous acquisitions (Whitaker and Catalano 2001).

A key feature of the PMI process is the strong reliance that CEMEX places on middle-level managers to both diffuse CEMEX's standard practices and to identify existing capabilities in the acquired firms that might contribute to the improvement of CEMEX's current capability platform. PMI teams are formed ad-hoc for each acquisition. Functional experts in each area (finance, marketing, production, logistics, etc) are selected from the operations that CEMEX has across the world. These managers are then relieved from their day-to-day responsibilities and sent, for periods varying from a few weeks to several months, to the country/ies where the newly acquired company operates.

Because these managers are the ones who *do* at home what they are teaching newly acquired firm's managers, they are the best teachers as well as the most likely CEMEX employees to identify which of the standard practices of the acquired firm might make a

positive contribution if adapted to and integrated into the CEMEX way. On the other hand, because they are seen as the best and the brightest within CEMEX, these managers have the legitimacy to propose and advocate for changes in the firm's operation standards in a way that no other manager could do. Hence, as in Nonaka's (1988) middle-up-down management, PMI team members are low enough in the organization that they are in a unique position to identify and evaluate different ways of doing things. At the same time, however, these managers are high enough in the organization that they can effectively 'sell' the value of the changing a particular practice to corporate level managers.

Drawing key people from multiple countries to form these teams represents a significant challenge for what CEMEX calls its 'legacy operations'. Since these positions are not covered with new hires and lowering performance definitely is not in the realm of possibilities, ongoing operations have to find ways to do the same work with fewer people and uncover the capabilities of those that remain.

A significant step in consolidating the CEMEX Way and making "One CEMEX" a global reality occurred as the result of the tragic death in 1996 of CEMEX's CFO Gustavo Caballero. Hector Medina, the then general manager of Mexican operations, took over the role, and Francisco Garza, who had been general manager of Venezuela, was named to head Mexican operations. When Garza took charge of the Mexican operations he decided to "PMI Mexico", to apply the PMI process to Mexico as if it had just been acquired. Roughly 40 people broken down into 10 functional teams spent between two and three months dedicated to improving the Mexican operation. Savings of $85 million were identified (Podolny and Roberts 1999). More importantly, it clearly established the principle of learning and continuous improvement through the punctuated PMI process and the continuous CEMEX Way.

Improvements resulting from the CEMEX Way were not limited to operational processes. During the 1990s, CEMEX also developed a branded cement strategy in Mexico that addressed the specific needs of customers for bag cement. While bulk cement accounted for roughly 80% of CEMEX's cement sales in developed countries, bagged cement represented the same percentage in developing countries like Mexico, reflecting the fact that many households built their own houses (Lee and Hoyt 2005). These customers were willing to pay a premium for known quality and convenient distribution, and CEMEX steadily introduced value-added features for these customers. While this unique business model was developed primarily in response to the characteristics of Mexican buyers, it clearly passed the RATs test with respect to other emerging markets where CEMEX was expanding, and drew in relevant innovations from a number of others countries.

Finally, with a growing number of plants and markets on the Caribbean rim, CEMEX began to actively exploit the capacity for cement trading to smooth/pool demand, economizing on capacity and raising average utilization rates in an industry notorious for large swings in output in line with macroeconomic fluctuations[4]

[4] For a description of how CEMEX was able to turn an environmental disadvantage – the macroeconomic volatility that has characterized the Mexican economy and many of the

Figure 2 summarizes the exploit-enhance cycle over this period.

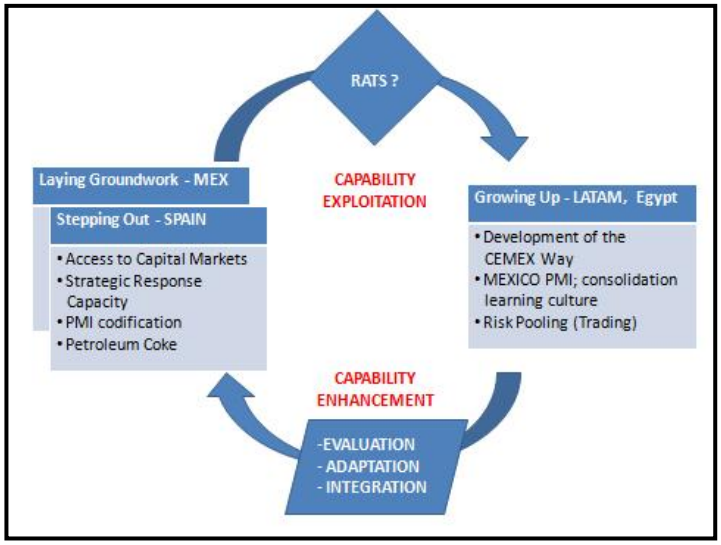

Figure 2 - Growing up

Stepping Up. Toward the end of the 1990s, CEMEX found that there were few acquisition targets that met its criteria of market growth/attractiveness and "closeness" to CEMEX in terms of institutional stability and culture at a reasonable price, and began to consider diversification into other activities, among other things. However, in order to "shake up" its strategic thinking, it made a series of changes in the way it explored potential acquisitions, including asking BCG, its long-time strategic advisor, to assign a new set of partners. One important resulting change was to redefine large markets, such as the United States, into regions. Once this was done, the United States, which CEMEX planners had viewed as a slow growing market with little fit with CEMEX, was transformed into a set of regions, some with growth and other characteristics more aligned with the rapidly growing markets CEMEX was used to. This set the foundation for the acquisition of Texas-based Southdown, making CEMEX North America's largest cement producer.

Another change was to shift the way that performance was measured, emphasis from margins, which had made cement appear much more attractive than concrete or aggregates, to return on investment, which in many cases reversed the apparent attractiveness of different businesses. With this reframing, other targets were identified, most importantly RMC, a UK-based, ready mixed concrete global leader.

On March 1, 2005, CEMEX finalized its $5.8 billion acquisition of U.K.-based RMC. This acquisition, which surprised many in the industry who assumed that RMC would be

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emerging markets in which it has invented – into a source of competitive advantage see Lessard and Lucea (2007).

acquired by a European firm, was CEMEX's first acquisition of another internally-diversified as opposed to single-country firm.
To prevail, CEMEX had to pay a 39% premium (Grancher 2005), and the financial markets did not respond favorably. CEMEX's share price dropped 10% hours after the announcement, and Moody's indicated that it was putting CEMEX on credit watch for a possible downgrade, voicing concern that the size of the RMC acquisition would distract management from its goal of cutting the company's debt (Derham 2004).

The acquisition of RMC significantly changed CEMEX's business landscape. The deal gave the company a much wider geographic presence in developed and developing countries alike, most notably France, Germany, and a number of Eastern European countries. Analysts predicted that as a percent of product revenue, cement would fall from 72% to 54% and aggregates and ready mix concrete would nearly double from 23% to 42% (Akram, Roger and McGoey 2004). Meanwhile, revenue from CEMEX's Mexican operations would fall from 36% prior to the deal to just 17%. (Ironically, during the company's annual meeting in July 2004, Zambrano told a group of analysts that, "CEMEX does not have to diversify to grow; we are an integrated cement company today and we will be a more integrated cement company tomorrow. Only bigger, more profitable, and more valuable.")

Financially, RMC was suffering. The company recorded a net income loss of over $200 million in 2003, and was trading at six times Earnings before Interest, Depreciation, and Taxes (EBITDA), compared to the industry average of 8.5 to 9 times (Derham 2004). RMC profit margin of 3.6% was far below the ready-made concrete average 6% to 8%.

Culturally, RMC was the polar opposite of CEMEX. RMC was a highly decentralized company with significant differences across countries in business model, organizational structure, operating processes, and corporate culture. CEMEX, in contrast, brought the CEMEX Way and a single operating/engineering culture that connected much more readily at the plant and operation level than RMC.

And yet, despite all of RMC's challenges, CEMEX was able to work its PMI "magic" in a very short period of time. Within one year, CEMEX had delivered more than the $200 million in the synergy savings it promised the market and it expected to produce more than $380 million of savings in 2007 (Prokopy 2006). CEMEX had clearly joined the big league, yet the imprint of its early years remained very strong.

In 2007, CEMEX took another major step, acquiring control of the Rinker Corporation. Rinker did not suffer the same lack of learning processes and cultural integration as RMC and thus at least some analysts questioned whether CEMEX would be able to work the same magic once again. Only time will tell. Figure 3 summarizes CEMEX's development during this final period.

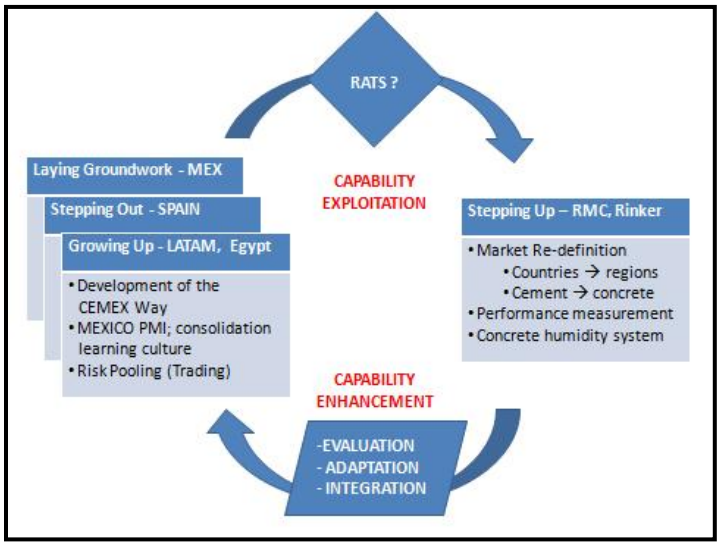

Figure 3 - Stepping up

III. Extending the theory of EMNEs

In the first section we briefly reviewed the current theories of the EMNE. We argued that they provide a plausible story of how these firms are able to take their first steps in the international arena but that they are deficient in explaining how sustained success is achieved. In the section titled "The CEMEX Case", we have traced the corporate history of CEMEX and highlighted the specific mechanisms that have made this company one of the most successful EMNEs in the world. We consider this case with particular interest because in the cement/concrete industry privileged access to natural resources is *not* a determining factor for market success. As a consequence, the CEMEX case brings to the fore the mechanisms by which intangible and organizational capabilities are systemically exploited and enhanced. In this section we take a step back from the particularities of the case and propose a more general framework to explain the emergence and sustainability of EMNEs.

The starting point of the model –see Figure 4- is not different, in the abstract, from classic theories of the MNE: the interaction of country and firm specific advantages determine the original set of capabilities, or capability platform, on which firms compete in their domestic market. What significantly differs from earlier theoretical approaches is that because of the changes in the macro-context reviewed in the section titled "Why Do MNEs Exist?", the nature of what may constitute a country-specific advantage (CSA) or FSA has significantly changed. In the case of developing economies that lack large domestic markets, limited indigenous technological development or weak institutions is no longer an impossible hurdle to overcome.

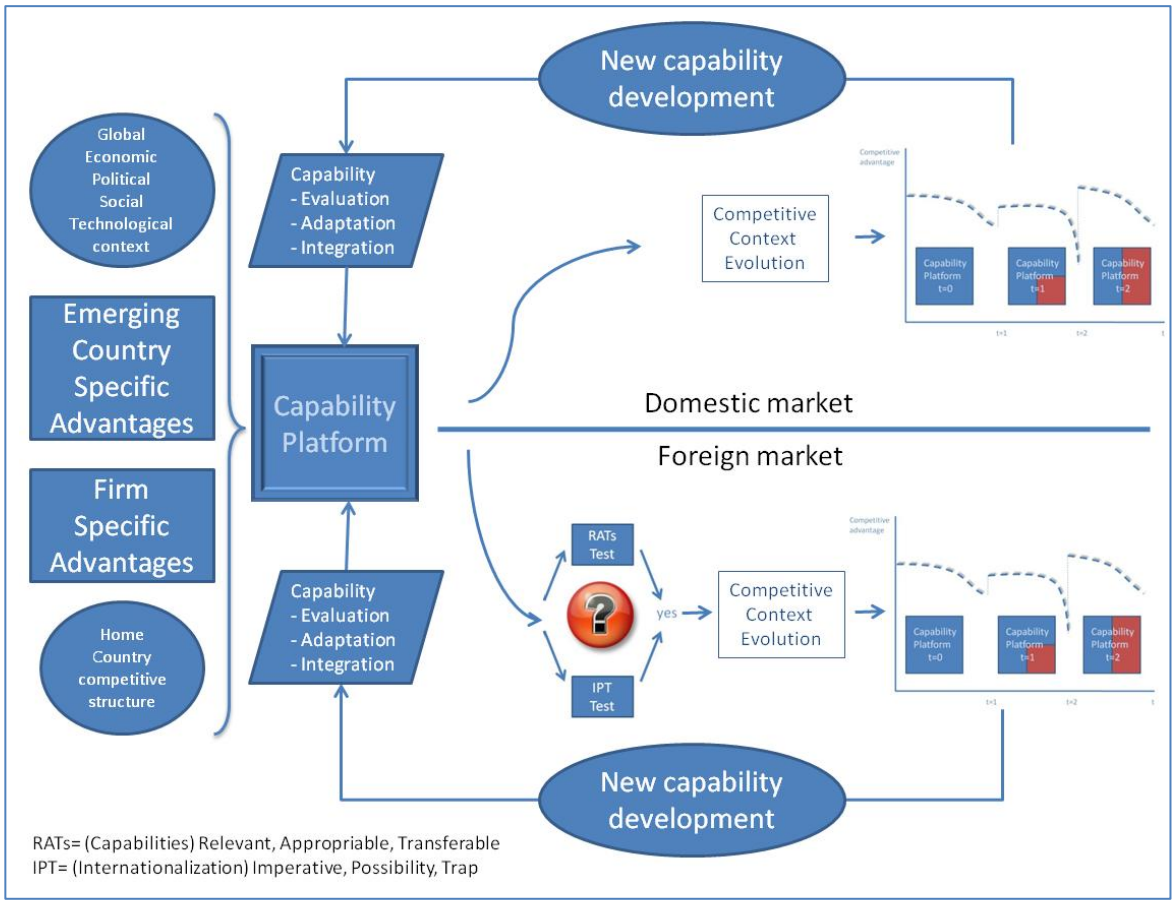

Figure 4- Sustainable advantage through capability development and recombination

What seems undisputable, though, is that domestic country conditions will have a significant effect on the shape of the initial capability platform developed by a firm. This original capability platform will allow emerging market firms to initially compete in their domestic markets. In addition, and to the extent that this capability platform travels well internationally, it will allow firms to expand beyond their country borders. Three conditions are necessary for this to happen. First, this domestically developed set of capabilities needs to be relevant to customers in other countries. That is, the value proposition that the firm is able to offer to customers in other countries has to be superior, in the aggregate, to other alternatives available these customers. Secondly, these capabilities need to be transferable across borders. This is not a trivial point since some operational processes, technologies and business practices may face strong political, regulatory or cultural barriers that severely constrain their adoption in other countries. Finally, the rents resulting from the exploitation of these capabilities in the foreign country need to be appropriable by the firm. Barriers to appropriability are also extremely varied, ranging from different regulatory regimes (for example regarding patent or trademark protection), to deeply ingrained social values (think of the popular revolts against water privatization in several parts of the world), to problems such as corruption

or open conflict. These three conditions—which make up the RATs test—will determine whether the original capability platform of an emerging market firm can travel well internationally. It is important to notice that they are country specific. That is, the capability platform of a particular company may pass the RATs test for a given country but not for another.

In addition to passing the RATs test, EMNEs soon discover whether internationalization for them is an imperative, a possibility or a trap. The most typical case of internationalization being an imperative is that of companies with small domestic markets. In this book, we have seen how Israeli software companies were born global or had to, very quickly, find more sizable markets abroad. Similarly, business models of telecommunications companies in Nordic countries incorporated, almost from the beginning, a strong international perspective. However, internationalization can also be a trap in those cases where foreign markets require extreme localization. More often, though, the course to follow is more ambiguous and internationalization is a more or less clear option to follow. One of the most obvious sources of ambiguity stems from the uncertainty of properly evaluating foreign market opportunities and the relevance of one's own capabilities abroad.

Firms operating in competitive markets, in the neoclassical sense of the word, see their competitive advantage eroded over time due to a variety of competitive forces. In order to sustain or improve their competitive position, firms need to adapt and renew their capability platform. This process usually takes place in a punctuated, rather than gradual, manner. While this argument is at the core of the dynamic capabilities literature, what is important in the case of EMNEs is that this capability renewal is as likely to originate in the home market as in the host markets where the firm operates. Indeed, classic theories of the multinational accepted that capabilities originated at the core of the organization, which resided in the home country, and were transferred to the foreign subsidiaries where they were exploited. As argued above, more recent research has strongly challenged this view by demonstrating the crucial role played by the periphery of the firm in the renewal of key capabilities. This capability renewal may come from two main sources. The first one, in line with the resource seeking motives for venturing abroad, is achieved by accessing resources through the subsidiary that are not available in the home market. In the CEMEX case, this is clearly illustrated by the access to European capital markets that the firm gained through the acquisitions of the Spanish companies Valenciana and Sanson in 1992. A second source of capability renewal stems from the responses developed by foreign subsidiaries to the domestic challenges and opportunities they face. Particularly relevant in this respect is the literature that studies the emergence of 'centers of excellence' at the subsidiary level (Fratocchi and Holm 1998; Nobel and Birkinshaw 1998; Kuemmerle 1999; Frost, Birkinshaw et al. 2002), the changing roles of subsidiaries as a consequence of sequential investments abroad (Kogut 1993; Chang 1995; Birkinshaw and Hood 1998), transfers of best practices among units (Szulanski 1996), and how subsidiaries draw from and contribute to the knowledge pool of their local industry cluster (Almeida 1996; Almeida and Kogut 1996). It is quite striking that in spite of this broad body of recent research, most of the literature on EMNEs strongly focuses on the elements that allow emerging market firms to take their first steps in the global

arena but is noisily silent with regards to the benefits that these companies derive from operating abroad.

The last element of our framework involves the transference of these locally developed new capabilities to the rest of the organization. In order to do so, it is necessary to establish formal and informal processes to evaluate the relevance, transferability and appropriability of the new capabilities to other markets – and indeed, to shape these emerging capabilities so that they will be relevant, appropriable, and transferable -- the RATs test in reverse. Next, it is necessary to integrate these new capabilities in a coherent manner within the original capability platform. And finally, there it is necessary to establish the mechanisms to diffuse these practices to the rest of the organization. It is in this continuous process of capability platform exploitation-enhancement-exploitation that the sustainability of the MNE is built. CEMEX is perhaps an extreme case of institutionalization of this co-evolutionary process. Indeed, it is its extremely centralized structure and emphasis on documentation, evaluation and standardization of new practices across countries that makes this company somewhat of a Weberian ideal case. Nevertheless, research on the transfer of practices among subsidiaries (Szulanski 1996) and from subsidiaries to headquarters (Gupta and Govindarajan 1991; Gupta and Govindarajan 1999), certainly supports our argument that new capabilities do, in fact, originate in places other than the home country and that they selectively blend with the original capability platform of the firm. It is through this process of capability renewal that MNEs are able to sustain their competitive advantage at home and abroad.

What is then special about EMNEs? As argued above, the original domestic conditions that an emerging market firm encounters strongly determine the original capability platform on which its international competitive advantage will be based. Research on organizational imprinting (Stinchcombe 1965; Swaminathan 1996; Marquis 2003) and managerial cognition (Barr, Stimpert et al. 1992; Tripsas and Gavetti 2000) has convincingly shown that early events in the history of an organization—including the conditions that determined the configuration of the original capability platform—have a long-lasting effect in its structure, predominant practices and the dominant mindsets of executives. As a consequence, what is different about EMNEs is that even as their capability platforms evolve, they are likely to continue to reflect some of the key features that made them internationally competitive in the first place. In CEMEX's case, for example, the obsession for standardized operational excellence can be traced back to the early days of the company. In a country characterized by poor infrastructure, weak institutions, loose business practices, and urban traffic chaos, product and processes standardization was the strategy that allowed CEMEX to differentiate itself from other local competitors and achieve market dominance in its home market. Similarly, the emphasis on controlling the operations from the center and a rigid vertical structure reflects the weight that family control and social status carry still today in Mexican society. These are traits that will surely not go away any time soon and that will keep differentiating CEMEX from its competitors from developed countries.

While this framework tries to explain and generalize the processes through which EMNEs gain and sustain internationally relevant sources of competitive advantage, there

are a number of scope conditions that we think apply. The first one is that we would expect this framework to be most relevant for EMNEs from countries at middle levels of development. A second element of notice in successful EMNEs is that the development of new capabilities and the initiation of the feedback loop described above is a phenomenon that tends to take place at intermediate levels of the organization. Consistent with Nonaka (1988), we find that it is usually managers sitting between the corporate and the purely operational level of the organization that are better suited to identify opportunities for new capability development and to evaluate its potential value in other markets where the company operates.

IV. Conclusions

This chapter tries to achieve three main goals that we think contribute to a better understanding of the EMNE phenomenon. The first objective has been to briefly review the current explanations for the existence of emerging market multinationals and position them within the broader international management literature. We note that current theories of the EMNE provide plausible explanations of how these companies are able to initiate their international journey. However, they are of less help to understand how they are able to sustain or even improve their international performance. This is particularly troublesome when the competitive advantage of EMNEs is not based on privileged control of internationally valuable resources in the domestic market.

Our second objective was to provide a factual story of one EMNE that has been able to successfully compete with MNEs located in developed countries in their own home markets. While CEMEX's evolution is clearly unique, it helps us identify a number of processes that seem to be of relevance in explaining how EMNEs may compete in the world markets on factors other than cheap domestic labor or control of internationally scarce natural resources.

This CEMEX case also helped us to motivate and give texture to an expanded conception on the sources of competitiveness of EMNEs; our third objective. The framework we propose in section 3 generalizes the insights gained from the CEMEX case and emphasizes the relevance of the co-evolutionary process by which EMNEs renew and upgrade their original capability platform. Initially, EMNEs gain access to international markets by exploiting their domestically-generated but internationally-relevant capability platforms. To the extent that they have to respond to competitive challenges or gain access to new resources in these foreign markets their original capability platform will be enhanced. It is only through this co-evolutionary process of capability exploitation-enhancement-exploitation, where the sources of capability enhancement are both foreign and domestic, that it is possible to explain the persistent competitiveness of EMNEs in the global arena.

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