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Hoenen, Anne Kristin; Nell, Phillip C.; Ambos, Björn

Published in:
Long Range Planning

DOI:
[10.1016/j.lrp.2013.08.009](https://doi.org/10.1016/j.lrp.2013.08.009)

Published: 01/01/2014

Document Version
Peer reviewed version

[Link to publication](#)

Citation for published version (APA):
Hoenen, A. K., Nell, P. C., & Ambos, B. (2014). MNE Entrepreneurial Capabilities at Intermediate Levels: The Roles of External Embeddedness and Heterogeneous Environments. *Long Range Planning*, 47(1-2), 76 - 86. <https://doi.org/10.1016/j.lrp.2013.08.009>

MNE Entrepreneurial Capabilities at Intermediate Levels:
The Roles of External Embeddedness and Heterogeneous Environments

Anne K. Hoenen, Phillip C. Nell, Björn Ambos

Abstract

This study investigates the entrepreneurial capabilities of MNE units at intermediate geographical levels, between the local subsidiary level and global corporate headquarters. In our conceptual development, we build on the entrepreneurship and MNE embeddedness literature to explain how MNE units at intermediate geographical levels differ from local subsidiaries and global corporate headquarters, and why those differences are important. We illustrate our arguments using data on European regional headquarters (RHQs). We find that RHQs' entrepreneurial capabilities depend on their external embeddedness and on the heterogeneous information that is generated through dissimilar markets within the region. Our study opens up for an interesting discussion of the independence of these mechanisms. In sum, we contribute to the understanding of the entrepreneurial role of intermediate units in general and RHQs in particular.

Introduction

Entrepreneurial activities within firms, such as the recognition, identification, evaluation, and exploitation of opportunities (Shane & Venkatraman, 2000), are essential if the firm is to adapt to changes in increasingly dynamic and competitive environments (Bartlett & Ghoshal, 1989; Birkinshaw, 1997; Birkinshaw & Hood, 1998; Zahra et al., 1999). The challenge of effectively managing corporate entrepreneurship is exacerbated in the geographically dispersed multinational enterprise (MNE), as these organizations' firm-specific advantages often lie in the identification, extraction, and diffusion of knowledge and innovation across locations and units (Doz et al., 2001; Kogut & Zander, 1992; Rugman & Verbeke, 2001).

As with research into MNEs in general, corporate entrepreneurship in MNEs has typically been discussed in the literature as a global-local dichotomy (Asakawa & Lehrer, 2003). Originally, the MNE's headquarters unit was viewed as the main driver of entrepreneurship and innovation in the MNE (Patel & Pavitt, 1992; Vernon, 1966).¹ Later, researchers' attention shifted towards the role of subsidiaries, and their entrepreneurial initiatives and mandates (Birkinshaw, 1997; Birkinshaw & Hood, 1998; Frost et al., 2002), in recognition of the fact that entrepreneurial activities are more distributed throughout the MNE and that new knowledge can stem from any MNE unit (Bartlett & Ghoshal, 1989; Gupta & Govindarajan, 1991; Gupta & Govindarajan, 2000; Hedlund, 1986).

Despite these advancements, a compelling explanation of why and how MNEs differ in their ability to continuously identify and exploit opportunities is lacking (Mahnke et al., 2007). Specifically, a significant opportunity to contribute to our understanding of entrepreneurial

¹ In this paper, we understand the term "corporate entrepreneurship" as an umbrella term that also includes innovation (see Shane, 2000).

activities in MNEs arises from the lack of research into the role played by intermediate units located between the global corporate headquarters and the local subsidiaries (Asakawa & Lehrer, 2003). Therefore, this paper aims to develop our understanding of the important role of intermediate management levels for entrepreneurship in MNEs.

To derive a precise understanding of intermediate-level entrepreneurship, we focus on the early stages of the entrepreneurial process that are related to the identification of opportunities and the initiation of their exploitation.² We investigate the entrepreneurial capabilities—defined as the ability to identify opportunities in the business environment and to initiate their exploitation—of intermediate units. Furthermore, while acknowledging that there are other intermediate levels of analysis, such as centers of excellence or divisional headquarters, we focus on the regional level of analysis in the form of regional headquarters (RHQs). This level of analysis is particularly relevant in the context of MNEs. In fact, a number of authors have identified the need for more work on entrepreneurship at this level (Ambos & Schlegelmilch, 2010; Asakawa & Lehrer, 2003; Rugman & Verbeke, 2001; Verbeke et al., 2007).³

Our contribution is twofold. First, we make a conceptual contribution by contrasting the unique position of intermediary units to that of global corporate headquarters (HQs) and local subsidiaries (Lehrer & Asakawa, 1999). We conceptualize intermediary units as hybrid

² The generic entrepreneurial process has been conceptualized in a number of ways that cover different sub-processes. However, the process is generally assumed to start with opportunity identification or recognition, and end with the exploitation of the opportunity across the firm (Shane & Venkatraman, 2000). The exact delineation of the individual sub-processes is difficult and there are multiple overlaps. In our definition, we focus on the opportunity-identification side of the overall process.

³ Some researchers also argue that the study of RHQs is of growing importance due to the largely regional structure of the contemporary international business environment. The establishment of an RHQ is one of the most frequent organizational responses to such environments (e.g., Wolf & Egelhoff, 2002). While there is a growing amount of research on RHQs, most of it focuses on issues of control and coordination rather than on entrepreneurship and innovation (e.g., Enright, 2005a, 2005b; Lehrer & Asakawa, 1999; Morrison et al., 1991; Nell et al., 2011b; Piekkari et al., 2010).

organizational entities that are distinct from subsidiaries and HQs units, although they share some of the same characteristics. Furthermore, building on previous research, we argue that external embeddedness (e.g., Meyer et al., 2011; Andersson et al., 2002; Birkinshaw, 1997; Birkinshaw & Hood, 1998), and exposure to heterogeneous information and knowledge (Kogut & Zander, 1992; Kogut & Zander, 1993; Mahnke et al., 2007; Zahra & Garvis, 2000) are conducive to the building of entrepreneurial capabilities. We suggest that intermediate units are embedded in and exposed to environments in a distinct manner. Therefore, we argue that entrepreneurial capabilities and, thus, the opportunities identified at intermediate levels differ from those at other levels. Consequently, intermediate units can be valuable for entrepreneurship within the MNE, as they may recognize non-redundant entrepreneurial opportunities.

Second, we present an exploratory empirical analysis of data on European RHQs to illustrate some of our arguments. We explore if and how the entrepreneurial capabilities of RHQs are related to the external relationships that those units form in their regions (regional embeddedness) and the extent to which those regions encompass dissimilar markets (intra-regional dissimilarity). Our results suggest that entrepreneurial capabilities of RHQs are, in fact, dependent on both the level of regional embeddedness and the degree of intra-regional dissimilarity, which are positively associated with RHQs' entrepreneurial capabilities. In addition, the interaction effect opens up for an interesting discussion regarding their substitutive, rather than complementary, roles.

Literature Background and Conceptual Development

Entrepreneurship in the MNE

All kinds of productive possibilities are sensed and taken advantage of in recognizing and exploiting entrepreneurial opportunities (Penrose, 1959). Such productive possibilities could be arbitrage opportunities (Kirzner, 1973), new ways of organizing transactions (Casson, 1982), or new combinations of resources (Schumpeter, 1947).

For decades, the MNE literature has framed entrepreneurship and innovation in MNEs within a dichotomous global-local framework (Asakawa & Lehrer, 2003). Initially, entrepreneurship and innovation were considered as a firm-level, i.e., global, activity. In this view, central research and development (R&D) departments were the principle developer of innovations (e.g., Patel & Pavitt, 1992), home locations were the main contributors of knowledge and resources (e.g., Vernon, 1966), and corporate managers sensed opportunities for geographical and/or product-market expansions of the firm. The underlying logic was that the corporate center had a good overview of corporate activity and that it developed and possessed know-how (also referred to as “firm-specific advantages”) that could subsequently be transferred within the MNE to internalized activities abroad (Buckley & Casson, 1976; Rugman, 1981). The subsidiary was therefore seen as merely a passive recipient of such resources.

In the late 1980s, research attention increasingly shifted towards subsidiaries as the level of analysis (e.g., Bartlett & Ghoshal, 1989; Birkinshaw, 1997; Birkinshaw & Hood, 1998; Cantwell & Mudambi, 2005; Gupta & Govindarajan, 1991, 2000; Hedlund, 1986; Roth & Morrison, 1992). In this regard, local subsidiaries have been found to profit from their proximity to host country clusters, which enables the development of particularly close linkages to a variety of actors, such as customers, suppliers, and universities. These, in turn, increase the subsidiaries’ entrepreneurial potential (Cantwell, 2009). In fact, numerous studies show that such strong local embeddedness leads to knowledge and capability development, entrepreneurial initiatives, and

innovation output among subsidiaries (Andersson et al., 2002; Almeida & Phene, 2004; Birkinshaw et al., 2005; Håkanson & Nobel, 2001). Based on this rich stream of work, recent frameworks assume that entrepreneurship and innovation can be initiated by any MNE unit at any level, including the intermediate levels, and that the MNE might take advantage of such initiatives in a variety of ways (see Rugman & Verbeke, 2001, for a comprehensive overview of these patterns).

The Strategic Role of Intermediate Levels

Despite these advancements, a number of scholars call for more work on MNE entrepreneurial processes at intermediate levels. For example, Verbeke et al. (2007) identify uninvestigated linkages between corporate-level entrepreneurship and subsidiary-level initiatives. Organizational units that take over important entrepreneurial tasks and that are located between the corporate and the local subsidiary level can be called “intermediate-level units”. These include RHQs, divisional HQs, and centers of excellence—subsidiaries that have a particular mandate and a “greater-than-unit-level” contribution (Frost et al., 2002). The common denominator is that these units are “hybrid” organizational forms (Lehrer & Asakawa, 1999) in that they act as agents for corporate headquarters (as a specific type of subsidiary) and as parents to (a group of) subsidiaries (which makes them a specific type of headquarters unit). For example, a center of excellence can take over world product mandates and act as the entrepreneurial leader for a global product line (Frost et al., 2002; Roth & Morrison, 1992). Others highlight that regional—i.e., supra-national—levels of management may help explain how entrepreneurship functions within large, geographically-dispersed MNEs (Asakawa & Lehrer, 2003; Rugman & Verbeke, 2001).

Perhaps the most comprehensive study capturing the effects of intermediate units on entrepreneurship and innovation is found in Asakawa and Lehrer (2003), who focus on RHQs. Based on extensive qualitative data, they describe RHQs explicitly as “relays”. In this regard, they argue that organizational units at intermediate geographical levels often support subsidiaries in identifying and pursuing opportunities, and they help connect them to the rest of the MNE. Entrepreneurial RHQs are conceived of as brokers that are sufficiently well connected to both the corporation as a whole and to the subsidiary context. Therefore, Asakawa and Lehrer (2003) argue that these units are relatively important in all three entrepreneurial sub-processes: which they name 1) identification; 2) extraction; and 3) diffusion. In this context, regional relay offices are “better positioned to compensate for the limitations of both headquarters and the local units in matching local knowledge to global applications within the MNC” (Asakawa & Lehrer, 2003, p. 38). They identify different “local-for-global” patterns and state that these patterns are often mediated by regional relay offices. In other words, local subsidiaries sense and develop opportunities in their local markets, while regional units help extract and evaluate those opportunities that have a potential for exploitation beyond the subsidiary context; i.e., within the region or the MNE as a whole.

In sum, intermediate units, such as RHQs, seem to possess entrepreneurial capabilities that are important for entrepreneurial processes within the MNE. Asakawa and Lehrer (2003) explain that RHQs are particularly strong in all entrepreneurial sub-processes. They highlight the “relaying” ability of RHQs, in particular, because of the way in which RHQs are embedded internally within the firm (i.e., they are well-connected with both the global and the local levels). However, Asakawa and Lehrer (2003) seem to adopt a bottom-up perspective, as they assume that only local subsidiaries or regional levels identify entrepreneurial opportunities. In this

respect, they reduce corporate HQs to a role of pure exploitation, which runs counter to the literature highlighting that opportunity recognition might also be important at the corporate level (Mahnke et al., 2007; Rugman & Verbeke, 2001).

Not only do we know that opportunity recognition may occur at all levels, but previous literature has also emphasized the presence of different mechanisms for opportunity recognition at the local subsidiary level and the corporate HQ level. At the local level, entrepreneurial opportunity recognition is mainly linked to the subsidiaries' degree of embeddedness in their local environments (e.g., Andersson et al., 2002; Almeida & Phene, 2004; Birkinshaw et al., 2005; Håkanson & Nobel 2001). At the corporate level, opportunity recognition is mainly associated with the heterogeneity and diversity of informational input. As Mahnke et al. (2007, p. 1287) summarize, an MNE's "entrepreneurial opportunity recognition capability benefits from the diversity of location-specific discoveries". As the mechanisms driving opportunity identification seem to differ across levels, one might expect units at different levels to identify different types of opportunities. What seems to be missing, however, is an explanation of how intermediate units are positioned in this respect and how they benefit from these distinct mechanisms.

Thus, we attempt to investigate this issue. We choose RHQs as our research setting. First, we theoretically discuss how RHQs' external embeddedness differs from that of other units and whether they benefit from the relationships that they build with local actors in the region's markets. We refer to this as the RHQs' "regional embeddedness". Second, we discuss RHQs' exposure to more or less similar environments than other units, and whether RHQs benefit from this unique positioning. Figure 1 illustrates our main idea, which extends the relay concept presented by Asakawa and Lehrer (2003).

Figure 1: Entrepreneurship within the MNE

Level of analysis	Global	Intermediate	Local
Stylized MNE with RHQs below the corporate HQs; the RHQs manage a number of local subsidiaries			
Main entrepreneurial activities according to Asakawa and Lehrer (2003)	Diffusion	Identification, extraction, diffusion	Identification
Main mechanisms fostering opportunity identification	Profiting from exposure to dissimilar environments (e.g., Mahnke et al., 2007; Zahra & Garvis, 2000)		Profiting from embeddedness in local networks (e.g., Andersson et al., 2002; Birkinshaw & Hood, 1998)

External Embeddedness and Entrepreneurial Capabilities

Relationships with external networks (external embeddedness) are believed to be among the most important domains relevant to entrepreneurship (Hitt et al., 2001), as they serve as sources of information that help entrepreneurial firms identify potential opportunities (Cooper, 2001). We argue that the external embeddedness of RHQs differs from the embeddedness of corporate HQs and of local subsidiaries.

As mentioned above, local subsidiaries are strongly embedded in a specific local context (e.g., Andersson et al., 2002; Birkinshaw, 1996; Birkinshaw, 1997; Rugman & Verbeke, 2001). Similarly, corporate HQs and RHQs are embedded in certain home (or host) locations, and they have their own, idiosyncratic networks. The mechanism that links this local embeddedness to

entrepreneurial capabilities is the same for HQs as for subsidiaries. To this end, if they are not collocated, HQs, RHQs, and subsidiaries are embedded in different environments.

While this is obvious, there is evidence indicating that the relationships of higher-level units also overlap with the subsidiaries' own relationships (Forsgren et al., 2005; Nell et al., 2011a). Higher-level units, such as HQs, embed to some extent in their subsidiaries' networks for reasons related to control, power, and information gathering. For example, Forsgren and colleagues (Forsgren et al., 2005; Yamin & Forsgren, 2006) find that approximately two thirds of all subsidiaries in their samples have local network partners with which higher-level units also have relationships. However, the degree of embeddedness with these partners usually differs. Nell et al. (2013) find that HQs' linkages to local subsidiaries' contexts are rather weak relative to their subsidiaries' linkages to the same partners.⁴ The reason for this finding is twofold. First, HQs' linkages to local subsidiaries are less likely to be buyer-seller exchange relationships ("business relationships"; see Andersson et al., 2002) in which connected partners exchange not only information but also a broad range of resources. Such relationships are typically characterized by repeated, regular interaction. Rather, HQs' linkages to local subsidiary contexts are more likely to take the form of information and communication channels that are established in addition to business relationships that subsidiaries maintain with the same partners. Second, HQs must consider the whole MNE rather than a particular country or market. Excessive embeddedness in all local subsidiaries' contexts would probably be too costly, as building and maintaining relationships in multiple dispersed local contexts would require a substantial amount of managerial time and effort (Nell et al., 2011a). Thus, corporate HQs are likely to be weakly

⁴ Note that this holds for established MNCs. During the creation phase of a new subsidiary, the regional or corporate HQ may maintain and manage the business relationships (see Nell et al., 2011a).

embedded in a number of globally dispersed markets, whereas the subsidiary is likely to be strongly embedded locally.

In this respect, RHQs occupy an important intermediate position. While they are embedded in a particular host location, they are also “higher-level” units that are embedded in their subsidiaries’ networks to some extent. In other words, RHQs are embedded in the region, i.e., in multiple markets within a region, whereas global HQs are embedded in multiple markets that are globally dispersed. Furthermore, Forsgren and Yamin (2006) argue that RHQs are more likely than corporate HQs to have the opportunity to be strongly embedded in their subsidiaries’ environments. Corporate HQs would need to embed in a larger number of markets than RHQs. Also, corporate HQs are, on average, too far away from local markets, which leads to a lack of embeddedness and tremendous difficulties in understanding local market developments and opportunities. Thus, the scope of the external network and the strength of the relationships to this network’s actors differ between global HQs and RHQs, as well as between RHQs and local subsidiaries.

Why is the regional embeddedness of the RHQ important for corporate entrepreneurship? We argue that the RHQs’ embeddedness in the region is important for gathering and processing information, and that it helps the RHQ build entrepreneurial capabilities. Investments in embeddedness allow the RHQ to build external ties that, in turn, involve its staff in the subsidiaries’ operative contexts. Furthermore, such involvement exposes the RHQ to local contexts and can be expected to shape work experiences in the RHQ accordingly. The relationships convey important information about the regional markets (Adner & Helfat, 2003), and enable the RHQ to interpret and make sense of the environmental conditions and how their subsidiaries operate in those contexts (Holcomb et al., 2009). As a result, the RHQ better

understands its subsidiaries' market approaches, their competitive situations, product market solutions, etc. This, in turn, improves the ability of the RHQ to identify new opportunities and initiate their exploitation, perhaps by initiating new ventures or planning new market entries.

Dissimilarity and Entrepreneurial Capabilities

In addition to the issue of the external embeddedness of the MNE, an idea has emerged that MNEs can profit from the diversity and *dissimilarity* of the multiple environments in which they operate. This is believed to be one of the key advantages that MNEs have relative to domestic firms (Kogut & Zander, 1993). As acquiring new information is fundamental for entrepreneurial opportunity recognition (Casson & Wadeson, 2007), entrepreneurial activities, in which identification and sensing are important, benefit from the exposure to heterogeneous contexts (see the entrepreneurial “arbitrage opportunities” literature; e.g., Kirzner, 1973). In addition, Schumpeter (1947) highlights that different bodies of knowledge can result in new resource combinations that are of value to the firm.

In the context of the MNE, increased diversity of informational input should be especially conducive to knowledge generation and the identification of new ideas and opportunities. Hansen (1999), for example, reports that non-redundant information helps project teams search for new knowledge that could be useful for their tasks. Other scholars find that high redundancy of knowledge in industries or alliances restricts the adaptability of the entire system (Uzzi, 1996) and capability development (McEvily & Zaheer, 1999). In other words, if all MNE markets are highly similar, they will produce homogenous knowledge, similar product-market solutions, convergent tactical reactions towards distributors, and so on. Thus, consistent with the entrepreneurship literature, which holds that complex and diverse environments offer significant

opportunities to develop new products, processes, and systems (Zahra et al., 2009; Hitt et al., 2001; Fernhaber et al., 2008), we argue that dissimilar markets should improve an MNE unit's ability to identify new opportunities.

The RHQ also occupies an important middle position in this respect. The corporate HQ may be exposed to a large number of very diverse markets, whereas the local subsidiary is exposed to a single market. The RHQ, which is uniquely embedded in its region, is exposed to the diversity and heterogeneity that the regional markets offer. On average, the heterogeneity to which an RHQ is exposed to is likely to be lower than the heterogeneity that the corporate HQ experiences, but higher than that encountered by local subsidiaries. However, the similarity of the markets in the region might vary depending on the strategy of the MNE and the regional setup. For example, some firms might allocate an entire geographical region, such as Europe, to an RHQ. Such a region is likely to be composed of relatively dissimilar markets. Other firms might focus more on the similarity among markets and allocate very similar markets, such as Germany, Switzerland, and Austria, to an RHQ.

In sum, we suggest the following:

Proposition 1: When compared to corporate HQ and local subsidiaries, an RHQ is uniquely embedded in the region for which it is responsible (i.e., in multiple markets in the region) and the degree of regional embeddedness is positively related to the entrepreneurial capabilities of the RHQ.

Proposition 2: When compared to corporate HQ and local subsidiaries, an RHQ is uniquely embedded in the region for which it is responsible, and it is thus

exposed to the level of heterogeneity and diversity that exists within that region.
The degree of dissimilarity in the region is positively related to the entrepreneurial capabilities of the RHQ.

As argued above, the two mechanisms (embeddedness and intra-regional dissimilarity) seem to provide largely independent explanations of how RHQs identify opportunities. However, the two facets could very well be interdependent. We argue that RHQs are hybrid units that are different from local subsidiaries and corporate HQs, but also share some characteristics with those units. What seems to emerge is the question, if the RHQ as an intermediate, hybrid unit profits from both mechanisms simultaneously; or, if it should orient itself rather towards the logic of heterogeneity and diversity to foster opportunity recognition (the mechanisms related to the corporate level); or, towards the logic of strong local embeddedness (mechanisms related to the local subsidiary level)? This question is less relevant for corporate HQs and local subsidiaries: the latter lack exposure to heterogeneous knowledge across markets, while the former lack the ability to strongly embed in a number of local subsidiary markets. Thus, it is the unique position of the intermediate unit that makes this question relevant.

In the following, we present an exploratory empirical study to provide stronger grounds for some of our main ideas. In addition to testing our main propositions, we explore a possible interaction effect between the two main independent constructs.

Empirical Illustration

We estimate a simple OLS regression with the RHQs' entrepreneurial capabilities as the dependent variable. We also use PLS structural equation modeling to conduct some robustness

tests and to control for a potential direct effect of intra-regional dissimilarity on RHQs' embeddedness.

We use data from 40 RHQs located in five European countries. These units are defined as purposefully established subunits at intermediate geographical levels that are concerned with and involved in the integration and coordination of activities of more than two subsidiaries located in different countries (Schütte, 1996). To compile our initial sample, we used unpublished lists of RHQs in the UK, Switzerland, the Netherlands, Germany, and Austria. These countries have been found to host large numbers of RHQs in Europe (Ambos & Schlegelmilch, 2010). A list of 803 regional offices served as our initial sample frame. However, upon investigation, 43% of these units did not fit our definition of an RHQ, as they merely served as regional bridgeheads to global headquarters or as holdings without management responsibility. These units were excluded from the investigation. A structured questionnaire was sent to the top managers of the remaining units in May 2008.⁵ Responses were received from 46 RHQs, which represents a response rate of 10.1%. However, missing values in six of these responses led to a final sample size of 40. The data exhibit good variance across key demographic variables.⁶

Measures

⁵ Over 50% of the respondents were from the top-management level (CEOs, CFOs, and senior vice presidents). 35% of the respondents were second-tier managers in functions such as marketing, finance, or corporate development. We lack information on the remaining 12% of respondents.

⁶ Roughly 40% of the RHQs were less than ten years old, 30% were between ten and twenty years old, and 15% were older than twenty. For six RHQs, this information was not provided. The number of employees varied as well, with 38% of all RHQs having a maximum of 50 employees, 20% having between 50 and 200 employees, and the remainder having more than 200 employees (missing values for about one third of all RHQs). Most of the corporate headquarters for the RHQs in our sample were located in Europe (70%), although MNEs headquartered in the US (25%) and Asia (5%) were also represented (three missing values). The size of the regions differed as well: 40% of the RHQs were responsible for up to five country markets, 28% were responsible for six to twenty markets, and approximately one third held responsibility for more than twenty countries. Finally, in terms of industry, 40% of the sample were involved in services and IT, 30% were involved in a wide range of manufacturing industries, 13% were active in chemicals and pharmaceuticals, and the rest were active in other industries, such as construction and utilities.

We use the average scores for multiple items of our constructs. The dependent variable is the level of entrepreneurial capabilities of RHQs. Capabilities are notoriously difficult to capture and proxies must often be used.⁷ We follow Phene and Almeida (2008) in that we proxy the RHQs' level of entrepreneurial capabilities by capturing the outcome of such capabilities. We asked the RHQs' top management to assess the following three early-stage entrepreneurial activities with regard to their importance within the RHQs' overall set of tasks: searching for new business opportunities, initiating new ventures, and entering new markets (Cronbach's alpha = 0.77). Respondents measured these items using a Likert-type scale ranging from one to five.

We define and capture the regional embeddedness of RHQ units as the extent to which they have built close linkages with the external environments of the local subsidiaries in their regions. Similar to Nell et al. (2011a), we use a graphical scale, rather than a standard Likert scale, for this measure. Each respondents was asked to use a six-point scale to estimate the strength of the relationships between the RHQ and local actors in the region (Cronbach's alpha = 0.90). The following local actors were included: suppliers, customers, industry associations, administrative authorities, local governments, and other local firms in related industries.

The diversity and heterogeneity to which the RHQ is exposed is captured by investigating the level of intra-regional dissimilarity, which is defined as the extent to which the markets and business environments comprising the region for which the RHQ is responsible are dissimilar. We measured intra-regional dissimilarity as a multi-dimensional construct, which was adapted from previous research (see Katsikeas et al., 2006). Respondents were asked to assess the level of similarity of those countries for which the RHQ was responsible on a five-item, Likert-type scale

⁷ For example, Parmigiani and Holloway (2011) measure headquarters' capabilities by using the proxies of the headquarters' cumulative revenues, and whether or not the headquarters is collocated with the subsidiary.

ranging from one (very similar) to five (very dissimilar). Dissimilarity assessment was requested for the following dimensions: economic environment (e.g., purchasing power, infrastructure); regulatory environment (e.g., laws, technical standards); customer beliefs, attitudes and consumption patterns; competitive intensity; and market size (Cronbach's alpha = 0.87).

Analysis

Correlations and descriptive statistics for our variables are provided in Table 1, while the results are presented in Table 2. Our estimation meets the assumptions of OLS regressions. There is support for our two propositions, as both intra-regional dissimilarity and RHQs' regional embeddedness are positively and significantly related to RHQs' entrepreneurial capabilities (at $p < 0.01$). The interaction term is negative and significant at $p < 0.05$.

Table 1: Pair-wise Correlations and Descriptive Statistics

	1	2	3
1 RHQs' entrepreneurial capabilities	1.000		
2 RHQs' regional embeddedness (centered)	0.487	1.000	
3 Intra-regional dissimilarity (centered)	-0.352	-0.182	1.000
Mean	3.642	0	0
Standard deviation	1.087	1.509	0.970

Table 2: Regression Results (Dependent Variable: Entrepreneurial Capabilities)^a

	(1) Includes direct effects	(2) Includes interaction effect
Intercept	3.642** (0.132)	3.594** (0.126)
RHQ embeddedness (centered)	0.411** (0.090)	0.388** (0.086)
Intra-regional dissimilarity (centered)	0.510** (0.140)	0.530** (0.132)
RHQ embeddedness x intra- regional dissimilarity		-0.187*

		(0.079)
Observations	40	40
R-squared	0.438	0.515

^a Standard errors in parentheses. ** $p < 0.01$, * $p < 0.05$, + $p < 0.1$. Two-tailed tests.

As our approach is explorative in nature due to the limited sample size, and as we are investigating a previously-unexplored research topic, we ran a number of robustness tests (see Table 3 in the Appendix for details). First, we performed additional OLS estimations in an attempt to control for additional factors (see Models 1 through 5 in Table 3 in the Appendix).⁸ Second, we conducted a PLS estimation (see Model 6 in Table 3) using SmartPLS (Ringle et al., 2005). This enabled us to control for a potential direct relationship between intra-regional dissimilarity and RHQs' regional embeddedness, which was not found to be significant. Third, while our argumentation does not change depending on the dissimilarity dimensions, we checked the robustness of our model given changes in the composition of the variable. We estimated a series of separate models in which we removed one of the similarity items from the analysis. In addition, we explored whether the dissimilarity variable should be modeled as a formative indicator, which might make sense from a theoretical perspective. To a great extent, the results of our robustness tests were qualitatively identical to those of the original model (see Table 3 in the Appendix).

⁸ Given our limited sample size, we did not enter all control variables into the model. Instead, we ran separate models. Each model included a new control variable, which replaced the previous control variable. We used the RHQs' age, the region's size, the RHQs' industries, the competitive intensity of the industry, and the MNE's country of origin as controls. RHQ age was measured as the number of years between the subsidiary's date of establishment and 2007. Region's size was measured as the number of countries belonging to the scope of the RHQ. We accounted for the fact that several RHQs in our sample belonged to the same industry or the same MNC country of origin by using robust cluster procedures as implemented in STATA 11.0. Competitive intensity was measured using six indicators: fierceness of competition; frequency of price competition in the region; frequency of competitive moves by competitors; significance of changes in customers' preferences; difficulty of forecasting technological developments; and, the number of new product ideas made possible by technological breakthroughs.

Discussion

We seek to make several important contributions in this paper. First, we contribute to the literature on *embeddedness*, which has been influential in explaining subsidiary-level competence creation and entrepreneurship (Andersson et al., 2002, Birkinshaw & Hood, 1998; Birkinshaw et al., 2005). Our results show that RHQs can profit from building relationships with their subunits' networks in the sense that such relationships foster their entrepreneurial capabilities. This is consistent with the strong evidence of a positive relationship between embeddedness and entrepreneurial capabilities at the subsidiary level (see Birkinshaw et al., 2005). In this regard, our results contribute to recent literature that emphasizes the need for a more holistic concept of external embeddedness (Halinen & Törnroos, 1998; Nell et al., 2011a) and the phenomenon of “multiple embeddedness” (Meyer et al., 2011).

Second, RHQs' entrepreneurial capabilities seem to benefit from *dissimilarity* in the region. This finding aligns with the literature on heterogeneous and complex environments, which indicates that such environments yield non-redundant knowledge and ample opportunities for opportunity recognition (Hansen, 1999; Mahnke et al., 2007; Zahra & Garvis, 2000).

Thus, our findings provide evidence that the mechanisms relating to the MNE level (exposure to dissimilar environments) on the one hand and the local subsidiary level (embeddedness) on the other hand are replicated at the regional level. Yet, the mechanisms are not replicated exactly, since the entrepreneurial capabilities of RHQs are likely to differ from those of corporate HQs and local subsidiaries. RHQs are embedded in various environments differently than either HQs or subsidiaries. These differences relate to the scope of the markets, as well as the way in which RHQs are embedded. Consequently, the RHQ's cognitive and informational bases for opportunity recognition differ from those of locally embedded

subsidiaries and corporate HQs. It is therefore likely that opportunities discovered at the regional level will differ from those discovered at other organizational levels. This extends the relay concept presented by Asakawa and Lehrer (2003), and adds to our understanding of the importance of intermediate-level units for entrepreneurial processes within firms.

In addition, the interaction between the two main variables generates some interesting insights. To interpret these findings, let us start by looking at a stylized RHQ that is responsible for a region characterized by a very high level of intra-regional similarity. For this unit, the national borders that divide the individual markets lose their meaning to such an extent that we could almost speak of one large market. In these settings, our findings are comparable to those of subsidiary-level studies, which suggest that strong embeddedness helps create subsidiary-level capabilities and enables entrepreneurial initiatives (Andersson et al., 2002; Birkinshaw, 1997; Birkinshaw & Hood, 1998). This implies that RHQs' embeddedness might work best in regions without significant cross-national differences.

The introduction of intra-regional dissimilarity helps to create entrepreneurial capabilities, but it simultaneously hinders the effective leveraging of RHQs' embeddedness. This finding seems to align with previous literature, which has argued that dissimilarity and heterogeneity in markets carry a cost associated with increased complexity (Casson & Wadeson, 2007; Rugman & Verbeke, 2004). To date, the MNE embeddedness literature has been relatively silent on such issues. In his review of one important text on MNE embeddedness, Yamin (2007) highlights the fact that, for many scholars, the geographical dimension of the network (e.g., local or regional) does not seem to matter, as these scholars focus only on the extent of embeddedness. In our context, cross-national differences matter for leveraging the direct ties that MNE units maintain with external actors. Interestingly, this discussion is linked to previous literature framed within

the global-local dichotomy. Following Asakawa and Lehrer (2003), we propose that RHQs are positioned differently than corporate HQs and local subsidiaries, which enables these intermediate units to make a unique contribution to corporate entrepreneurship. However, the substitutive relationship of the two main variables indicates that RHQs, in their unique middle position, do not simultaneously profit from both mechanisms fostering opportunity recognition. It seems as if RHQs struggle with the challenge of balancing the respective entrepreneurial logics pertaining to the global and the local levels. In other words, balancing embeddedness and dissimilarity is a key challenge for entrepreneurially active RHQs.

Naturally, there are several limitations to our study. First, as our paper is exploratory in nature, there is a need to engage in much more rigorous testing of our propositions. For example, notwithstanding the robustness of our results across different estimation methods, it would be useful to control for additional contingencies (e.g., the scope of the RHQs' value chains; Rugman et al., 2011) and the internal embeddedness of the RHQ (Meyer et al., 2011). The use of a larger dataset would help to make the results more generalizable to RHQs outside Europe. In addition, although recent research indicates that common method problems are unlikely when testing models with interaction (Siemsen et al., 2010) and despite the fact that we use a number of tools to check for and avoid such biases (Chang et al., 2010; Podsakoff et al., 2003),⁹ future research could, for example, collect datasets from different sources. For example, intra-regional dissimilarity could be operationalized using secondary data. However, we caution that secondary data does not necessarily improve the quality of the information. In the end, economic similarity,

⁹ First, the measurement of the dependent variable was included in the first part of the questionnaire. Second, the questionnaire was long and a number of questions unrelated to this study were included between the independent variables and the dependent variable. This procedure is frequently used to decouple independent variables from dependent variables. Third, we conducted a Harman's one-factor test, the results of which indicated that all variables did not load on a single factor. Fourth, we protected respondent anonymity to avoid consistency motif and social desirability biases, and we improved the scale items after extensive pre-testing.

and similarity in customer beliefs or competition, are difficult to measure using secondary data and it is questionable whether such data would be more objective.

Second, future research could engage in qualitative and longitudinal studies to confirm the causality between the main constructs of intra-regional dissimilarity, embeddedness, and entrepreneurial capabilities. We base the suggested relationships on theory, but our data set is too limited to provide empirical support for our arguments.

Third, while the concept of entrepreneurship in the MNE is inherently multi-level, our data only focus on intermediate geographical levels. Future research could more explicitly model the multi-level character, and, for example, integrate local or global effects stemming from regional-level entrepreneurial activities. Furthermore, future research could investigate how RHQ embeddedness interacts with subsidiary embeddedness.

Fourth, while our study relies on a small European sample, the tendency of most MNEs to restrict their activities to one or two (homogeneous) regions (see Rugman, 2005) could signal that, by and large, firms find it easier to leverage and build entrepreneurial capabilities in similar markets and through embeddedness. However, decisions to group countries together are based on numerous factors, such as political issues and the need to control subsidiaries. Our data and model do not capture such factors, but we encourage researchers to apply more complex models that account for such issues.

Finally, we focus on the region—and RHQs—as the level of analysis between global and local. However, the overarching issues of exposure to and embeddedness in particular environments should also be critical for other types of intermediate units. For example, a center of excellence with a world product mandate is, by definition, embedded in and exposed to a certain global industry. That environment differs from the external environment of corporate

HQs and individual subsidiaries. Therefore, it could be fruitful to investigate differences between different types of intermediate units.

Conclusion

In this paper, we explicitly address the need for a more detailed understanding of entrepreneurship at intermediate organizational levels (Asakawa & Lehrer, 2003). We contribute to the development of Asakawa and Lehrer's (2003) relay concept by focusing specifically on the entrepreneurial capabilities of RHQs in early stages of the entrepreneurial process. We add to the previous literature (e.g., Rugman, 2005; Rugman & Verbeke, 2004) by emphasizing the uniqueness and, thus, the importance of intermediate units for entrepreneurial activities. Not only do these units mediate processes initiated at the local subsidiary or corporate HQ levels, but they are also important actors when it comes to sensing opportunities and initiating their exploitation.

We find that intermediate units' entrepreneurial capabilities are positively related to their embeddedness and to the type of environments to which they are exposed. Our finding regarding the interaction effect, however, requires particular attention, as it implies that the processes at work are complex. Specifically, embeddedness and dissimilarity do not seem to be complementary, i.e., the more dissimilar a region, the higher the likelihood of obtaining dissimilar knowledge, but the less the likelihood that the RHQ is able to utilize and fully exploit the direct ties (embeddedness) it maintains with the local context. RHQs and other intermediate units have to manage this balance with care.

Acknowledgments

We are indebted to the Austrian National Bank (OeNB), as well as the WU Wien for funding this project. Furthermore, we want to thank the editorial team as well as the two anonymous reviewers.

Appendix

Table 3: Robustness Tests^a

	(1)	(2)	(3)	(4)	(5)	(6)
	Robust clusters for industries ^b	Robust clusters for MNE country of origin ^b	Including control variable of RHQ age	Including control variable of RHQ country scope	Including control variable of competitiv e intensity	PLS estimation ^c
Intercept	3.594** (0.138)	3.594** (0.066)	3.802** (0.185)	3.399** (0.186)	0.293** (0.542)	
RHQ embeddedness	0.388** (0.085)	0.388** (0.053)	0.340** (0.108)	0.401** (0.085)	0.366** (0.087)	0.540** (0.119)
Intra-regional dissimilarity	0.530** (0.076)	0.530** (0.104)	0.448** (0.159)	0.481** (0.135)	0.570** (0.135)	0.470** (0.103)
RHQ embeddedness x intra-regional dissimilarity	-0.187** (0.030)	-0.187** (0.053)	-0.237+ (0.117)	-0.165* (0.079)	-0.162* (0.080)	-0.306+ (0.165)
Age of RHQ			-0.006 (0.008)			
Size of the region				0.011 (0.008)		
Intensity of competition					0.207 (0.165)	
Observations	40	40	34	40	40	40
R-squared	0.515	0.515	0.453	0.541	0.536	0.546

^a Standard errors in parentheses. ** $p < 0.01$, * $p < 0.05$, + $p < 0.1$. Two-tailed tests.

^b Uses robust industry cluster standard errors as implemented in STATA 11.0.

^c The PLS estimation accounted for a direct relationship between intra-regional dissimilarity and RHQs' regional embeddedness. The relationship was insignificant. The discriminant validity and internal consistency of the constructs could be verified. The estimation of the standard errors is based on a 1,000-sample bootstrapping procedure with sample size of 40.

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Biographies:

Anne K. Hoenen is a PhD candidate at the Institute for International Business at the WU Wien, Vienna University of Economics and Business, Austria. Before joining academia, she gained professional experience in the airline and fast-moving consumer goods industry, working in Germany, France, Switzerland, Singapore and Denmark. Her research focuses on the organization and strategy of multinational corporations from an agency theory perspective as well as on processes of internationalization and strategy-making. E-mail: anne.hoenen@wu.ac.at

Phillip C. Nell is an Associate Professor at the Department of Strategic Management and Globalization at Copenhagen Business School. He is also the current academic director of the CEMS program at Copenhagen Business School. Phillip holds a European Master of Business Sciences (EMBS) degree and a Diplom-Kaufmann from University of Bamberg. He received his PhD from WU Wien (Vienna University of Economics and Business) and joined Copenhagen Business School subsequently. Before joining academia, Phillip gained considerable industry experience as a consultant with Roland Berger Strategy Consultants and conducted projects in Germany, the US, and France in several industries such as construction, white goods, glass products, non-profit, and hospitals. His research interests are centered on the organization of the multinational corporation, the management of subsidiaries, and the role headquarters play in large and complex organizations. His research has been accepted for publication *inter alia* in *Strategic Management Journal*, *Journal of World Business*, and *Research Policy*. E-mail: pcn.smg@cbs.dk

Björn Ambos is a Chaired Professor of Strategic Management and Director at the Institute of Management of the University of St. Gallen. His current research concerns global strategies, regional headquarters, knowledge management and innovation within multinational companies. Professor Ambos previously held positions at the University of Edinburgh, the University of Hamburg and WU Vienna, as well as visiting positions at Bocconi University and Florida International University. Professor Ambos is current member of board of the European International Business Academy and recently completed a three-year appointment as an officer of the Global Strategy Interest Group at the Strategic Management Society, where he was also served as program co-chair for the 2012 annual conference. His research has appeared in journals like *Strategic Management Journal*, *Organization Science*, *Long Range Planning* and *Research Policy*. E-mail: bjoern.ambos@unisg.ch