



ELSEVIER

Contents lists available at ScienceDirect

International Business Review

journal homepage: www.elsevier.com/locate/ibusrev



MNE subsidiary evolution from sales to innovation: Looking inside the black box

Chaisung Lim^a, Martin Hemmert^{b,*}, Seunghoi Kim^a

^a Konkuk University, School of Business, 1 Hwayang-dong, Gwangjin-gu, Seoul 05029, South Korea

^b Korea University, School of Business, 145 Anam-ro, Seongbuk-gu, Seoul 02841, South Korea

ARTICLE INFO

Article history:

Received 19 December 2015
Received in revised form 1 June 2016
Accepted 10 June 2016
Available online xxx

Keywords:

MNE subsidiary evolution
Sales subsidiary
Lead user
Innovation management
Role change
Case study

ABSTRACT

Whereas the innovation-related evolution of multinational enterprise (MNE) subsidiaries has been extensively studied, the numerous sales subsidiaries in MNE networks have received little attention in this context. This study examines the evolution process of a sales subsidiary towards acquiring innovation-related capabilities and actively supporting innovation activities of a MNE. The evolution is explained in terms of technical information flow in an in-depth case study of a semiconductor MNE's sales subsidiary in South Korea. We find that the evolution of the sales subsidiary to innovation support has been enabled by a combination of subsidiary-related, lead market-related and event-related factors. We contribute to the literature on MNE subsidiary evolution by studying the unexplored evolution of a sales subsidiary. We combine the general framework of subsidiary evolution with the lead user perspective and suggest directions for potential theory extensions on MNE subsidiary evolution.

© 2016 Elsevier Ltd. All rights reserved.

1. Introduction

Due to the globalization of research and development (R&D) activities of multinational enterprises (MNEs), different types of international subsidiaries with different roles have emerged. Some subsidiaries absorb and utilize parent firms' knowledge, while others create and transfer knowledge to parent firms (Ambos, Ambos, & Schlegelmilch, 2006; Collinson & Wang, 2012; Figueirido, 2011; Kuemmerle, 1999; Phene & Almeida, 2008).

Subsidiaries evolve with role changes. On the one hand, subsidiaries that do not perform well may be liquidated. On the other hand, subsidiaries that successfully grow may acquire capabilities that are superior to their parent firms. Role change occurs in accordance with changes in the capabilities and strategy of subsidiaries, and the parent firm, and changes of the host country environment (Birkinshaw & Hood, 1998; Cantwell & Mudambi, 2005). We define subsidiary evolution as a coupled change in the capabilities and the role of an international subsidiary within a MNE (Birkinshaw & Hood, 1998).

In contrast to R&D subsidiaries, sales subsidiaries are defined as subsidiaries without R&D or manufacturing activities which are focused on sales activities. Although sales subsidiaries are

generally more numerous than manufacturing and R&D subsidiaries in MNE networks, they have been neglected in discussions on the innovation-related evolution of international subsidiaries. As innovation occurs through the integration of R&D, manufacturing and marketing activities (Sherman, Souder, & Jenssen, 2000), sales subsidiaries have the potential to play an active role in supporting innovation activities of the parent firm beyond the passive role of selling developed products. However, little is known regarding their potential evolution towards innovation.

Innovation-related evolution of MNE sales subsidiaries may not have received much research attention because such an evolution seems difficult to achieve. It implies the acquisition of innovation-related capabilities and the concurrent transition from a passive to an active role in the MNE network (Fig. 1). From a resource-based perspective, a self-initiated role change of international sales subsidiaries towards innovation support appears difficult because sales subsidiaries lack R&D resources and thus cannot easily acquire innovation-related capabilities.

However, a role change can be imagined when considering the linkages of sales subsidiaries with customer firms such as when local customers request MNE subsidiaries to develop new products. The literature on user innovation (Morrison, Roberts, & von Hippel, 2002; Urban & von Hippel, 1988; von Hippel, 1978) and supplier involvement with customer firms' product development activities at an early stage (Asmus & Griffin, 1993; Fujimoto, 1997; Liker & Choi, 2004; Ragatz, Handfield, & Scannell, 1997)

* Corresponding author.

E-mail addresses: edisonfoot@gmail.com (C. Lim), mhemmert@korea.ac.kr (M. Hemmert), twoshcom@gmail.com (S. Kim).

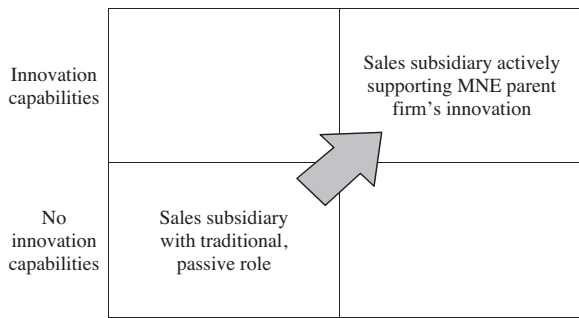


Fig. 1. Stylized illustration of MNE sales subsidiary evolution.

emphasize the importance of interactive learning in product innovation. A sales subsidiary can support the innovation activities of the parent firm by interacting with the local customer firm, representing the parent firm. Under changing local market conditions and customer relationships, the subsidiary may actively support the innovation activities of the parent firm by going beyond the passive role and acquiring innovation capabilities.

However, we still lack a good understanding of the conditions in which this role change may occur or how the evolution process evolves. Better insights into these conditions and processes appear highly relevant because they could potentially enable MNEs to better use international sales subsidiaries for capturing global market opportunities and enhancing innovation activities. The literature on subsidiary evolution mostly focuses on the subsidiaries and their interaction with MNE parent firms (Schmid, Dzedek, & Lehrer, 2014; Strutzenberger & Ambos, 2014). Limited consideration has been given to the interaction of subsidiaries with local counterparts, including customers.

In this study, we combine the theoretical perspectives of subsidiary evolution and user innovation to examine the two-way interaction of a subsidiary with the local customer and MNE parent firm. Empirically, we examine the process of the subsidiary role change from sales to innovation through a case study of a semiconductor MNE's international sales subsidiary for mobile devices in South Korea (hereafter, Korea). The Korean microelectronics industry is a highly relevant setting for this research topic. Korean firms have become global leaders in this industry and have advanced to the global forefront in innovation (Hemmert, 2012). Korean firms have therefore attracted much attention by MNEs in related industries.

The study aims to contribute to the literature on international subsidiary evolution by (1) examining the theoretically unexplored evolution of a MNE sales subsidiary from a passive role towards an active innovation support role; identifying the conditions that enable this role change; (2) studying the subsidiary evolution process through an in-depth case study of a MNE subsidiary in the Korean microelectronics industry with a focus on technical information flow; and (3) suggesting directions for theory extensions on MNE subsidiary evolution through the integration of different theoretical perspectives.

2. Literature review and theory

2.1. Roles and evolution of MNE subsidiaries

Two contrasting roles of subsidiaries in innovation activities have been identified in the literature on MNEs' international subsidiaries. Cantwell and Mudambi (2005) discuss competence-creating and competence-exploiting mandate subsidiaries. In competence-creating, a subsidiary actively creates new knowledge within the MNE network. In competence-exploiting, a subsidiary

utilizes the knowledge created by the parent firm (Birkinshaw, 1998; Frost, Birkinshaw & Ensign, 2002; Holm & Pedersen, 2000; Kuemmerle, 1999). Competence-creating mandate subsidiaries engage in research-related production (Cantwell, 1987) and strategic asset-seeking investment (Dunning, 1995), and utilize internationally integrated MNE innovation networks (Bartlett & Ghoshal, 1989; Cantwell, 1994; Doz, 1986). Such subsidiaries have been labeled as home-base augmenting subsidiaries (Kuemmerle, 1999), center-of-excellence subsidiaries (Birkinshaw, 1998; Frost et al., 2002; Holm & Pedersen, 2000) and higher-order contributors to organizational heterarchy (Hedlund, 1986). In contrast, competence-exploiting mandate subsidiaries engage in assembly-type production or market-servicing investment and are lower-order contributors in MNEs' organizational hierarchies.

Taxonomies of innovation-related international subsidiaries help to clarify the different types and roles. However, they do not consider potential role changes and evolution. Role changes are discussed by research on the evolution of MNEs. Bartlett and Ghoshal (1986) suggest that the role of the MNE subsidiary is decided either by the parent firm only, the parent and the subsidiary, or the subsidiary only. The local environment and the parent firm environment influence the role of the subsidiary. Birkinshaw and Hood (1998) discuss the evolution of the subsidiary as it takes different roles. Three types of positive subsidiary evolution (positive role change) are identified. First, the parent firm may decide to enhance the subsidiary's capability profile and invest in the required resources for the subsidiary to have the capability (parent-driven investment). Second, the subsidiary may identify new opportunities, build the capability for capturing opportunities and ask the parent firm to allow extending the role of the subsidiary (subsidiary-driven charter extension). Third, the subsidiary's role could be reinforced as a result of the subsidiary's own efforts to enhance competitiveness and capability (subsidiary-driven charter reinforcement).

Another stream of literature focuses on proactive entrepreneurial behavior by MNE subsidiaries, 'subsidiary initiatives' (Ambos, Andersson, & Birkinshaw, 2010; Birkinshaw, 1997; Birkinshaw, Hood, & Young, 2005; Delany, 2000). This literature is mostly concerned with organizational level antecedents and outcomes of subsidiary initiatives, such as the acquisition of new roles and capabilities when subsidiaries proactively seek new business opportunities. In contrast, less research attention has been given to implementation processes related to such role changes and the specific interaction of subsidiaries with local partners in a host country environment (Schmid et al., 2014; Strutzenberger & Ambos, 2014).

The literature on subsidiary role changes and subsidiary initiatives discusses the evolution of MNE subsidiaries with an emphasis on enhanced innovation capability and the decision-making of the subsidiary and parent firm, assuming that the subsidiary has an innovation capability from the outset. However, the evolution of sales subsidiaries without innovation-related capabilities is not considered.

Role change and evolution can also be discussed with respect to the subsidiary's network relationships. The subsidiary is regarded as part of an international network that consists of the parent firm, subsidiaries, and the subsidiaries' linkages with local firms and public organizations in the host country (Ghoshal & Bartlett, 1990). Therefore, a subsidiary's network position can define its role. Moreover, a subsidiary's evolution can be discussed according to the change in relationships with network partners. These relationships are shaped by the degree of social attachment between network partners, which results in credibility and mutual benefits. Through the strengthening of mutual social attachment, subsidiaries can maintain and enhance their role and network position (Andersson, Forsgren, & Holm, 2002). However, the specific

innovation-related contents, operational interactions and knowledge flows, which may evolve in the process of subsidiary evolution, are not discussed within this framework.

Finally, a recent stream of research examines subsidiaries' network roles and evolution by applying the framework of dual or multiple embeddedness. Thus, MNE subsidiaries are embedded in multiple networks. These networks consist of MNE-internal networks with parent firms and other subsidiaries, and external networks with local partners in host countries (Meyer, Mudambi, & Narula, 2011). In the context of innovation-related activities, Figueirodo (2011) finds that the technological level of MNE subsidiaries is determined by the knowledge intensity of linkages with parent firms and linkages with local agents. Knowledge-intensive linkage is dense information flow that enables a subsidiary to develop technologically advanced products. Similarly, Achcaoucaou, Miravittles, and León-Darder (2014) find that R&D subsidiaries of MNEs can achieve competence-enhancing roles when internal (MNE-related) and external (host country-related) embeddedness grow simultaneously.

Recent research on dual/multiple embeddedness and evolution of MNE subsidiaries considers innovation-related activities. However, this research also assumes that these subsidiaries have established R&D organizations, which they attempt to develop and upgrade. Sales subsidiaries do not have R&D resources, however, and therefore find it difficult to obtain knowledge intensive linkages. Hence, there remains a theoretical gap in explaining the evolution of sales subsidiaries.

2.2. User innovation and supplier integration

The topic of this study is the evolution of a manufacturer's international subsidiary through the collaboration with a customer firm. We also approach this study from a different theoretical angle by focusing on the interaction and knowledge flows between the subsidiary and customer. Specifically, two streams of literature may be considered in this context: user innovation and supplier integration.

User innovation research has long established that industrial users play a crucial role in inducing manufacturers to innovate by expressing not only user needs in clear terms but also solutions, including the design of products developed for their own use (von Hippel, 1978). Users provide solutions such as product concepts, design features, prototypes and blueprints to manufacturers for their needs (Bogers & West, 2012; Morrison et al., 2002; Urban & von Hippel, 1988). This provides manufacturers with ideas for developing new products (Cooper & Edgett, 2008). Hence, such users have been described as lead users, which are not passive receivers of technical information provided by manufacturers but play a crucial role in initiating manufacturers' innovations through the active articulation of their needs and by sharing technological information (Urban & von Hippel, 1988; von Hippel, 1986).

The literature on suppliers' early involvement in customer firms' innovation processes focuses on the enhancement of innovation-related outcomes, which include development time reductions, cost reductions, and quality improvements through an early and intensive interaction of customer firms and their suppliers (Petersen, Handfield, & Ragatz, 2003; Ragatz et al., 1997). Early supplier integration in new product development has been identified as a source of Japanese firms' superior competitiveness (Fujimoto, 1997; Liker & Choi, 2004) and subsequently has been introduced by many Western firms (Petersen et al., 2003; Ragatz et al., 1997; Wynstra & ten Pierick, 2000). Specifically, firms can improve their new product development performance by sharing technological information with suppliers at an early stage of development, building inter-organizational teams with suppliers, and increasing the technological knowledge of suppliers

(Petersen et al., 2003; Wagner, 2012). The importance of interactive learning between firms and their suppliers in product innovation is emphasized (Lundvall, 1988).

In summary, the user innovation and supplier integration concepts provide valuable cues for understanding how a firm may be induced by customers to change the role from selling established products to developing new products in close interaction with customers. Furthermore, these concepts consider supplier firms in general and not just their R&D organization. These concepts can also be applied to study the evolution and role change of suppliers' sales organizations. However, user innovation and supplier integration studies focus on the dyadic interaction between suppliers and customers only. They do not capture the interaction between MNEs' international subsidiaries and parent firms, which is crucial for understanding the evolution of subsidiaries.

2.3. Integrating the two perspectives into a single framework

Research on MNE subsidiary evolution and studies on user innovation and supplier integration both provide valuable theoretical lenses for understanding the role change of MNE subsidiaries due to their interaction with customer firms. However, both perspectives partially fall short of explaining the evolution of a MNE subsidiary from sales to innovation. Innovation-related subsidiary evolution literature assumes that MNE subsidiaries already have R&D resources and thus do not explain the evolution of sales subsidiaries towards innovation. User innovation and supplier integration perspectives treat suppliers as single organizational entities and do not differentiate between foreign sales subsidiary's and the parent firm's interaction with lead users. Therefore, both perspectives are combined in this study (Fig. 2).

This study examines the evolution of the sales subsidiary to innovation with a focus on technical information flow, which includes product specification, product concepts, and design features such as prototypes and blueprints. The traditional role of a sales subsidiary is a passive role that is not involved in the initiation and implementation process of R&D projects. The subsidiary's change towards an active role is different from the traditional role. This can be understood by introducing the perspective of user innovation and supplier's early involvement with customers. If we apply this perspective, sales subsidiaries can play an active role of passing on users' technical information to the R&D organization of the MNE parent firm, and thus acquire innovation capabilities.

3. Research method

3.1. Positivist single case study

We adopt the case study method by examining a single case (Yin, 1990, 2011). The single case study can be used when the case is critical for testing a theory, unique or extreme, or revelatory (Dubé & Paré, 2003; Yin, 1990), with a potential to provide evidence for scientific generalization (Pondy & Mitroff, 1979). As explained in the next section, we identified and selected an extreme case of subsidiary evolution for this study. It analyses a rare case of rapid MNE subsidiary evolution from a traditional, passive role to an active role of supporting innovation activities.

Following the dominant stream of case study research in business studies, we apply a positivist approach by adopting the perspective that pre-existing regularities can be discovered through the use of constructs that are devised by the researcher when studying theoretically unexpected phenomena (Darke, Shanks, & Broadbent, 1998; Dubé & Paré, 2003; Orlikowski & Baroudi, 1991), aiming at the development of propositions that

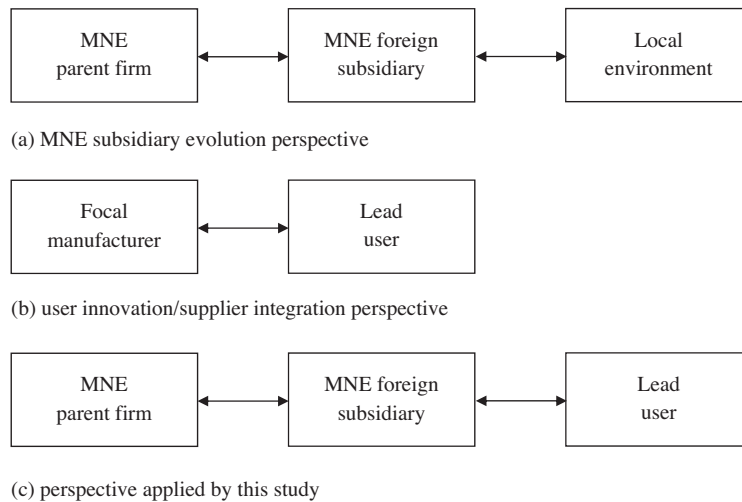


Fig. 2. Conceptual framework.

may be subsequently developed into testable theories and hypotheses (Eisenhardt, 1989). The positivist approach can be applied both for single case studies and multiple case studies (Dubé & Paré, 2003). This study aims at describing exploratory phenomena which can offer a potential basis for a theoretical model. With theoretical constructs being not available a priori, the focal empirical topics to be investigated were derived from the literature on MNE subsidiary roles and evolution, user innovation, and supplier integration. This study focused on interaction among the three main actors (the parent firm, the subsidiary and the customer firm) and the decision-making by the parent firm and the subsidiary in the process of subsidiary evolution. Our single case study aims to identify a pattern of role change that can form a potential basis for a theoretical model in the evolution of a sales subsidiary.

3.2. Case selection

The unit of analysis is the product group's sales organization of a subsidiary without R&D resources, while the MNE parent firm and MNE units in different host countries do have R&D resources. We selected the case in two stages. First, we distributed a questionnaire to all innovation-related foreign MNE subsidiaries in Korea in 2011. We received data from 126 subsidiaries. As a result, we identified six subsidiaries that assessed their technological capabilities as almost equivalent to their parent firms.

Second, we investigated the sources of these six subsidiaries' evolution through interviews with their representatives. We identified one of the firms as a unique case in which the evolution of the sales organization within the subsidiary occurred in the absence of any R&D organization. Therefore, we selected this subsidiary for an in-depth analysis to explain and understand their particular evolution process.

3.3. Data collection

Data on subsidiary evolution and relevant information were collected in a retrospective way. We collected information both from interviews and documents to avoid possible biases and omission of events by respondents and to triangulate our data (Yin, 1990). We asked respondents to provide quantitative data when possible and to reflect on events relevant to the role change that can be traced with the flow of technological information (Miller,

Cardinal, & Glick, 1997). Finally, we asked similar questions to multiple respondents on the same items of investigation (Cardinal, Sitkin, & Long, 2004).

In the design and implementation process, the data collection consisted of three stages. First, we conducted an unstructured interview with an executive on the history and characteristics of the evolution. Second, we developed an empirical definition of the evolution and designed structured interviews. The interviews were conducted with two executives and one middle manager, which reflect the defined evolution. Third, we conducted further interviews with executives and middle managers to ask about data sources discrepancies and to ask "why" and "how" the role change and acquisition of innovation capabilities occurred. Interviews were conducted with six middle managers and two executives between October 2011 and July 2013. Interview contents included the sequence of actions relevant to the project that enabled the subsidiary to support the parent firm's R&D, technical information flow between customer, subsidiary and parent firms, and details of the R&D activities as a developing component of the customer firm. Interviews were implemented on the basis of five checklist and survey questionnaires regarding the MNEs' R&D activities, role change, technical information flows, and decision-making of the parent firm and subsidiary. Specifically, we asked about the chronological sequence of events in the project that changed the subsidiary role. Each interview was conducted individually and in person.

Interviews were conducted three to four times with each interviewee. For two executives with complete experience of the evolution, in-depth interviews were carried out. Interviews lasted between one-half to two hours.

4. Case analysis

4.1. Introduction of 'B Korea'

B Company is a large multinational company with a revenue of 1.4 billion US\$ in 2013. It was established as a spinoff of a US semiconductor company in 1997. Its R&D organization is mostly centralized in the US headquarter, with two international R&D sites in China. B Company has manufacturing facilities in the US and Asia. In Asia, B Company has a production facility in Korea, and assembly and test facilities in China, Malaysia, and the Philippines.

B Company has six marketing divisions worldwide, including one in Korea, and 45 sales offices in 17 countries.

This case study focused on the mobile phone business of B Company's subsidiary in Korea, called 'B Korea'. B Korea has only a mobile phone business team within Korea's sales office. They do not have an R&D organization. The mobile phone business team consists of a sales force and field application engineers within Korea's sales office who focus on the business with mobile phone producers.

B Korea only sold a low voltage semiconductor for switching in 1999. B Korea did not have a mobile phone business department because they did not regard the mobile phone business as a big market.

The subsidiary's head in Korea decided to set up a mobile phone business team within the Korea sales office in 2006 without involvement by the parent firm. The decision was made to capture emerging market opportunities and to enhance technical service activities for the mobile phone business customer firms. The estimated mobile phone application market in 2006 was more than double the 2004 market. Korea's large mobile phone producers such as Samsung, LG and Pantech rapidly increased their global market shares. The rapid advancement of Korean firms in the global mobile phone industry may be regarded as typical for the aggressive global market penetration by Korean firms throughout the last decades. They provide representative examples of the entrepreneurial strategies pursued by *chaebols* – family-owned Korean business groups (Hemmert, 2012). Due to this growth of Korean MNEs, Korea gained much importance as a market for non-Korean MNEs in upstream industries, as Korean firms became important customers for them. Furthermore, the entry of foreign MNEs into Korea was also facilitated by the more positive attitude of the Korean government towards inward foreign direct investment after the Asian financial crisis of 1997 which severely affected Korea (Kwon, 2008).

4.2. Evolution of the sales subsidiary

B Korea underwent a substantive evolution from 2000 to 2012 in the mobile phone business. The mobile phone business team size within the Korea sales office of B Korea increased from one member in 2000 to five in 2012, while the R&D support increased from zero to ten staff members. The sales office acquired the R&D support role since 2007. The number of customer firms increased from one in 2000 to four in 2012. The sales volume increased 20-fold within this period. Table 1 provides details on the development of B Korea's mobile phone business.

Furthermore, we found in our interviews that B Korea underwent a substantial role change during this period. We assessed the role change in terms of B Korea's technical information flow with customer firms and the parent firm (B Company). Specifically, we used comprehensive checklists of various activities related to B Korea's internal and external technical information flow in our interviews. If an interviewee confirmed that a specific type of activity related to technical exchange occurred at B Korea, we further asked whether this information flow was unidirectional or bidirectional.

We found that in 2000, there existed only a unidirectional technical information flow between the parent firm, the subsidiary and customers. The flow of information from the parent firm to the subsidiary consisted of technical information on products which already had been developed by the parent firm. The subsidiary also passed on technical information of problems in using a product to the parent firm as part of its sales and marketing activities. In other words, the unidirectional flow of technical information was related to sales and marketing, but not to R&D.

In 2012, the flow of technical information turned into a bidirectional flow. Interviewees indicated that B Korea became involved with the identification of user needs, definition of specifications and product functions, and the support of product development processes. Specifically, it was agreed that "the subsidiary and parent firm met the needs of the customer firm and fix product features and specifications." This shows that the subsidiary, parent firm and customer firm mutually exchanged technical information. In addition, interviewees indicated that "subsidiary's mobile phone business team reviewed product specifications before releasing the new product" and "the subsidiary mobile phone business team updated key customer firms' manufacturing specifications regularly with the parent firm." Furthermore, the subsidiary's mobile phone business team shared new technology and market trend information with the parent firm. Interviewees also indicated that "Korean subsidiary and parent firm engineers participated in the customer's new project early and defined the features and specifications with the customer." These findings show that technical information flowed in both directions between the subsidiary, the parent firm and customer firms.

In addition, the subsidiary's mobile phone business team requested new product development to the parent firm, lobbied the parent firm to invest more resources for new product development (i.e., application engineers in the parent firm), and requested to secure intellectual property rights necessary for new product development. Thus, the subsidiary mobile phone team's mutual technical information flow with the parent firm and customers was no longer limited to sales and marketing activities. The team also became involved with R&D organization tasks such as fixing new product specifications and requesting the parent firm to develop a new product. This role is significantly different from the traditional passive role of a sales subsidiary with respect to R&D, and indicates that the subsidiary has acquired innovation capabilities.

In-depth interviews revealed that the subsidiary became involved with the coordination of the product design with the parent firm in order to reflect the results of discussions with customer firms over the design. The subsidiary also coordinated the time schedule of product development in the case of differences in the development schedule among the customer, subsidiary and parent firm.

The overall role change of the mobile phone business team in B Korea from a unidirectional to a bidirectional technical information flow and its extension from sales and marketing to R&D is shown in Table 2.

Table 1
Basic data of mobile phone business team in B Korea.

Year	Role	Number of customer firms	Sales	Number of products	Number of sales force	Number of R&D support staff
2000	sales	1	\$5M	282	1	0
2012	R&D, sales	4	\$119M	333	5	10

Table 2

Technical information flow of mobile phone business team in B Korea with parent firm (P) and customer firms (C).

Year	R&D function	Sales and marketing function
2000	P: none C: none	P: → C: →
2012	P: ↔ C: ↔	P: ↔ C: ↔

→: unidirectional information flow; ↔: bidirectional information flow.

4.3. Analysis of the evolution process

4.3.1. The pre-existing trade relationship between A Company and B Korea

B Korea maintained a trade relationship with A Company since 1998. B Korea has been delivering a commodity type product that was not developed for A Company. The product was a low priced electronic semiconductor component, highly competitive among many suppliers and with a low degree of quality differentiation. B Korea maintained a good business relationship with A Company due to the satisfactory performance in conforming to A Company's price reduction policy and stable operations management. B Korea has been delivering and offering technical services for the commodity type components to the mobile phone business unit of A Company.

4.3.2. Growth of Korea's mobile component market

Until the 1990s, the Korean mobile phone market was relatively small from a global perspective. In the 2000s, however, Korean firms emerged as global leaders in the mobile phone industry. The mobile phone market expanded dramatically between 2000 and 2012. In 2006, Samsung and LG ranked third and fifth, respectively, following first-ranked Nokia and second-ranked Motorola in the world mobile device market share in terms of unit sales. A Company recorded 50% annual growth rates between 2005 and 2007.

This rapid growth induced A Company to strengthen its technological competitiveness through the development of more advanced products. In responding to the changes of the environment, B Korea established a mobile phone business team within the field application team in 2006. As the sales of mobile phone components increased, the subsidiary realized a lack of knowledge about the mobile phone business. The team was established to offer better technical services to mobile phone firms in relation to commodity type standard components. However, the team later got involved with a new project of developing a customized component in close interaction with the customer.

4.3.3. Initiation of a new trade relationship between A Company and B Korea

All interviewees agreed that B Korea's role change was enabled by N project, which started as a project for developing N component for A Company at an early stage of A's development of a new mobile phone. The trade relationship between A Company and B Korea changed dramatically with N project. Previously, B Korea only sold products developed by the parent firm.

A Company asked B Korea to review whether it is possible to develop N component in 2007, partially due to B Korea's efforts. B Korea heard that A Company tried to develop a new component that incorporates switching technology. B Korea tried to deliver a possible concept for an application of the new component. A Company did not have deep knowledge about switching technology and tried to reduce the number of pins of the connector to make a slim and light mobile phone. The antennae, 24 pin connector and battery had been crucial barriers in reducing the thickness of the mobile phone. The company hoped to reduce the

24 pin to a 5 pin connector. The 5 pin connector component could be potentially developed by B Company's switching technology. However, there was no experience of developing a switching component specifically for a mobile phone. The 5 pin connector needed a new switching component because the connector had to recognize multiple devices in spite of a reduced number of pins.

In 2007, after hearing that A Company was developing a new mobile phone with a 5 pin connector, B Korea searched for information on possible concepts of the 5 pin connectors that incorporate switching technology. B Korea offered information related to possible concepts to A Company. This incident induced A Company to engage in further dialogue with B Korea over the N component development project.

N component was different from the standard components previously delivered to A Company in that N component was a customized semiconductor module that needed development work by the parent firm. However, B Company did not have experience in developing the module for a mobile phone, and proven competence for developing N component.

A Company hoped to find a supplier of N component in order to develop the 5 pin connector component semiconductor. A Company asked B Korea whether B Company could develop N component for two reasons. First, B Korea had a record of offering possible concepts of the new switching component, which was relevant to N component. This record rendered B Company as a possible candidate supplier. Second, A Company was keen to gain strong negotiating power over the prospective supplier. However, A Company could not gain strong negotiating power over other existing competitive suppliers because A Company had just emerged a few years ago as a major competitor on the world mobile phone market. Therefore, A Company invited B Company in spite of its inferior technological competence in comparison with other potential suppliers. For example, F Semiconductor Company had a record of delivering a semiconductor similar to N component for foreign mobile phone makers. M Semiconductor Company had the highest market share of the non-memory business. T Company was ranked second in application processors and third in non-memory semiconductors. For B Korea, competing with these companies was a big challenge because the call for development of the component was opened to all competitors.

A Company offered the development of N to B Korea, suggesting that B Company would be accepted as a supplier of N component on the condition that N component proved successful performance. A Company asked B Korea to develop a component by B Company in spite of its inferior competence and no proven record of developing any similar component. A Company had developed a new mobile phone and was not clear about the specifications and functions of the new component for the mobile phone. Consequently, A Company had to collaborate with a supplier over the new component's design. A Company studied the 5 pin connector and collaborated with B Korea in setting up the specifications for a 5 pin connector.

4.3.4. Involvement of B Company

At first, B Korea attempted to identify the specification of N component through collaborative work with A Company without B Company's involvement. The collaborative work was implemented by the field application team manager and two field application engineers of the mobile phone business field application team. Without seeking the permission of or support by B Company, B Korea started to establish rough specifications of the product. Although the development of technical specifications for a new product was beyond the normal work scope of the field application engineers, it was feasible to work on this task because all of the engineers had former experience carrying out R&D for mobile phone makers. Furthermore, N component was similar to that of

other advanced competitors. B Korea's field engineers could quickly understand N project by acquiring access to information from competitors. Based on this work, A Company finalized the rough specifications and invited ten firms to submit proposals to develop N component.

B Korea submitted a specific proposal through interaction with the customer. Over this process, technical information on product structure, interface components, and required product specifications and design features were shared between A Company and B Korea in a mutual flow of technical information. Over the process of clarifying the specifications of N component, B Korea now sought and received advice from B Company. This means that B Korea passed the technical information gained from the customer selectively to B Company in the process of receiving advice, and thereby got B Company involved in the project. Over the process of interaction between A Company and candidate suppliers, specifications and details of the functional lists were clarified and the number of candidate suppliers was reduced.

4.3.5. Conflict resolution between A Company and B Company

A Company wanted to finally select its own suppliers. Near the end of this stage of interaction, B Korea faced a problem. After A Company fixed the specifications of N component, A Company issued a call for a final proposal to develop N component. B Korea asked B Company whether B Company is willing to develop N component. B Company was not prepared for the project and initially rejected the proposal due to an excessively short time frame. B Korea asked B Company to deliver a sample of the product design in seven months. However, B Company needed nine months

because they were already busy with other scheduled development work. At B Company, the decision was made by the product marketer who prepared a new product road map according to the estimated revenue and future technology trends under consideration of human resources and budget constraints. Thus, a new product sales target for each region was prepared. Any change in the product development road map necessitated changing other product development projects and the marketing target. Therefore, unplanned product development required the approval of the product marketer and product line director. Consequently, the unplanned product development N project was difficult to accept.

B Korea coordinated the conflict solution between A Company and B Company. B Korea persuaded B Company to adjust their schedule. In view of the importance of its future business with Korean mobile phone makers, B Company decided to shorten their schedule to eight months by cancelling the holiday break schedule and other similar measures. B Korea and A Company fixed the formal sample delivery schedule to seven months. However, B Korea asked A Company to tolerate a one month delay because B Korea knew that A Company had a practice of accepting one month sample delivery delays from previous trading experiences. Finally, B Korea was selected as one of three suppliers of N component.

Once the project was accepted, development work was implemented. B Korea took the role of transferring technical information between B Company and A Company. B Korea conveyed Company A's feedback on the product in development and reviewed the specifications before releasing the new product. B Korea regularly examined manufacturing specifications with B Company. Out of the selected three suppliers, B Company remained

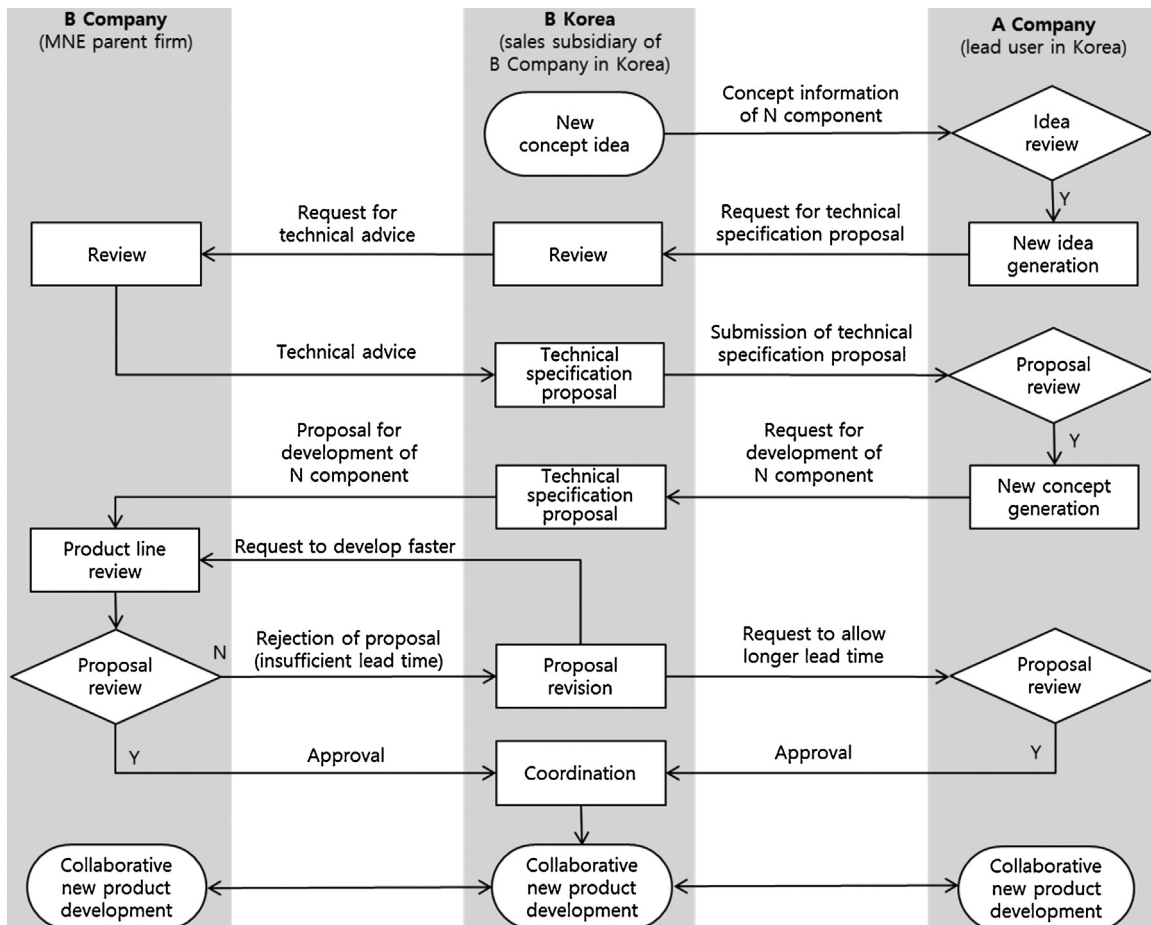


Fig. 3. Interaction sequence between lead user, MNE subsidiary and MNE parent firm.

as the only company that successfully manufactured and delivered N component to A Company.

4.3.6. Role change after N project

N project was successfully finalized and B Company became the first vendor of A Company. Subsequently, B Company expanded business in the mobile device component market due to A Company's success in the world market. After N project, the subsidiary assumed the role of new product planning such as determining the requirements of products to be developed through contacting customers. The subsidiary also adjusted the development schedule and called for securing intellectual property necessary for developing a new product. According to the interviews with the executives, B Korea attained an exceptional position among the subsidiaries of B Company. Most requested details for development of new products by B Korea were accepted. This is very exceptional as in general, B Company does not rely on sales subsidiaries in new product development.

Fig. 3 shows the overall sequence of events in the interaction between A Company, B Korea and B Company which induced the role change of B Korea.

5. Propositions and theoretical implications

Based on the case study's findings, we developed exploratory propositions that may serve as a basis for subsequent theory extensions on MNE subsidiary evolution. We categorize our propositions into three types: subsidiary-related, market-related and event-related.

5.1. Subsidiary-related propositions

First, we found that a sales subsidiary can support the parent firm's R&D by mutually exchanging technical information with the customer and parent firm. While recent studies on dual embeddedness have shown that knowledge-intensive linkages both with parent firms and with local organizations enhance the innovation performance of MNE production and R&D subsidiaries (Achcaoucaou et al., 2014; Figueirodo, 2011), we found in our case study that beyond this dual embeddedness in general, the transfer of technical information from the customer to the parent firm and vice versa specifically enabled a sales subsidiary to achieve a role change towards active innovation support. Through its boundary spanning activities, the sales subsidiary became a gatekeeper between customer and parent firm (Tushman, 1977) and acquired innovation capabilities. Thus,

Proposition 1. Evolution of the MNE sales subsidiary from a passive to active role in supporting innovation occurs when it mutually exchanges technical information with the parent firm and customer firm.

Second, the sales subsidiary's superior knowledge when mutually exchanging technical information with the customer and parent firms has been found necessary for effective collaboration. The sales subsidiary had superior knowledge over the parent firm regarding customer needs and knowledge on coordinating the business relationship with the customer through the pre-existing long-term trade relationship. If the parent firm had superior knowledge over the subsidiary firm (i.e., customer needs and knowledge on coordinating business relationship with the customer), it had no reason to interact with the subsidiary firm. The subsidiary is likely to have superior knowledge due to the long-term trade relationship with the customer in the host country of the subsidiary. Andersson et al. (2002) argue for a higher possibility of new product development by a subsidiary through technological collaboration when the subsidiary has a long-term

trade relationship with the customer. The results of this study indicate that a sales subsidiary with advanced understanding of customer needs and knowledge from a long-term business experience with the customer is likely to engage in some part of activities of developing a product for the customer through technological collaboration. Thus,

Proposition 2. Evolution of the MNE sales subsidiary from a passive to active role in supporting innovation occurs when the sales subsidiary has superior knowledge of customer needs over the parent firm through a long-term trade relationship with the customer.

Third, we found that the evolution of the sales subsidiary from a traditional and passive role to an active role in supporting the R&D of the parent firm is initiated by a subsidiary driven project for developing a product for customer firms. The subsidiary initiative we have observed in our case study appears to fall into the 'local market initiative' category within the taxonomy of subsidiary initiatives proposed by Birkinshaw (1997) when focusing on the interaction with the customer only. However, proactive internal communication with the parent firm was equally important for the subsidiary's role change. Thus,

Proposition 3. Evolution of the MNE sales subsidiary from a passive to active role in supporting innovation occurs when a new product development project is initiated by the subsidiary.

5.2. Market-related propositions

Our case analysis suggests that the evolution of the subsidiary occurs when the host country of the subsidiary is a global leading market with important lead users as customers. While a conventional lead user analysis entails a manufacturer's active engagement with lead users to secure new product ideas (Cooper & Edgett, 2008; von Hippel, 1986), the situation observed in our case is different, as it is the manufacturer's sales subsidiary and not its parent firm which engages with lead users to seek solutions for their needs. As the sales subsidiary initially has no innovation capabilities, however, the participation of the parent firm is still necessary to address the lead users' needs. We found that the location of the sales subsidiary in a global leading market with important customers was a crucial condition for triggering the timely product development by the parent firm. If the host country market is not very advanced and there are no global lead users, the parent firm has little incentive to develop a specific product for the customer. Thus,

Proposition 4. Evolution of the MNE sales subsidiary from a passive to active role in supporting innovation occurs when the subsidiary is located in a global leading market with important lead users.

Additionally, we found that the evolution of the sales subsidiary was critically enabled by the latent R&D capabilities of the field application engineers. Without the engineers' latent capabilities, a role change was not possible, as the sales subsidiary did not have any other R&D resources. These capabilities have accumulated through the engineers' prior work experience and were not required for the assigned work in the subsidiary. However, prior work experience could be activated and leveraged when interacting with the customer firm and subsequently the parent firm. While the field engineers were affiliated with the sales subsidiary at the time of the role change, they acquired latent capabilities through previous work experience with other companies in the competitive Korean microelectronics industry. The intensive competition and interaction between various leading companies

has been identified as an important feature of global lead markets (Beise, 2004). Therefore,

Proposition 5. Evolution of the MNE sales subsidiary from a passive to active role in supporting innovation occurs when staff members have acquired latent R&D capabilities in a competitive lead market that can be activated in technical exchange with the customer.

5.3. Event-related proposition

Finally, we found that the evolution of the sales subsidiary occurred gradually as a successful outcome of an initial project initiated by the subsidiary and the subsequent outcome to deliver a new product requested by the customer through interaction between the customer, subsidiary and parent firm, rather than the outcome of strategic planning at the parent or subsidiary firm. The parent firm did not have a vision or a strategy of the mobile phone business and did not have a mobile phone business-related organization. Therefore, it did not initiate the role change of the subsidiary as a strategic planning decision. Furthermore, the subsidiary could not have planned the role change, as it did not have autonomy for such a strategic decision. B Korea did not set up an explicit strategy for assuming the role to support R&D activities of the parent firm before N project started. Instead, B Korea's role change and evolution was the result of a gradual experimental process that was not formally approved by B Company. The evolution process advanced on the basis of a stepwise approach with stepwise success. Thus, our findings suggest that the subsidiaries' role change emerged in an unforeseen manner (Mintzberg, 1987) and was not the result of rational strategic planning (Ansoff, 1965). Therefore,

Proposition 6. Evolution of the MNE sales subsidiary from a passive to active role in supporting innovation only occurs gradually through interaction between customer, subsidiary and parent firm.

5.4. Synthesis and theoretical implications

We found that a combination of subsidiary-related, market-related, and event-related factors enabled the evolution of the sales subsidiary to active innovation support. The subsidiary's initiative, superior knowledge about customer needs, and mutual exchange of technical information with the customer and parent firms were identified as important antecedents of the subsidiary's evolution. However, these factors co-evolved with other conditions that were not under the subsidiary's control. Specifically, the subsidiary was located in a global lead market with major lead users. The intensive competition and exchange between companies in the lead market resulted in latent R&D capabilities of the subsidiary's field engineers, which could identify and address technological customer needs and thus initiate the exchange with MNE-internal R&D units. Finally, we found that the evolution was not triggered by a strategic planning process (Ansoff, 1965) at the parent firm or sales subsidiary. Instead, the evolution occurred in a trial-and-error process (Mintzberg, 1987; Whittington, 1994) due to the subsidiary's efforts to address customer needs.

Our analysis thus suggests that none of the six factors we have identified was sufficient per se to enable the role change of the sales subsidiary. In contrast, the combination of all of them triggered the role change. However, we also found that while some of the six conditions are strictly necessary for the role change, others are not. Specifically, the role change could not have taken place without mutual exchange of technical information with the parent and customer firms or the subsidiary's superior knowledge

regarding customer needs. In a similar vein, it is difficult to imagine the role change without the location of the subsidiary in a global lead market, which heightened the MNE parent firms' attention to the subsidiary's initiative, or the help of the latent capabilities of the subsidiary's staff members. Conversely, some other factors we have identified, while also clearly facilitating the role change in our case study, do not appear to be strictly necessary to enable it. Specifically, while a subsidiary initiative to address local customer needs and a gradual interaction between customer, subsidiary and parent firm certainly helped the subsidiary with taking an active role and acquiring innovation capabilities, the role change could also have been enabled by an initiative by the parent firm and could have been based on a strategic planning decision. While no decision by the parent firm to change the role of the subsidiary based on a strategic planning process was made in the case of the firm we studied, it could be made in other MNEs.

In summary, our study has identified (1) mutual exchange of technical information with the customer and parent firms, (2) the subsidiary's superior knowledge about customer needs, (3) its location in a globally leading market and (4) the subsidiary's staff members' latent R&D capabilities as necessary conditions, and (1) the subsidiary initiative and (2) a gradual interaction process between customer, subsidiary and parent firm as supporting, non-necessary conditions for the role change.

Three theoretical implications can be derived from our findings. First, our analysis has shown that a MNE sales subsidiary without R&D resources may play an important role in the global innovation activities of the MNE when various conditions are met. The subsidiary initiated a major development project in the absence of any commitment from the parent firm and of any R&D resources while engaging in mutual technical information flow with the customer and parent firm. Our findings contrast with the existing literature, which considers this kind of mutual exchange only in subsidiaries with advanced R&D capabilities (e.g., Kuemmerle, 1999; Phene & Almeida, 2008). Thus, sales subsidiaries should be considered when analyzing the global innovation activities of MNEs.

Second, multiple theoretical perspectives should be combined to analyze and explain major role changes of MNE subsidiaries. The subsidiary evolution perspective is instrumental in understanding how MNE subsidiaries may play an active role through local initiatives, which can result in a positive role change. However, the lead user and supplier integration perspective helps to explain the close technical interaction between the lead user and MNE subsidiary, which works to address the customer's needs. However, neither of the perspectives allows a full understanding of the overall conditions or the process under which the role change and evolution has evolved. The overall picture only evolves when both perspectives are combined.

Third, our findings suggest that the evolution of MNE subsidiaries may result from trial-and-error processes in addressing customer needs and not necessarily from strategic planning processes. This finding is remarkable because subsidiary initiative research has emphasized that subsidiary evolution is the result of the interplay of strategic actions taken by subsidiaries and MNE parent firms (e.g., Ambos et al., 2010; Birkinshaw & Hood, 1998). Our study indicates that Mintzberg's (1987) 'emergent strategies' perspective deserves more attention when studying the evolution and role changes of MNE subsidiaries.

6. Contributions, limitations and managerial implications

This study contributes to the literature on MNE subsidiary evolution by offering an in-depth case analysis of a sales subsidiary. We reveal that the role change and acquisition of innovation capabilities by the subsidiary were initiated by a subsidiary-driven

project to develop a product for a customer. The project resulted in the subsidiary's involvement with the customer firms' new product development at an early stage, triggering mutual exchange of technical information between the customer and subsidiary, and the subsidiary and parent firm. The evolution process was examined from the perspective of the technology information flow in a customer-subsidiary-parent firm network from unidirectional to bidirectional flow. Future research on MNE subsidiary evolution should give more consideration to sales subsidiaries and 'emergent' strategies, and combine different theoretical perspectives.

Our study is based on the analysis of a single case, which is an important limitation. Following Yin's (1990) recommendations, we conducted a single case study to shed light and provide new explanations on an extreme situation. However, our approach also implies that our findings are preliminary and need to be verified by further empirical research in order to clarify whether the results are context-specific or can be observed broadly in the evolution of MNE sales subsidiaries.

From a managerial perspective, MNEs should recognize the importance of managing the evolution of their international sales subsidiaries. Such subsidiaries may discover a market opportunity that can only be captured by the development work of the parent firm. When the parent firm is not interested in developing the product requested by the subsidiary or is slow to respond to the local subsidiary's request, the MNE may lose the opportunity to capture the market. Potential role changes of sales subsidiaries and the acquisition of innovation capabilities occur in global leading markets with important lead users and fast product development cycles. MNE parent firms should be responsive when sales subsidiaries request new product developments to capture business opportunities in such markets.

Specifically, this study's case could be found in the semiconductor industry, where B2B business is prospering, closely interacting with the mobile phone industry as a user industry with fast product and technical change. This rapid change induces mobile phone industry customer firms to collaborate with semiconductor firms to seek new technical solutions for new product development. The semiconductor firm's headquarter R&D team, being tied up with its mid- and long-term plan, is likely to be slow to respond to customer requests. As a result, MNE subsidiaries in lead markets with important customers may have to persuade the headquarter R&D team to respond more swiftly to customer requests for developing semiconductors. In order to be able to persuade the headquarter R&D team, the subsidiary has to be deeply involved in exchanging technical information to explore the technical and market feasibility of the newly requested product. In summary, the type of situation we found in our case study is likely to occur in MNEs which are engaged in global B2B industries with customer industries that have fast product development cycles. Such industries play an important role in global business at large, suggesting that our study is highly relevant for the evolution of many sales subsidiaries within MNEs.

Acknowledgements

The authors thank anonymous reviewers, Felix Reimann and Yongsam Kang for their helpful information, comments and suggestions. This research was partially supported by a Korea University Business School IBRE grant.

References

Achcaoucaou, F., Miravittles, P., & León-Darder, F. (2014). Knowledge sharing and subsidiary R&D mandate development: a matter of dual embeddedness. *International Business Review*, 23(1), 76–90.

- Ambos, T. C., Ambos, B., & Schlegelmilch, B. B. (2006). Learning from foreign subsidiaries: an empirical investigation of headquarters' benefits from reverse knowledge transfers. *International Business Review*, 15(3), 294–312.
- Ambos, T. C., Andersson, U., & Birkinshaw, J. (2010). What are the consequences of initiative-taking in multinational subsidiaries? *Journal of International Business Studies*, 41(7), 1099–1118.
- Andersson, U., Forsgren, M., & Holm, U. (2002). The strategic impact of external networks: subsidiary performance and competence development in the multinational corporation. *Strategic Management Journal*, 23(11), 979–997.
- Ansoff, I. (1965). The firm of the future. *Harvard Business Review*, 43(5), 162–178.
- Asmus, D., & Griffin, J. (1993). Harnessing the power of your suppliers. *McKinsey Quarterly*, 3, 63–79.
- Bartlett, C. A., & Ghoshal, S. (1986). Tap your subsidiaries for global reach. *Harvard Business Review*, 64(6), 87–94.
- Bartlett, C. A., & Ghoshal, S. (1989). Managing across borders: the transnational solution. Boston: Harvard Business School Press.
- Beise, M. (2004). Lead markets: country-specific drivers of the global diffusion of innovations. *Research Policy*, 33(6/7), 997–1018.
- Birkinshaw, J., & Hood, N. (1998). Multinational subsidiary evolution: capability and charter change in foreign-owned subsidiary companies. *Academy of Management Review*, 23(4), 773–795.
- Birkinshaw, J., Hood, N., & Young, S. (2005). Subsidiary entrepreneurship, internal and external competitive forces, and subsidiary performance. *International Business Review*, 14(2), 227–248.
- Birkinshaw, J. (1997). Entrepreneurship in multinational corporations: the characteristics of subsidiary initiatives. *Strategic Management Journal*, 18(3), 207–229.
- Birkinshaw, J. M. (1998). Foreign owned subsidiaries and regional development: the case of Sweden. In J. Birkinshaw, & N. Hood (Eds.), *Multinational corporate evolution and subsidiary development* (pp. 268–298). London: Macmillan.
- Bogers, M., & West, J. (2012). Managing distributed innovation: strategic utilization of open and user innovation. *Creativity and Innovation Management*, 21(1), 61–75.
- Cantwell, J. A., & Mudambi, R. (2005). MNE competence-creating subsidiary mandates. *Strategic Management Journal*, 26(12), 1109–1128.
- Cantwell, J. A. (1987). The reorganisation of European industries after integration: selected evidence on the role of transnational enterprise activities. *Journal of Common Market Studies*, 26(2), 127–151.
- Cantwell, J. A. (1994). Introduction. In J. A. Cantwell (Ed.), *Transnational corporations and innovative activities* (pp. 1–32). London: Routledge.
- Cardinal, L. B., Sitkin, S. B., & Long, C. P. (2004). Balancing and rebalancing in the creation and evolution of organizational control. *Organization Science*, 15(4), 411–431.
- Collinson, S. C., & Wang, R. (2012). The evolution of capability in multinational enterprise subsidiary: dual network embeddedness and the divergence of subsidiary specialisation in Taiwan. *Research Policy*, 41(9), 1501–1518.
- Cooper, R. G., & Edgett, S. (2008). Ideation for product innovation: what are the best methods? *PDMA Visions Magazine*, 1(1), 12–17.
- Darke, P., Shanks, G., & Broadbent, M. (1998). Successfully completing case study research: combining rigour, relevance and pragmatism. *Information Systems Journal*, 8(4), 273–289.
- Delany, E. (2000). Strategic development of the multinational subsidiary through subsidiary initiative-taking. *Long Range Planning*, 33(2), 220–244.
- Doz, Y. (1986). *Strategic management in multinational companies*. Oxford: Pergamon Press.
- Dubé, L., & Paré, G. (2003). Rigor in information systems positivist case research: current practices, trends, and recommendations. *MIS Quarterly*, 27(4), 597–636.
- Dunning, J. H. (1995). Reappraising the eclectic paradigm in an age of alliance capitalism. *Journal of International Business Studies*, 26(3), 461–491.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532–550.
- Figueiredo, P. N. (2011). The role of dual embeddedness in the innovative performance of MNE subsidiaries: evidence from Brazil. *Journal of Management Studies*, 48(2), 417–440.
- Frost, T. S., Birkinshaw, J. M., & Ensign, P. C. (2002). Centers of excellence in multinational corporations. *Strategic Management Journal*, 23(11), 997–1018.
- Fujimoto, T. (1997). *The evolution of a manufacturing system at Toyota*. New York: Oxford: University Press.
- Ghoshal, S., & Bartlett, C. A. (1990). The multinational corporation as an interorganizational network. *Academy of Management Review*, 15(4), 603–625.
- Hedlund, G. (1986). The hypermodern MNE: a heterarchy? *Human Resource Management*, 25(1), 9–36.
- Hemmert, M. (2012). *Tiger management: Korean companies on world markets*. London and New York: Routledge.
- Holm, U., & Pedersen, T. (2000). *The emergence and impact of MNE centres of excellence: a subsidiary perspective*. London: Macmillan.
- Kuemmerle, W. (1999). Foreign direct investment in industrial research in the pharmaceutical and electronics industries—results from a survey of multinational firms. *Research Policy*, 28(2/3), 179–193.
- Kwon, O. Y. (2008). *International business in Korea: the evolution of the market in the globalization era*. Cheltenham: Edward Elgar.
- Liker, J. K., & Choi, T. Y. (2004). Building deep supplier relationships. *Harvard Business Review*, 82(6), 2–10.
- Lundvall, B. (1988). Innovation as interactive process: from user-producer interaction to the national system of innovation. In G. Dosi, C. Freeman, R.

- Nelson, G. Silverberg, & L. Soete (Eds.), *Technical change and economic theory* (pp. 340–369). London: Pinter.
- Meyer, K. E., Mudambi, R., & Narula, R. (2011). Multinational enterprises and local contexts: the opportunities and challenges of multiple embeddedness. *Journal of Management Studies*, 48(2), 235–252.
- Miller, C. C., Cardinal, L. B., & Glick, W. H. (1997). Retrospective reports in organizational research: a reexamination of recent evidence. *Academy of Management Journal*, 40(1), 189–204.
- Mintzberg, H. (1987). Crafting strategy. *Harvard Business Review*, 65(4), 66–75.
- Morrison, P. D., Roberts, J. H., & von Hippel, E. (2002). Determinants of user innovation and innovation sharing in a local market. *Management Science*, 46(12), 1513–1527.
- Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in organizations: research approaches and assumptions. *Information Systems Research*, 2(1), 1–28.
- Petersen, K. J., Handfield, R. B., & Ragatz, G. L. (2003). A model of supplier integration into new product development. *Journal of Product Innovation Management*, 20(4), 284–299.
- Phene, A., & Almeida, P. (2008). Innovation in multinational subsidiaries: the role of knowledge assimilation and subsidiary capabilities. *Journal of International Business Studies*, 39(5), 901–919.
- Pondy, L. R., & Mitroff, I. I. (1979). Beyond open system models of organization. In B. M. Staw (Ed.), *Research in organizational behavior* (pp. 3–29). Greenwich, CT: Jai Press.
- Ragatz, G. L., Handfield, R. B., & Scannell, T. V. (1997). Success factors for integrating suppliers into new product development. *Journal of Product Innovation Management*, 14(3), 190–202.
- Schmid, S., Dzedek, L. R., & Lehrer, M. (2014). From rocking the boat to wagging the dog: a literature review of subsidiary initiative research and integrative framework. *Journal of International Management*, 20(2), 201–218.
- Sherman, J. D., Souder, W. E., & Jenssen, S. A. (2000). Differential effects of the primary forms of cross functional integration on product development cycle time. *Journal of Product Innovation Management*, 17(4), 257–267.
- Strutzenberger, A., & Ambos, T. C. (2014). Unravelling the subsidiary initiative process: a multilevel approach. *International Journal of Management Reviews*, 16(3), 314–339.
- Tushman, M. L. (1977). Special boundary roles in the innovation process. *Administrative Science Quarterly*, 22(4), 587–605.
- Urban, G. L., & von Hippel, E. (1988). Lead user analyses for the development of new industrial products. *Management Science*, 34(5), 569–582.
- von Hippel, E. (1978). A customer-active paradigm for industrial product idea generation. *Research Policy*, 7(3), 240–266.
- von Hippel, E. (1986). Lead users: a source of novel product concepts. *Management Science*, 32(7), 791–805.
- Wagner, S. M. (2012). Tapping supplier innovation. *Journal of Supply Chain Management*, 48(2), 37–52.
- Whittington, R. (1994). *What is strategy-and does it matter?* London: Routledge.
- Wynstra, F., & ten Pierick, E. (2000). Managing supplier involvement in new product development: a portfolio approach. *European Journal of Purchasing and Supply Management*, 6(1), 49–57.
- Yin, R. K. (1990). *Case study research: design and methods*. Applied social research methods series, 5, Newbury Park, CA: Sage.
- Yin, R. K. (2011). *Applications of case study research*. Newbury Park, CA: Sage.