

DEVELOPMENT OF OFFSHORE OPERATIONS CAPABILITIES: A MULTI-CASE STUDY

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Abstract: The main objective of this study is to understand how companies develop capability to manage and implement offshore operations. Even though offshore operations is not a new subject – it has been practiced by companies for a long time, and is a growing operations practice employed by companies worldwide – academic efforts are still needed to achieve a full understanding of this phenomenon. One of those efforts is the comprehension of the strategic aspects of offshore. Offshore has implications for the strategic management field because it can instigate a firm to develop new capabilities and resources. In addition, companies have also moved high skill and core business activities overseas, requiring implementation of new organizational measures. For instance, literature has suggested that capabilities development is important to undertake more complex offshore processes and to overcome managerial challenges and implementation barriers. Thus, this study integrates Dynamic Capabilities as a main theory lens and offshore operations as organizational context. More specifically, this study takes Dynamic Capabilities as the “firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” (Teece, Pisano, & Shuen, 1997, p. 516). This concept emphasizes Dynamic Capabilities (DC) as a set of organizational processes, which result in the development of specific capabilities in order to fit with environmental conditions. This study also takes offshore operations as “the movement or relocation of domestic firm activities and operations abroad” (Bunyaratavej, Hahn, & Doh, 2008, p.227). Thus, the study offers a twofold contribution to the field. First, it explores how companies develop capability to manage offshore operations. Second, it explores the role of three dynamic capabilities elements (paths, positions, and processes) in the development of such capabilities. In order to achieve its objectives, eight case studies with manufacturing companies that have implemented captive offshore operations were carried out. The qualitative data were collected through semi-structured interviews. The interview protocol was developed to cover elements related to dynamic capabilities and offshore based on a literature review. Using theory building through case studies, it was possible to obtain research outcomes such as types of offshore operations implemented by the companies; strategic roles of offshore operations; barriers to implement offshore operations; coordination mechanisms, resources, and capabilities developed by companies to implement offshore operations; and the role of dynamic capabilities elements (paths, positions, processes, and firm-specific DC processes) on the development of capability to manage and implement offshore operations. We also suggest propositions and an integrated model. Finally, this study contributes to practitioners by suggesting methods used by companies that have been developing capability to manage offshore operations.

Introduction

Offshore is a growing operations practice worldwide. Over the last decade, companies have moved manufacturing operations abroad, primarily from developed to developing countries. This movement can be considered a strategy formulated in response to the increasing competitiveness of global markets. In recent years, companies have also moved services, high-skill, and core business activities overseas. This shift in offshore to more complex operations may require the creation and implementation of new organizational practices that have implications for various organizational issues (Duke CIBER/Booz Allen Hamilton Inc., 2007), among those is the necessity to develop new resources and capabilities (Doh, 2005). Although offshore has been practiced by companies for a long time (Hagell III & Brown, 2005; Lewin & Peeters, 2006a; Niederman, 2005; Stringfellow, Teagarden, & Nie, 2008), academic efforts are needed to achieve a full understanding of this phenomenon.

The literature has suggested that capabilities development is important when undertaking more complex offshore processes such as product development (Manning, Massini, & Lewin, 2008), and overcoming difficulties created by temporal and spatial distance between locally dispersed work teams (Levina, 2007; Levina & Vaast, 2008). However, there is a lack of studies clarifying how companies develop capability to manage and implement offshore operations. Focusing on managerial and firm capabilities, the dynamic capabilities (DC) approach can be a useful perspective for examining how companies develop unique capabilities in offshore (Doh, 2005). DC is also suggested as a means to understand the development of capabilities in open economies organizational practices, such as innovation, outsourcing, and offshore (Teece, 2007). However, there is a lack of researching addressing how companies develop capabilities by DC.

Clarifying how DC works on the development of capability is central to advancements of DC theory. Based on these arguments, our research question is: How do companies develop capability to manage and implement offshore operations? Or, in other words, this study aims to explore how companies develop capability to manage and implement offshore operations. In order to address our proposal, we integrate DC as a main theory lens and offshore operations as organizational context. More specifically, this study defines DC as “a firm’s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments” (Teece, Pisano, & Shuen, 1997, p. 516). Such a concept emphasizes DC as a set of elements that result in the development of specific resources and capabilities to fit environmental conditions.

We operationalized our study by multi-case study method. Our research is characterized as a qualitative and descriptive study, analyzing data from eight manufacturing companies. This study is organized as follows. In the next section we present a theoretical background on offshore operations and DC. In Section 3 we describe the methodological procedure adopted. In Section 4 we present the results. We conclude with discussion and conclusion, as well as implications for researchers and managers, limitations, and future research directions.

2. Theoretical background

In accordance with the intention of this study, the theoretical review will address the following topics: Dynamic Capabilities and offshore operations.

2.1 Dynamic Capabilities

Makadok (2001) highlights two approaches in the literature of the strategy field: resource-picking and capability-building. According to the same author, these two approaches aim at understanding how managers generate economic rents for their businesses. The first approach is linked to the RBV and highlights businesses obtain performance through different

resources in relation to competitors. The second approach is linked to DC and emphasizes how firms derive superior performance in relation to competitors through development of resources (Makadok, 2001). The main issue in this second approach is the relationship between the development of new capabilities and the organizational performance (Sapienza, Autio, George, & Zahra, 2006). The DC perspective has emerged from the RBV's unclear response as to how firms achieve competitive advantage in a dynamic or changing environmental context (Wang & Ahmed, 2007; Ambronisi & Bowman, 2009).

In other words, the DC perspective extends the RBV argument by introducing evolutionary arguments (Wang & Ahmed, 2007; Oliver & Holzinger, 2008), addressing how resources can be created and how the current stock of resources can be refreshed in changing environments (Verity, 2005; Ambrosini & Bowman, 2009), and focusing on a company's ability to reconfigure its routines to respond to changed environment (Doving & Gooderham, 2008; Green, Larson & Kao, 2008); it also regards the effect of market dynamism (Eisenhardt & Martin, 2000), and coevolution of learning mechanisms (Zollo & Winter, 2002).

Because it alters sets of resources and capabilities, and then affects performance, DC is more than a just addition to RBV (Zott, 2003). In sum, it considers two main additional aspects, the shifting character of the environment and the key role of strategic management (Teece, Pisano & Shuen, 1997; Cavusgil, Seggie & Talay, 2007; Lillis & Lane, 2007). DC perspective also confronts the Five Forces perspective; for instance, environment is not seen just industry by industry, but rather it is seen as a whole business ecosystem (Teece, 2007). Indeed, DC as an organizational process may embed the exploration/exploitation logic, in which environmental requirements are realized by a company and sets of resources and capabilities are configured to deal with these requirements.

Dynamic Capability theory emerged, joining theoretical approaches on the exploitation and development of internal and external firm-specific capabilities (e.g. Penrose, 1959; Teece, 1986; and Wenerfelt, 1984) and others which have emphasized how some organizations respond to shifts in the business environment through development of firm-specific capabilities and how they renew competences (e.g. Iansiti & Clark, 1995, Henderson, 1994) (Teece & Pisano, 2004). Studies that pointed out new kinds of organizational capabilities also offered great contributions to the emergence of DC (e.g. Leonard-Barton, 1992; Collis, 1994). Thus, DC theory has started to recognize the role of exploitation of the set of organizational resources and capabilities and the role of exploration of new ones (e.g. combination, integration, renewal).

The DC perspective includes the "Schumpeterian" evolutionary vision of competition among firms. For this reason, the differences among firms are generated by new combinations of resources and capabilities, developed by firms throughout their trajectory (Teece, Pisano & Shuen, 1997). Indeed, DC perspective complements Schumpeter's arguments by stressing the role of internal company's process on creation of new capabilities/resources combinations that are essential to competition. Moreover, a company's process are shaped and limited by its trajectory (Teece & Pisano, 1994). The DC perspective is differentiated from other competitive advantage approaches (e.g. the competitive five forces, the RBV, the strategic conflict approach) due to its potentiality to address the role of management in achieving competitive advantage in high demanding environments (Teece, Pisano, & Shuen, 1997).

As can be seen, it is not enough for a company to accumulate resources, but rather DC perspective emphasizes two main elements of development of new ways of competitive advantage: the dynamic and the capability. The term "dynamic" refers to shifting character of the environment that requires strategic responses (e.g. renew competences), and the term "capability" refers to role of strategic management to deal with changing environment requirements through adapting the company internally (e.g. adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional

competences) (Teece, Pisano, & Shuen, 1997; Teece & Pisano, 2004). For this reason, the main argument is the ability of the organization to develop high-level capabilities through its trajectory, leveraging and/or sustaining the superior performance (Helfat & Peteraf, 2003; Marcus & Anderson, 2006; Harreld, O'Reilly III, & Tushman, 2007), rather than only the possession of distinctive resources.

Dynamic capability, in turn, is the ability of the firm to build, integrate, or reconfigure operational capabilities, not directly resulting in increased profitability, but also significantly affecting the performance of the operational capabilities of the firm (Helfat & Peteraf, 2003). Resources are the foundations, or, in other words, the starting-points of the chain. Capabilities represent the company's ability to deploy resources in order to achieve a specific goal. Core capabilities refer to sets of resources and capabilities, which have a central contribution to competitive advantage at specific time. And finally, DCs represent the continuous management of resources, capabilities, and core capabilities (e.g. renewal), fundamentally to deal with environmental changes and sustain competitive advantage (Wang & Ahmed, 2007). Thus, operational capabilities, or only capabilities, allow companies to perform current activities. Moreover, the DC involves change, which may engage resources, capabilities, and even business models (Helfat *et al.*, 2007).

Thus, one can figure out DC primarily works on companies' sets of resources and capabilities. Afterward, companies become more able to deal with environmental/market requirements. In the end, companies increase their competitive position and competitiveness. Based on those previous studies, we propose the following definition: *DC is a set of processes, which are stimulated by internal and external requirements, affecting companies' collection of resources and capabilities, in order to deal with organization needs (e.g. environmental requirement, strategy implementation, exploit an opportunity).*

We utilize mainly a DC approach based on studies by Teece, Pisano, and Shuen (1997) and Teece and Pisano (2004). The three specific aspects of DC are elements, firm-specific processes, and outcomes. DC elements are common features; in other words, any company should present these aspects embedded in DC (e.g. Wang & Ahmed, 2007). The three DC elements help to determine a company's DC and distinctive competence as follows: (1) organizational processes, which entail the organizational and managerial routines of current practice and learning; (2) positions, which refers to a company's current endowment of technology and intellectual property and its relationships with customers, suppliers, and strategic alliances; and (3) paths, which refers to the strategic alternatives and opportunities available to the company.

We consider firm-specific processes of DC that entail reconfiguration, leveraging, and learning. These processes may vary among companies because they are developed over time (Wang & Ahmed, 2007). In other words, they are path dependent. Reconfiguration is the recombination of resources and capabilities to fit with changing requirements (Ambrosini & Bowman, 2009; Eisenhardt & Martin, 2000; Menon, 2008). Leveraging is the replication of a process or systems to another business unit (Ambrosini & Bowman, 2009). Learning is the creation and regeneration of new knowledge that allows a task to be performed (Ambrosini & Bowman, 2009). We also consider that the outcome of DC is the development of capabilities for managing offshore operations. In other words, we refer to capability development as an outcome of a firm's dynamic capabilities over time.

2.2 Offshore Operations – Main Aspects

Different from the common sense expectation, offshore has been practiced by companies for a long time ago (Hagell III & Brow, 2005; Lewin & Peeters, 2006a; Niederman, 2005; Olsen, 2006; Stringfellow, 2007). Thus, offshore actually is not a new phenomenon (e.g. offshore plants, Moxon, 1975). However, in the literature, sometimes the

term “outsourcing” is inappropriately used for “offshore” and the types of offshore have not been clearly articulated. According to the previous studies, outsourcing is a contractual agreement between a company and an external provider to obtain goods and/or services. Offshore, conversely, can be defined as “to the movement or relocation of domestic firm activities and operations abroad” (Bunyaratavej, Hahn, & Doh, 2008, p.227). Thus, the main difference is that, in outsourcing, external provider can be located in the same country, whereas offshore or offshore sourcing implies that the service/product provider is located overseas from the company client (Niederman, 2005).

An important differentiation can be made regarding possess/control of offshore operations. In this study, offshore is defined as outsourcing based on a company’s movement to source tasks or business functions (e.g. assemble) to a third party provider located in a foreign country. Offshore captive is also defined as a company’s movement to source tasks or business functions by own facilities in a foreign country. Finally, offshore partnership is defined as a movement to source tasks or business functions by interorganizational relationships (e.g. joint ventures) in a foreign country. Thus, there are three types of offshore: offshore outsourcing, offshore partnership, and offshore captive (Youngdhal, Ramaswamy, & Verma, 2008).

Besides those definitions, the evolution of offshore through time can be seen from distinctive and related aspects such as activities moved abroad, strategical importance, and managerial process. In terms of activities moved abroad, companies have been relocating out of the country activities from labor-intensive manufacturing assembly positions to service and knowledge-worker positions (Levy, 2005; Lewin & Peeters, 2006a). Further, the amount of companies using offshore activities is growing; the scope of activities moved abroad is also increasing. Activities such as engineering, manufacturing, quality assurance, R&D, software development, marketing and consulting have been performed by companies abroad. Thus, the main characteristic of this aspect of offshore evolution is more complex, as value chain activities of companies are being moved to be performed in developing countries (Beugelsdijk, Pedersen, & Petersen, 2009).

This movement mentioned above seems to be guided for a change in strategic importance of offshore for the companies. The evolution of offshore suggests that companies are searching for more than saving costs based on low wages since companies are choosing offshore locations which are able to support core business needs (Farrell, 2006), build capabilities, and obtain results of specialization (Hagel III & Brown, 2005). In addition, offshore is being used by companies dealing with globalization effects and international competition (Coucke & Sleuwaegen, 2008), as a source of internationalization for small and medium companies as entrepreneurial opportunities (Gregorio, Musteen, & Thomas, 2008), and as a source of survival for companies in developed countries (Javalgi, Dixit, & Scherer, 2009). Therefore, change in managerial viewpoint on the strategic role of offshore is argued as one of the most important aspects that have fed the offshore growth and evolution (Metters & Verma, 2008).

Finally, as a managerial process, offshore has also spread due to development of the organizational and managerial capabilities to coordinate this process (Levy, 2005). Offshore may be characterized as a learning-by-doing process evolving from experimental practice based on peripheral activities to core business activities. This aspect suggests that implementation of offshore is done by a continuum of stages. This continuum is based on learning and capability building (Lewin & Peeters, 2006b). Experience accumulated also contributes toward high skill offshore activities (Hagel III, 2004). Based on those previous studies we propose the following definition: *Offshore operations is a strategy-oriented operational and organizational process, which allows companies to achieve strategical goals by moving domestic operations abroad.*

3. Methodology

This research is characterized as a descriptive study using multiple cases, with a qualitative approach. The techniques of data collection we used are: (i) semi-structured interviews, (ii) document analysis based on archival records, and (iii) archival quantitative data. For data analysis we used the qualitative content analysis technique (Flick, 2002; Cooper & Schindler, 2003), based on Bardin (1979), Mayring (2000), and Kelle (2000). This study is also characterized as qualitative descriptive in that it intends to understand in depth how firms develop capability to manage and implement offshore operations. Furthermore, another aim is to understand in depth the process of Dynamic Capabilities, identifying how the processes contribute to development of capabilities.

In general, we carried out this study by three steps. In the first step, we did three explorative case studies, in order to get preliminary findings. The explorative phase was valuable to us to test categories of analysis and improve the protocol as well. Through exploratory case studies, we identified an emergent category of analysis. In the second step, we did five additional cases and returned to the first three cases as well, in order to expand the analysis with more data. Finally, in the third step, we did a cross-case analysis, comparing evidence from cases.

Criteria such as reliability of generalization can be analyzed in qualitative research, yet it has a smaller role than in quantitative research (Creswell, 2003). Quality of a case study project can be verified and monitored by four tests as follows: construct validity, internal validity, external validity, reliability (Yin, 2001). The *construct validity* of the case studies concerns the correct operation in view of the analytical framework or conceptual model of research. We have sought to use different sources of evidences (eight cases), and qualitative data from research reports (e.g. Offshoring Research Network). In addition, key informants were asked to analyze transcriptions in order to ensure the quality of the transcription process. Internal validity is a requirement for descriptive studies. In this study, we have followed a process of analysis through a structured procedure guided by pre-defined analytical categories, through a theoretical review, and an analytical framework, following thus a inductive logic. External validity refers to the potential generalizability of findings. It can be stated that case studies allow the emergence of new thoughts, assumptions, and theories (Eisenhardt, 1989). One of the alternatives to amplify the generalization can be to analyze more than one case, more than one researcher involved in data analysis, and the search for a case that has specific desirable characteristics (Bryman, 1988). Thus, we have used more than one case, which fit into the context of the study object. Finally, reliability refers to the potential for replicating this study in other similar situations. In this study protocols were used and databases were generated.

The main technique for data collection used by this study was the semi structured interview. We have recorded all interviews recorded in audio mode, transcribed them, and then we have sent to the interviewees to a check process. We have also taken field notes during all 24 interviews. The average length of interviews was between 50 minutes to 90 minutes, generating approximately 300 pages of transcription.

According to Eisenhardt (1989), data analysis is central to the development of theory, being the most difficult and least schematic stage of the research. In other words, the goal is to make sense of emerging body of evidence collected (Creswell, 2003). In this research, both the data collection instruments and the data analysis were guided by categories of analysis bases on theoretical review. Taking into account the issues set out, we have used in this study qualitative content analysis technique (Flick, 2002; Cooper & Schindler, 200) based Mayring (2000), and Kelle (2000). We have used Nvivo®, which is a CAQDAS, in order to perform the qualitative dada analysis. It is important to note that a CAQDAS does not work as statistical software, which automatically performs statistical operations. A CAQDAS is like a

word processor, which does not write a text, but helps to write it. Our intention was therefore to analyze the reports of managers and other subjects in order to be able to extract meaning from their perceptions regarding investigated key aspects. Qualitative content analysis technique is a classical procedure to analyze textual data, including interview transcriptions to media products. It is essential to this technique to use main categories of analysis, usually originated from theory and theoretical models (Bryman, 1998; Flick, 2002). The main categories of analysis developed in this study were the following: capabilities developed by companies to manage and implement offshore operations, the role of dynamic capabilities elements (paths, positions, and processes) on the development of capabilities for managing offshore operations, and firm-specific DC processes used to develop capabilities to manage and implement offshore operations. Thus, this study applies a inductive logic of qualitative data analysis. This logic is present when categories of analysis are defined based on theoretical review, prior to data analysis process (Mayring, 2000). Inspired by Kelle (2000), we have sought a data analysis integrated processes. For the first step we created nodes in order to analyze data accordingly to ours categories of analysis. For the second step, we analyzed each node by categories of analysis in order to analyze the content of each node by each case. For the third step, we analyzed each node by crossing evidence from cases, in order to identify patterns, differences among cases, and suggestion of propositions. For the fourth step, we clustered nodes by and cross categories of analysis in order to identify association among them, which was valuable to improve some propositions and add others as well.

4. Results

We have collected data from eight companies. According to the purpose of this study, we have chosen companies from the manufacturing sector. In addition, we have chosen companies that have been employing captive offshore operations. Five are Brazilian companies (A, D, E, F, and H), one is American (G), one is Danish (B), and one is German (C). Regarding resources and capabilities developed to manage offshore operations, we have identified three main aspects. **Development of human resources** was the most commented resource developed to manage and implement offshore operations. Seven of eight companies have highlighted this aspect as a resource/capabilities developed to manage offshore operations. Human resources have been developed by companies in different ways. For instance, companies A, C, G, and H have developed **expatriates** in order to develop internal capabilities to manage their offshore operations. More specifically, company A prefers to develop expatriates who have experience both in the company's home country and in the abroad facility country. Companies E and F have **developed local employees** to become managers, reducing effects of cultural difference, as well as contributing to implementation and management of their abroad operations. Company F has created **a team of managers** with international business experience in order to developed abilities and capabilities to manage its offshore operations.

As can be seen, there is a diversity of developed resources, but they convert to the development of human resources in order to develop capabilities to manage and implement offshore operations. **Knowledge** is also considered an important resource to manage and implement offshore operations. As it occurs in human resources aspects, knowledge has also been developed by companies in different ways. For instance, managers from companies B and E have commented on development of specific knowledge on supporting the logistics of offshore operations among locations. Thus those companies have been developing knowledge of how to operate each location and deal with legislation. This knowledge seems essential to ensure agility and flexibility of offshore operations among locations. Additionally, managers from companies D, F, and H have highlighted that knowledge of international business is essential to management and implementation of offshore operation. Company D has gotten

access to that knowledge by other companies of the corporation. Company F has formed a team of executives with past experience to acquire that learning. Company H, in its turn, has been accumulating knowledge on international business by its own experience.

We identified that the **development of management systems** is considered by companies C and G as an important resource to manage and implement offshore operations. That system allows companies to achieve an integrated communication and information flow among locations abroad, as well as standardization of management and operational procedures. This aspect was not as commented as the others aspects commented above. In addition, as human resources, knowledge also represents development of specific capabilities. This suggests that the development of resources and capabilities may be influenced by specific elements during the implementation and management of offshore operations.

All case companies identified the contribution of organizational processes on the development of capabilities to manage offshore operations; however, these processes vary among companies. Eight organizational processes were highlight by companies as important to management and implementation of offshore operations. Those processes were categorized in four aspects. The first aspect regards **management and production system and routines**. Company A's managers consider **standardized production system** as a process that allows the company to move its production system abroad, keeping production standardized among offshore facilities. Managers from companies G and H have highlighted **management routine standardization** as an important process to develop capabilities to implement and manage offshore operations. This process allows companies to ensure that the same management routines will be made in all abroad facilities. **Management and production system** has been highlighted by companies D and G as a fundamental process to implement offshore operations. This system allows companies to transfer its own system to abroad facilities, facilitating the management and implementation of operations. Finally, **process and project management** has also been highlighted by company D as an important process. This process has been contributing to the company's implementation of offshore operation, regarding the implementation as a whole project and operational processes.

The second aspect regards **planning and control processes**. Managers from company G consider that abroad operation planning, which is done in advance of implementation of offshore operation is a significant processes, requiring the company to prepare for implementation and management of offshore operations. Additionally, **controlling routines** are considered by managers of company F as a central process. They allow the company to get control of achievement of abroad facilities, as well as ensure alignment of management and operational procedures among locations. The third aspect regards **information process**. Managers from companies A, C, D, and F consider **integrated information system** as essential processes, allowing companies to access information from abroad facilities, keep aware of managerial and operational information, as well as sharing knowledge among facilities. Those flows of information are considered important to develop capabilities to manage and implement offshore operations. Finally the fourth aspect regards **human resources development process**. As managers from companies B, E, and F have emphasized, **training** of local human resources is central to developing capabilities to manage offshore operations, especially production, quality, and management skills.

Managers of all companies have highlighted the contribution of companies' path on the development of capability to manage and implement offshore operations. **Learning and past experience** were aspects the most observed by managers. During its path, company A has been learning how to deal with cultural differences. This learning has contributed to implementing and managing offshore operations, particularly regarding the adaptation of expatriates and implementation of its own management and production system. Company B also considers learning during its path important. Unlike company A, company B sought

learning as related to the transfer of businesses among countries that offer costs advantages. This learning is essential to its captive offshore operations. Company D, F, and H consider past experience in international business a key issue. That learning has been fundamental to management and implementation of offshore operation by development of capabilities. It is interesting to note that those companies together represent the three types of offshore operations.

Organizational culture was also emphasized by managers as a main aspect of companies' path. Company C attributed to its path the formation of an organizational culture that was fundamental to the implementation and management of offshore operations. In addition, companies E and H also believe the development of a strong organizational culture allows both companies to develop capabilities to manage and implement offshore operations, especially to overcome barriers. Finally, **business model** was the third aspect regarding companies' path. As managers of companies A, F, and G have highlighted, their business model was central to guide the implementation of offshore operations, allowing companies to move their own management and operational systems and routines abroad. This aspect has been essential to the development of implementation and management of offshore operations.

Concerning positions, all companies identified its contribution to developing capabilities to manage offshore operations. However, these aspects vary among companies. It was possible to identify five main aspects: specific resources, technology, and organizational culture as internal positions; and relationship with suppliers and relationship with clients as external positions aspects. Regarding **specific resources** development, company A attributes its position on maintaining its own production of the majority of its components as a main contributor to the implementation and management of its offshore operations. This way, company A controls all central operations of its supply chain. Company B attributes its position on utilizing offshore captive. In some way, the positions of companies A and B are similar. The two companies have a centralized posture in relation to offshore operations that orients the development of their capabilities. And finally, companies E, F, and G consider their position of developing dedicated facilities abroad, facilitating the flow of items and production among locations.

Position of development of **technology** was also considered by companies as a major aspect of the development of capabilities to manage and implement offshore operations. Companies A, D, and G have emphasized the development of their own management and production systems, allowing those companies to replicate their procedures and routines in abroad facilities. Production allocation among abroad was considered by Company B as a main position, contributing to management and development of its offshore operations. Development of specific technology was considered by Company F an important position made by the company, which has been central to implementation of offshore operations. Additionally, company H considers its position on product innovation and product development process as central to its offshore operations.

Development of strong **organizational culture** was also emphasized by companies. Managers of companies E, F, and H highlighted that a strong culture of international business has been developed during their companies' history. This aspect was central to companies being willing to move abroad; it has also been essential to the development of capabilities to manage and implement offshore operations. Complementary positions on development of HR were regarded by companies A, E, F, and H essential as well. **Relationship with supplier** aspect was considered by companies as a main external position. Companies A, D, F, and G highlighted keeping a close relationship with main suppliers as essential to implement offshore operation and to develop capabilities as well. Companies A, E, G, and H also emphasized the development of suppliers abroad as a key issue in their offshore operations. Similarly, **relationship with** abroad **clients** was considered a main position made by

companies. Companies D, E, and F consider that aspect is central to reputation of companies in the market, especially when companies are moving abroad.

Firm-specific processes were also identified as contributors to development of capabilities for managing and implementing offshore operations. As expected, leveraging, learning, and reconfiguration were observed as firm-specific Dynamic Capabilities processes used by companies. Moreover, two more firm-specific processes have emerged: seizing and sensing. The most observed firm-specific process was learning (7 companies), followed by leveraging (6 companies), reconfiguration (6 companies), and seizing and sensing (1 company). We observed that 5 companies have been using leveraging, learning, and reconfiguration together. Even though they are firm-specific processes, which means according to DC literature they are path-depend process, varying among companies, here it seems a pattern. This suggests that companies have been using a combination of firm-specific processes for development of capabilities.

Learning process has been fundamental to companies' management and implementation of their offshore operations. Companies have been using both past experience and learning in order to develop capabilities to manage and implement offshore operations. For instance, companies A, E, and H have learned how to deal with cultural differences. Company B recognizes learning as a central process for performing operations at dispersed locations. Company B employees are continuously stimulated to revise current processes so as to generate new knowledge about tasks and routines used at offshore operations. Company C also recognizes learning as a main firm-specific process. Managers of each site meet periodically to share experiences and information. This practice contributes to the sharing of knowledge and learning on the management of offshore operations. By practicing, company H has improved its management of offshore outsource operation, starting from frequent overseas trips to settling its own office in Asia in order to control those operations.

Leveraging process has been used by companies specially to transfer their own management and production system to abroad facilities. That process allows companies to standardize management and production process and routines among locations. For instance, companies A, D, and G have transferred their management and production system to abroad facilities. Company E has replicated its operation structure on abroad facilities. Companies E and H have also transferred their management routines to abroad facilities. Leveraging processes have also allowed companies to align procedures and strategy issues among locations. For instance, after company G has replicated its own management and production system to a specific abroad facility, that unit has improved its status of supplier as a main client from the worst to the best in a matter of one and a half years.

Reconfiguration process has been used by companies as a main process to adapt resources and capabilities already developed in order to fit with abroad facility conditions. Reconfiguration has allowed companies to deal with offshore barriers, especially cultural aspects and lack of local resources and capabilities. Reconfiguration fits companies' management and production systems and procedures in order to them to be implemented on abroad facilities. Reconfiguration also adapts local facilities to receive management and production implementation. For instance, company G allows its abroad facility to make minor adjustments and complements to company management and production systems. Company F has to adapt itself by changing its business model in order to be prepared to implement its international strategy by offshore operations. Thus, both companies and their abroad facilities may be subjects of reconfiguration process.

Finally, **sensing and seizing** processes have been used by company F in order to develop capabilities to manage its offshore operations. Companies try to be aware of what is happening among their business markets in order to not be obsolete in terms of production and processes. Companies use their abroad facilities to identify trends and news, as well to know

the latest's practices of management internationally. Companies also assign local managers to figure out new opportunities. Those opportunities are exploited by companies, become new services, products, markets, and even new abroad facilities. By those processes, companies are trying to go beyond offshore operations.

5. Conclusion and discussion

Using eight cases, we analyzed how companies develop capability to manage and implement offshore operations. Different from other studies that see DC as a singular capability (e.g. innovation), we see DC as a set of elements resulting in the development of specific capabilities to fit companies' needs. Thus, we aim to contribute to DC theory as well, exploring how DC elements develop companies' capability.

We have identified three main resources and capabilities regarding development of capability to manage and implement offshore operations. Companies have been developing human resources in order to develop capability to manage offshore operations. Companies have also developed and accumulated knowledge in order to develop capability to manage offshore operations. Additionally, as offshore operations are organizational and operational processes, companies have also developed their own management and production systems. This is a central finding of this study, helping to clarify what kind of resource and capability is fundamental to companies' ability to manage and implement offshore operations. Previous studies (e.g. Ellran, Tade, & Billington, 2008; Lewin & Peeters, 2006b) have pointed out that companies need to develop resources and capabilities to manage and implement offshore operations, but none of them have point out what those are. Thus we suggest that companies' capability to manage and implement offshore operations is developed by HR development, knowledge, and management systems.

We also identified that DC elements (organizational processes, path, positions, and DC firm-specific processes) have a central effect on resources and capabilities developed. We argue that first companies developed resources and capabilities based on those DC elements, and then, resources and capabilities developed affects the development of companies' capability to manage and implement offshore operations. This is a central finding to offshore literature and to DC theory as well. Previous studies (e.g. Ambrosini & Bowman, 2009; Wang & Ahmed, 2007) argue the need for exploring the sources and benefits of DC, as well as how companies renew routines and develop capabilities. Thus, our study offers some contribution to reduce this gap.

All companies in our study report the role of organizational processes on development of resources and capabilities. For instance, internal development of procedures and routines allows companies to develop their own management systems, which is central to companies' ability to manage and implement offshore operations. Similarly, internal development of procedures and routines generates knowledge that is essential to move operations abroad. This finding corroborates the routine approach of DC (e.g. Zollo & Winter, 2002), which highlights the role of routines on development and changing of resources and capabilities. This finding also corroborates to the organizational processes argument of Teece, Pisano, and Shuen (1997), which points out that how things are going inside the company matters to company achievement of distinctive level of capability at specific point in time. Thus we argue that organizational processes contribute to the development of resources and capabilities for implementing and managing offshore operations.

We identified the contribution of path on development of resources and capabilities to manage offshore operations. Development of strong culture, learning and past experience, and business model were highlighted by companies as development made over time that is central to development of resources and capabilities. This finding guides us to argue that development of resources and capabilities to manage offshore operations is a path-dependent process. Our finding corroborates previous DC studies (Eisenhardt & Martin, 2000), which

proposed the effect of path, or “history matters” on development of resources and capabilities. For instance, a path history of doing international business, or exporting products and importing key production components, helps companies to accumulate knowledge on international market or development of abroad suppliers. Past experience of abroad operations also contributes to accumulating essential knowledge. Thus, this knowledge accumulated during a companies’ history is used for the development of a companies’ capability to manage and implement offshore operations. Thus, we argue that path, as a DC element, first affects the development of resources and capabilities, and then, resources and capabilities develops companies’ capability to manage and implement offshore operations.

Positions refer to commitments done by companies during the time (Ambrosini & Bowman, 2009; Teece, Pisano, & Shuen, 1997; Zott, 2003). We showed companies have commitments to specific resources, technology, organizational culture, relationship with suppliers, and relationship with clients. Those commitments have been central to the development of resources and capabilities to manage and implement offshore operation. For instance, commitment to development of dedicate captive facilities has allowed companies to move production abroad locations. As previous DC studies pointed out, positions shape the current stock of resources and capabilities available to companies.

We have also identified five firm-specific Dynamic Capabilities processes used by companies to develop capability to manage and implement offshore operations. As expected, leveraging, learning, and reconfiguration were observed. Moreover, two more firm-specific processes have emerged, seizing and sensing. Previous DC studies pointed out that firm-specific DC processes (path, organizational processes, and positions) may vary among companies because they are path dependent (Wang & Ahmed, 2007). For instance, a company may use leveraging to replicate their processes in other locations or markets. Another company may not use leveraging, but use sensing to shape resources and capabilities to exploit new opportunities. Our finding partially agrees with that. As we observed, firm-specific DC processes vary among companies. However, five of eight companies use leveraging, learning, and reconfiguration at the same time. Thus, we argue that in management and implementation of offshore operations, companies leveraging, learning, and reconfiguration are essential DC elements as path, positions, and organizational processes.

In addition, how do companies develop capabilities to implement and manage offshore operations? Companies use DC elements (path, organizational processes, and positions), developing resources and capabilities during their path, by making commitments and continually developing routines and procedures. Moreover, firm-specific DC processes both develop resources and capabilities and also shape the use of those resources and capabilities in order to develop capability to manage and implement offshore operations. For instance, DC elements and firm-specific DC elements have contributed to a company developing its own management and production system. Learning how to move that system abroad, leveraging that system, and reconfiguring that system to abroad conditions shape how that system contributes to the company’s capability to manage and implement offshore operations. We consider this finding useful to offshore literature, describing how companies develop capability to manage and implement offshore operations. It also contributes to DC theory, pointing out the twofold role of firm-specific DC processes.

This study contributes to practice by providing information on offshore operations aspects, what kind of capabilities companies have been developing, and how they are developing capability to manage offshore operations. Several limitations of this study merit discussion. First, the scope is limited to manufacturing companies implementing offshore captive operations. Results regarding offshore operations aspects and capability development by DC cannot be extended beyond this contingency. Second, the sample case companies were not randomly sampled but were chosen by manufacturing sector, type of offshore operations

implemented, and access to interviews. This may cause some bias in the results. However, we have chosen manufacturing companies implementing offshore captive in order to avoid the literature confusion between offshore operations and outsource, and in order to contribute to reduce the lack of empirical studies of this kind of companies on offshore operations.

However, future studies may benefit from the insights proposed, exploring them with other research methods such as surveys. We suggest the following questions: (1) *What is the effect of DC on companies' capability to manage and implement offshore operations?* (2) *Does the effect of DC on companies' capability to manage and implement offshore operations vary among offshore types?* (3) *Does the effect of DC on companies' capability to manage and implement offshore operations vary between service and manufacturing companies?*

6. References

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