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Is centralization good for performance? A subsidiary strategy perspective

Abstract

Subsidiaries are paramount to Multinational corporation (MNC) performance. Subsidiary economic and/or financial performance has to be combined with subsidiary initiative to be able to contribute to overall MNC performance. The trend to centralization, either regionally or globally, changes the embeddedness of the subsidiary, specifically, their interdependence along the global, local, and internal markets, and, by extension, decreases the organizational slack of the subsidiary. Changes in organizational slack and level of embeddedness reduce the resources available for innovation and the development of subsidiary initiatives. The case study presented, based on a longitudinal study through personal interviews and a network analysis of the subsidiary relations in two points in time, 1998 and 2003, shows how the centralization process of the division has affected the overall capabilities of the subsidiary reducing its strategic contribution to the overall division. Propositions for further research are developed.

Is centralization good for performance? A subsidiary strategy perspective

Subsidiaries are paramount to Multinational Corporations (MNCs) performance. The study of their contribution to the overall MNC has evolved from a merely passive implementation of head offices mandates, towards a more pro-active and initiative-taking strategic behavior (Birkinshaw & Hood, 1998; Birkinshaw & Hood, 1998; Birkinshaw, Hood, & Jonsson, 1998). Furthermore, it has been argued that subsidiary managers need to change their mindset from one of compliance to head office to proactive initiative-taking if they are to maximize their subsidiary's value to the parent corporation (Delany, 2000). Consequently, the term "subsidiary strategy" started to make sense as subsidiaries are encouraged to be proactive in developing their activities and in seeking out ways in which they can add value to the parent's overall business.

However, it is not clear how much "room" subsidiaries can actually have to behave strategically. In fact, subsidiary behavior appears to be determined by its level of embeddedness (Andersson & Forsgren, 2000; Andersson, Forsgren, & Pedersen, 1999), specifically, their interdependence along the global, local, and internal markets (Luo, 2002). It has been suggested that it may be interesting to analyze the ego-network of a subsidiary as it relates to its MNC environment and its global and local business environment (Ghoshal & Bartlett, 1990); however, no attempt has been made as far as our knowledge goes. This paper tries to build upon that suggestion by analyzing the pattern of relationships of a successful subsidiary in a five-year period.

The aim of this paper is to address the headquarters-subsidary relationship by means of qualitative and quantitative data. Our analysis builds on the points of view of the subsidiary and that of headquarters (HQ). These two views tend to diverge as some decisions made at HQ are viewed to put into danger the existence of certain subsidiaries (Birkinshaw, Holm, & Thilenius, 2000).

Furthermore, innovative perspectives on multinational organizations tend to focus on fewer hierarchical levels and the increasing importance of networks among organizational units and people, suggesting the increasing role played by lateral relationships to understand organizations (Schweiger, Atamer, & Calori, 2003). Additionally, the need for horizontal coordination and strategic initiative has been acknowledged to be related with organizational slack (Nohria & Gulati, 1997; Poynter & White, 1985).

Based on a single, exploratory and descriptive case study, we posit that high levels of centralization put into danger the performance of the subsidiary. Centralization modifies the network of relationship that supports the business processes on which performance is based. On the one hand, it changes the relationships that have made possible operational and strategic efficiency. On the other hand, centralization has usually an impact on headcount reduction. Thus, it reduces subsidiaries' organization slack and impedes the unit to act strategically, reducing its ability to coordinate horizontally and the development of other activities that those mandated from HQ, hindering subsidiary initiative and the strategic contribution to the MNC.

The Origins of Subsidiary Strategy

Subsidiaries play an important role in the performance of a MNC; however, until recently, they have not been a focus of inquiry (See Paterson & Brock, 2002 for a review on subsidiary-management research). Although exceptions apply, (Brandt & Hulbert, 1976; Sim, 1977), a more significant research stream on MNC subsidiaries started at the 1980s with contributions on the degree of formalization of the roles of subsidiaries (Hedlund, 1981), or the nature of the relationships between headquarters and subsidiaries (Otterbeck, 1981). In general, the first contributions on MNCs were dominated by a hierarchical and center-based perspective where strategy is thought to be formulated at the "center" of the MNC and then implemented over far-flung

units (Caves, 1982; Dunning, 1981). The parent plays a prominent role in deciding where and how to coordinate and structure global operations (Porter, 1986). Headquarters' centered research saw subsidiaries as submissive, passive players whose role was to follow head office mandates. Along these lines, therefore, contribution to corporate performance was either in terms of their financial achievements or in the fulfillment of a concrete strategic role assigned from the center (Jarillo & Martínez, 1990; Porter, 1986).

Increasingly, however, subsidiaries have been seen as active units, as sources of a MNC's competitive advantage, and providers of strategic initiative (Taggart, 1999). The main motivation was the emergence of alternative conceptions of the MNC where subsidiaries are all contributors to a complex networked firm (Ghoshal & Bartlett, 1990; Hedlund, 1986; Nohria & Ghoshal, 1997). These models proposed that MNCs cannot be conceptualized as hierarchical, but rather as a puzzle whose pieces have to fit among each other to create a bigger and more value adding picture. Thus, the different elements in a MNC, subsidiaries among them, need, complement, and nurture each other. As a consequence, the term "subsidiary strategy" started to be taken into consideration. Subsidiaries were encouraged to be proactive in developing initiative that add value, not only to their local operations, but to the parent's overall business. Subsidiary development through initiative-taking is a rich strand of the literature that emphasizes the shift on strategic importance of these units (Birkinshaw & Hood, 1998; Birkinshaw, Hood, & Jonsson, 1998; Delany, 2000).

All in all, we see a clear normative trend towards promoting subsidiary initiative-taking and self-involvement in the MNC's strategy. What is not clear in the existing literature is under what circumstances the subsidiary can actually control, decide and define its own strategy. As Delany (2000) posits, the *head office knows better* syndrome persists. The concern that the subsidiary's initiative-taking is self-interested precludes headquarters from nurturing subsidiary strategy.

Subsidiaries play the game of bargaining with headquarters in order to receive the necessary autonomy to behave strategically (Birkinshaw, 1995). As parent and subsidiary managers often have different perceptions about the role of the subsidiary in the MNC (Birkinshaw, Holm, & Thilenius, 2000), subsidiaries and headquarters maneuver to achieve their legitimate private and common goals. Interestingly, though, it has been suggested that subsidiaries that enjoy higher levels of autonomy are more initiative-takers than more controlled units (Birkinshaw, Hood, & Jonsson, 1998). However, subsidiary behavior, and therefore, subsidiary autonomy, is determined by numerous factors (Taggart & Hood, 1999).

Subsidiary Embeddedness and Subsidiary Autonomy

Social networks theory has been applied to the complexity of managing MNCs and their far-flung units (Andersson, Forsgren, & Pedersen, 1999; Ghoshal & Bartlett, 1990; Hedlund, 1986; Nohria & Ghoshal, 1997). Networks have been mainly used as a metaphor, a theoretical, graphic and visual representation of how MNCs can be better conceptualized. The view of MNCs as a social network portrays a fine image of its view as a puzzle. Few attempts have tried to characterize MNCs' attributes through a network perspective. (Ghoshal & Bartlett, 1990), for example, developed some propositions that relate resource configuration with network specific terms, such as power and centrality based on the density of relationships of the units of the MNC. Similarly, Swedish scholars have done considerable work that shows how embeddedness determines the strategic behavior of subsidiaries (Andersson & Forsgren, 2000; Andersson, Forsgren, & Pedersen, 1999; Forsgren & Pedersen, 1998). For example, it has been argued that the influence of external counterparts, i.e., the level of embeddedness, competes with headquarters' desire to exercise control to integrate the subsidiary into the overall corporate strategy (Andersson & Forsgren, 1996). If this is the case, the subsidiary will tend to enjoy certain autonomy and hence have more "space" to behave strategically.

In this line of reasoning, Birkinshaw & Morrison (1995) suggest that embeddedness is heterogeneous across subsidiaries. He shows that the set of formal and informal management systems that determine the relationships of the subsidiary to its parent and affiliates, varies across subsidiaries and subsidiaries roles. For example, units that enjoy higher autonomy show a more internationally configured value-chain, which would suggest a high level of embeddedness within the MNC. These results go in line with those offered by Taggart & Hood (1999). They suggest that subsidiaries with higher level of autonomy seem to be more integrated in the multinational network. Consequently, the mechanisms that headquarters may use to control and coordinate its subsidiaries (Martínez & Jarillo, 1989), may affect subsidiaries' pattern of relationships. Among the mechanisms used by headquarters to control decision over key processes, centralization of activities is one of the most common instruments. It may be reasonable to expect, as our previous reasoning suggests, that centralization will affect the pattern of relationships of the subsidiaries of the MNC. Analyzing this relationship is the first attempt of the present study. Particularly, we want to examine the evolution of the pattern of relationships of a subsidiary that belongs to a global MNC. In this setting, we have found that pressures for global integration are strong and highly centralized strategies are implemented.

Centralization, Subsidiary Autonomy and Organizational Slack

One of the most important characteristics of the structural context any subsidiary may face are the demands for global integration and local responsiveness (Ghoshal & Westney, 1993, Prahalad & Doz, 1987). Kostova & Roth (2002) suggest that subsidiaries can hardly ever attain a complete autonomy as they face “institutional duality”. That is to say, subsidiaries have to balance the need to legitimate their position both, along the MNC and in the country where they operate; these forces point to different directions in most of the cases, reducing the actual space of strategic alternatives subsidiaries may have.

This space may also be reduced if the MNC centralizes its decision making processes. Headquarters normally make a balance between the benefits of subsidiary autonomy and the disadvantages of tight control, when allowing more or less autonomy to their subsidiaries (Otterbeck, 1981). However, in global industries, e.g., auto components manufacturing (Berger, 2002), the pressures for global integration are high and few discussion about levels of autonomy are possible. In particular, the MNC has to achieve certain levels of economies of scale in order to be competitive and, therefore, centralizes some activities such as Purchasing, or Research and Development (R&D). Given that most customers, auto-manufacturers, are also so called global companies, Marketing and Sales processes tend to be centralized in order to mirror the buying structure of Original Equipment Manufacturers (OEMs). It also happens that Manufacturing tends to be coordinated regionally if not globally. Hence, allowing for central manufacturing decision making affects not only the decisions of where do products have to be manufactured, but also the standardization of manufacturing processes to ease international coordination and manufacturing knowledge management.

As a consequence, subsidiaries who used to have a substantive influence in almost all aspects of the value chain, and the responsibility to coordinate them, give up this responsibility towards the center and move towards a mere operational task. Moreover, central services are built in order to help the MNC to achieve economies of scale and reduce management costs. In this line, central services will impose tight financial controls over subsidiaries, such as specific inversion rules and extensive reporting. All in all, the organizational slack of the subsidiaries may be reduced by highly centralized strategies.

Organizational slack has been defined as “a cushion of actual or potential resources, which allows an organization to adapt successfully to internal pressure for policy change. Slack also allows the

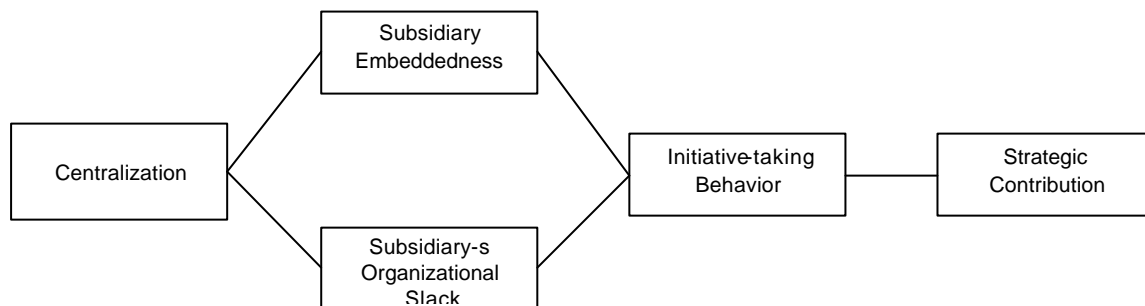
firm to initiate changes in strategy with respect to the external environment” (Bourgeois, 1981)p.30. The debate has been inconclusive as whether or not organizational slack is good or bad for performance. On the one hand, slack can become a source for conflict resolution (Cyert & March, 1963) and a facilitator of strategic behavior, which allows the firm to experiment with new strategies such as introducing new products and entering new markets (Thompson, 1967). Therefore, one would argue that slack has a positive association with performance. On the other hand, however, agency theorist argue that slack will be only good for managers acting as agents. Since managers inherently have a set of goals that are not always aligned with those of principals, managers may take advantage of slack by favoring personal goals (Jensen & Meckling, 1976). As a result, slack may become a source of agency problems, which breed inefficiency. Under this pessimistic view of slack, theorists usually recommend the level of slack to be minimized. It is precisely this view that underlines many of the international strategies of firms when investing in turbulent environments: they look for a partner and buy the part with the less possible slack (Tan, 2003).

All things considered, while reasons exist to advocate “the less slack, the better”, it also seems plausible to argue “the more slack, the better”. Some researchers argue that the inability to reach a conclusive statement as regards slack may be due to the underlined thinking that slack and performance have a linear relationship, while it may be possible that this relationships is curvilinear. Based on real options theory and using data from state owned enterprises in China, (Tan, 2003) shows this is the case. The analysis of Nohria & Gulati (1997) that relates innovation and organizational slack also points in the same direction. Therefore, there is no reason to believe that less slack, and highly centralized strategies associated with it, are beneficial to subsidiary performance. In fact, we argue that too much centralization reduces organizational slack, which in turn reduces subsidiary’s innovativeness and initiative-taking behavior at the level of the subsidiary.

In these circumstances, the subsidiary has no other choice than to reduce its strategic contribution to the MNC.

Our complete reasoning can be synthesized in Figure 1.

Figure 1
Centralization and Initiative-Taking Behavior



Methods

Research Design

We examine our relationships by means of qualitative and quantitative data. We will deal with a single, exploratory and descriptive case study that turns to social network analysis to quantify the interactions of the firm studied: *Brakes Spain*, the Spanish subsidiary of *Brakes*, a MNC that manufactures auto parts.

One of the authors has had relationships with *Brakes Spain* since 1993. He was involved in the developing and implementation of the subsidiary's strategy. The frequency of contact throughout the years varied from more than weekly to a monthly contact in different periods of time. In the periods where there was a weekly contact, relationships were established at many levels of the

organization, from factory foremen to the CEO of *Brakes Spain* and some divisional level management. In the periods where contacts had a monthly frequency, the main relationships were established with the top management of the company. Hence, we had access to a huge amount of internal classified documents as well as very open ended conversations with most executives in the company, as well as operational people at the factory level. For the purpose of writing this document, further conversations were maintained with key people with whom we checked our interpretation of the facts. Both authors were involved in these conversations, so that the intimate knowledge of the company by one of the authors did not bias the other's interpretation. Several discussions were maintained among both authors. In the cases where disagreement was present a telephone call to concrete company executives was made to clarify the issue. Exhibit 1 presents the interviews that were made specifically for the purpose of this paper.

*Research Setting*¹

The unit studied is a subsidiary of *British* which we will call *Brakes Spain*. *British* is a diversified MNC, active in more than 30 countries in Europe, the Americas and Asia Pacific. *Brakes Spain* belongs to the automotive brake division, *Brakes*². *Brakes* is a world leader in the design and manufacture of its products, with 40% volume world market share. *Brakes* is *British* largest business, with sales in 2001 of 2.8 billion euros. Most of the leading vehicle manufacturers, OEMs, produce vehicles containing components made by or under license from *Brakes*. In distributed research settings around the world, *Brakes* is developing new brake systems designed to reduce weight, minimize noise, vibration and harshness and improve safety.

¹ Company data has been disguised for reasons of confidentiality. One of the authors has been following the company for more than ten years, so we had access to extensive strategic documentation as well as operational data.

² Along the document, *Brakes* is sometimes referred simple as "the division".

Auto components has been recognized as one of the few truly global industries. The number of customers is limited to few OEMs. The consolidation that has been going on in the automobile industry has triggered a certain consolidation in the auto components industry (Berger, 2002). The challenges in the auto components industry are to become more flat and agile, leveraging global affiliates for responses, while focusing on overall value chain cost-cutting activities.

Brakes has manufacturing facilities in all significant car manufacturing countries worldwide, with the exception of Russia. Its worldwide operations are run through regional centers in Germany, UK, US and Singapore. It operates 46 manufacturing facilities in 20 countries worldwide, with over 20,000 employees. Approximately 44% of sales in 2001 were originated in Continental Europe, 32% in the Americas and 8% in the UK.

The Spanish subsidiary, had sales of 350 million euros 2001 with 1.800 employees. This subsidiary has two main manufacturing facilities (Plant1 and Plant2) and local headquarters (HQ *Spain*). Three are the characteristics that make *Brakes Spain* worthwhile study. First, *Brakes Spain* has been consistently the better performing subsidiary in the division, both in economic and operational terms. It has consistently shown the higher Return on Sales (ROS), flexibility and productivity measures among all the subsidiaries worldwide.

Second, it is based in Spain. The subsidiary does not have local customers to serve. The locus of decision-making of its customers is at the regional HQ of the different OEMs, none of those are in Spain. Thus, there are subsidiaries that are better positioned to establish relationships with its customers. This implies that *Brakes Spain* had to be especially active in developing its position in the market and along the MNC.

Third, *Brakes Spain* has been a net contributor in strategic initiatives and capability development for the division. As examples of these contributions we have: the process of launching of new applications was first developed and applied in Spain, and later translated into the needs of the division; the concepts of lean manufacturing were first applied in Spain and later were tried to be transferred to other units; the first far-east customers, both Korean and Japanese, were dealt with from the Spanish subsidiary, along the whole process from the request for quotation to the final launch of the specific products.

Initially, the subsidiary was able to perform all the activities of the value chain on its own, with local customers and providers. However, as the process of globalization and the opening of borders promoted by common European market policies was implemented, its design centers, product development facilities, and their customers and providers were “globalized”, which meant that certain resources were concentrated geographically in order to obtain economies of scale. By 1998, *Brakes Spain* was integrated into the global operations. However, it had significant leeway in designing its strategy. Even though disruption of orders to be manufactured was starting to get fought over, each individual country maintained a significant set of products. The situation as of 2003 shows an increasingly global MNC with a successful subsidiary in Spain losing control over more and more resources, while keeping control over production facilities and processes. Global purchasing had already been established for the majority of inputs. A centrally managed marketing and sales organization eliminated the director level marketing people in the subsidiary.

According to the words of their managers, *Brakes Spain* distinguishes three business processes in their company: 1) Development of new products; 2) Launching of new applications, which was the process from gaining the order form the customer to the actual start of mass production; and, 3)

Mass production, which was the ongoing manufacturing and delivering of the products to the customer's plant.

Our case selected, therefore, is appropriate to analyze the issues of centralization and subsidiary initiative. *Brakes* is a global industry pursuing a strategy oriented to achieve high levels of centralization in order to take advantage of economies of scope in specific business processes. On the other hand, *Brakes Spain* is a unit of high strategic importance to the MNC that feels is losing space to keep its previous strategic behavior. What we want to examine is whether this centralization strategy has affected *Brakes Spain's* strategic initiative-taking behavior.

We then determine whether such a centralization strategy has had an effect over the subsidiary level of embeddedness. For that purpose we examine the subsidiary network as it is reflected in two points in time, 1998 and 2003. The case study then is longitudinal, as it analyzes changes in a five-year period. As network analysis has a particular set of methods and techniques used to catalog a pattern of relationships, next we define and explain the ones used throughout this research.

Boundary Specifications and Sampling

The first step necessary in any network-based research is the determination of the population to be studied. Simply put, we want to determine the work-based pattern of relationships that start at the units that make up *Brakes Spain*, both internally and externally, that is to say, the work-based interactions among and across employees that work at Plant1, Plant2 and HQ Spain, (1,500 and 1,685 in 1998 and 2003, respectively). However, collecting all this information would have been not only costly but also impossible to compliment even for the most clever and collaborative interviewee, not to mention inability of any network software to handle such a large database. Just consider the dimension of the database if each employee would have been asked to report its

proximity with all the employees of the firm ($1,500 \times 1,500 = 2,250,000$ cells). In such instances, sampling is necessary (Knoke & Kuklinski, 1982).

To that purpose, we use the “reputational approach” (Scott, 1991) which states that obtaining information about the actors with the higher level of reputation in a particular set of actors is enough to determine the network of relations of that set. This criteria is particularly useful when the knowledge of the agents themselves may help to determine an appropriate sample. In this case, managers at *Brakes Spain* are the actors with the best knowledge about who are the agents that enjoy the highest level of reputation in the company.

In order to avoid “hierarchy bias” (tendency to select one’s subordinates as enjoying high reputation), the researchers turn to *Brakes Spain*’s payroll and based on their knowledge of the firm and its employees, selected those with higher levels of reputation among their peers. This list was judged by the managers of the different plants of *Brakes Spain* and by four members of the board of directors. The final list was compared to a different one elaborated by *Brakes Spain*’s Human Resources Manager, adding or deleting members based on a discussion about his/her actual level of reputation level. As a result of this process, 50 managers were selected in 1998 and 84 in 2003.

Comparing both samples, we found that only 26 managers were included in both waves, 24 of them maintaining the same position within the company in a five-year period, indicating frequent movements within the company, which is common in big MNCs³. Strictly speaking, therefore, both networks cannot be directly compared and analysis may be done with caution.

³ MNCs do this in order to improve their employees’ abilities by forcing them to develop different activities at different levels of responsibility.

Structural and Composition Variables

Network analysis is based upon two types of variables: structural and composition variables (Wasserman & Faust, 1999). Structural variables are measured on pair of actors and measure ties of a specific kind between them; that is to say, structural variables are the *content* of the relation as named by Scott (1991). This paper analyses work-based interactions as recognized by a sample of managers from *Brakes Spain*. Complementary, composition variables are measurements of actor attributes. This paper records firm, plant and department from all the actors involved in the relations. Composition variables of the interviewees are shown in Exhibit 2.

Type of Network and Unit of Analysis

Networks are categorized by the nature of the set of actors and the properties of the ties among them. The term *mode* refers to a distinct set of entities on which the structural and composition variables are measured. Structural variables measured on two different set of actors give rise to two-mode networks (Wasserman & Faust, 1999). Here, we study actors from two different sets tied by a work-based relationship, one consisting of a sample of employees at *Brakes Spain* and a second larger set consisting of employees of the same company plus employees of other units of the MNC, as cited by the interviewees. Actors in the first set are “senders” of the relation (*egos*), while those in the other set are “receivers” (*alters*).

The difference between the sets is a matter not only of size but also of capacity to enumerate all the actors that belong to the each set. While the first set is closed and reduced to the size of the sample selected, the second one is open, allowing the interviewees to name anyone within and outside *Brakes Spain* with whom she or he has a work-based relationship, be that *alter* part of the selected sample or not.

The resulting network is one made up by ties surrounding the sampled individual units, structure that receives the name of ego-centric network data (Marsden, 1990). Therefore, the unit of analysis of this research is the egocentric work-based network from *Brakes Spain*. This ego-network, however, can be separated into more specific groups. We will analyze three different, more concrete, ego-networks. The first one is the *internal ego-network*, that is to say, the one made up by the relationships within and across the units of *Brakes Spain* (Plant1, Plant2 and HQ Spain). The second one is the *corporate ego-network*, or the pattern of relationships of *Brakes Spain* with any “alter” that is a member of a unit of the MNC. As far as our knowledge goes, this is the first attempt made in the literature to disentangle “subsidiary embeddedness”. Similar investigations, e.g., Andersson & Forsgren (1996), Ghoshal & Bartlett (1989), identify two sets, the external (relations to actors outside the subsidiary, such as clients, providers and regulators), and the corporate (same as defined here). These designs are based on the implicit assumption that subsidiaries are a sole unit, while in most of the cases subsidiaries are made up by a number of plants and local headquarters, units that may relate differently along the MNC. Finally, we will briefly analyze the *external ego-network*, or the pattern of relationships of *Brakes Spain* with any “alter” that is any member of a unit outside the MNC, such as clients, providers or others.

Network Data Collection

We collected network data in two waves. The first wave of data was collected between January and April of 1998, while the second was collected in the last fortnight of May and the first of June of 2003. In 1998 the interviewees received a printed questionnaire that was returned to the researchers once fulfilled. In 2003 we take advantage of an online questionnaire designing a similar version of that of 1998, and hosted it in the web page of the researchers’ University affiliation. Each user received an e-mail with his/her username, password and a link to a customized questionnaire, which is a measure that improves response rate (Knoke & Kuklinski, 1982). Additionally, we take the

standard security measures that are taken in order to avoid access to the web-page and its database by hackers and people outside the interest of this research. Response rates each year were 95% in 1998 and 96% in 2003. In both instances, personal calls were made to individuals that were reluctant to respond at first. In both cases a presentation of aggregate network results was made to different units within the company, which also helped to clarify our interpretation of the results.

Questionnaire

Questionnaires are the most commonly used network data collection method. They are most useful when the actors are people, and the respondent relations are the ones he or she can report on (Wasserman & Faust, 1999). Questions were formatted in a free-recall and fixed-choice design. Free-recall allow respondents to name any actor belonging to any unit in *Brakes Spain* or the MNC with whom he or she has a work-based interaction in the last six months. This format is particularly useful when a roster including all the possible *alters* is extremely large or unknown. Complementary, as interviewee fatigue is an issue as regards accuracy (Knoke & Kuklinski, 1982), fixed-choice reduces the number of alters to a maximum, five in this case.

An important issue that arises with the social network data that is collected under questionnaire is informant accuracy. Bernard, Killworth, Kronenfeld, & Sailer (1997) state that people are not very good at reporting on their interactions in particular situations. However, Freeman, Romney, & Freeman (1987) said that particular interactions are not of primary concern to social network researchers, but relatively stable, long-term patterns of interaction, situations were the informants are more able to report accurately. Work-based relations, in a horizon of six months fit into this category. However, in order to eliminate errors coming from inadequate measurement, Knoke & Kuklinski (1982) suggest to be as specific as one can be as regards questions made. As some people may tend to report work-based relations within members of his/her unit, we explicitly ask the

respondent to report interactions *with* Plant1, *with* Plant2, *with* HQ Spain, *with* other units of the MNC and *with* external agents such as clients and suppliers. Given that we were mainly interested in the ego-networks of the individual departments of the different organizational units, informant inaccuracy is also neutralized in the aggregation of data.

Data Tabulation

As free-recall allows to define *alters* composition variables based on the criteria of the interviewee, we deputed the entries based on company's flow chart when available and most frequent classifications. For example, different egos claimed to have a work-based relation with a manager from Germany; while one ego classified that alter as someone working at the Research and Development department, others classified the same alter as the Product Applications Engineering head of department. While these situations were not common, some deputation was needed. Several calls to key informants within the company were made to clarify some of the positions, mainly of alters, outside the MNC. Evident mismatches and incomplete entries were eliminated leading to a final database of 1411 entries in 1998 and 1827 entries in 2003 (99,22% and 99,27% of the original database respectively). This has to be interpreted as 1411 and 1827 pairs of ego and alter tied by a work-based relation.

From both databases a selection of entries was needed, since we want to analyze the internal and corporate ego-networks separately. The internal network's databases include 734 and 1315 pairs in 1998 and 2003, respectively. As regards the corporate network, databases include 355 pairs for 1998 and 280 for 2003. Finally, the external network includes 322 and 232 pairs respectively.

Given the difference between the samples that make up the first set of actors each year, a comparative network analysis performed at the individual level will show little or none interest. An

analysis at the functional level will be more appropriate, as the differences between 1998 and 2003 are least extremes at the functional level than those at the individual level. Therefore, we aggregate similar entries by plant and department, classified by plant or HQ. For example, relationships with people that work in the department of Process Engineering in Italy, were added to those relationships with people that work in the same department in Germany, France, or Britain. The result actor is the best approximation to the functional level. Finally, data was analyzed on cross-tabs, each cell representing the frequency of work-based interactions between ego and alter.

Observed Variables

Density

As the interest of the present study is the analysis of the ego-network, we will concentrate the analysis on density values, as suggested by Scott (1991). Density is essentially a count of the number of ties present normalized by the maximum possible in a graph. It is, therefore, calculated by dividing the number of cells of the matrix that show a relationship and the total possible number of cells (contact opportunities).

Relational effort

We developed a variable called “Relational Effort”. The relational effort is simply the number of relationships coming from one unit and going to another, and may reflect the effort in keeping a relationship with somebody. Complementary, we divide this value by the number of ties present in the matrix. In network terms it would be the out-degree to the specific alter divided by the total out-degree of the organizational unit.

Analysis and Discussion

Centralization forces firms to concentrate resources and activities geographically, and, by extension,

translates managers from one country to another and forces them to travel to many different places. Therefore, centralization will logically affect the level of external embeddedness of a subsidiary.

Since 1998, *Brakes* has experienced a growing process of centralization, that can be described among several lines. In 1998, all the subsidiaries had its own Marketing and Sales Director. *Brakes Spain* had a senior level Marketing and Sales Manager, who was active in the marketing strategy setting for all the subsidiaries. As it has been said before, he played a key role in opening Far-East customers, being engaged in all level of negotiations with them. He had a local key account management system in place. Four middle level managers were in charge of specific customers. As of 2003, his position had disappeared: *Brakes* had organized a global key account management system organizing a centralized Marketing and Sales Department. He was offered a position as a Global Key Account Manager for two European customers. However, his level of responsibility would have clearly decreased, as the marketing strategy was set by the central marketing and sales staff. He turned down the position and went to work for a different firm, where he could maintain his level of responsibility.

As a first step in the process of centralization, all marketing and sales personnel that hierarchically used to depend of the local marketing and sales managers came to depend of the central HQ staff. Consequently, some people left the company, and the one who stayed, was moved to a different position, customer liaisons. Customer liaison managers came to be a substitute for the previous Marketing and Sales function in *Brakes Spain*. However, they were clearly lower level managers and had, given their hierarchical dependence in *Brakes Spain*, less input in managing customer relationships. In fact, most customer contacts during the initial stages of a project were done through the marketing and sales HQ staff, reducing the number of direct contacts that *Brakes Spain* has with its customers. This change implied that *Brakes Spain* possibilities to open new markets and

get new business from existing customers, to be almost null. As all market initiatives were directed from the center, executives in *Brakes Spain*, clearly reduced their input in market strategy setting.

A second key change was the centralization of Project Management processes. As Marketing and Sales were centralized and organized along the Global Key Account Management structure, it apparently made sense to coordinate globally Project Launching for each one of the customers. In as such, a Central Program Management organization was created. After trying to adapt the Spanish program management system in other subsidiaries with relative success, the Spanish Program Management Director was offered a central position to coordinate program management at European level. Program leaders in different countries were assigned to this central organization, even though few of them were asked to relocate. The success of the Spanish system was based on the dual responsibility of program managers as qualified members of the traditional organization and as program managers themselves. Some of them belonged to the Marketing Department, the Product Engineering Department or even the Operations Department. As they were organizationally assigned to the central function, they lost this dual responsibility.

Purchasing was previously centralized. By 1999, a central Purchasing organization was created. A similar process as the one experienced by the Program Management organization happened. The Spanish head of Purchasing was relocated to central offices and the Spanish team was maintained although depending from central offices.

At the same time, a process of rationalizing European Manufacturing was taking place. Two of the factories in Central Europe were considered inefficient and a process of regional rationalization started to take place. However, due to political and institutional restrictions, this process had not produced clear results by 2003. However, a central Manufacturing strategy staff was created. Prior

to 2003, there has been a program for standardizing manufacturing methods, in which 5 to 8 representatives of *Brakes Spain* were represented. The creation of the European manufacturing staff decreased subsidiary participation as it absorbed some of the local staff from the German subsidiary.

As a result of these processes, the intervention of top Spanish management in strategy setting for the division decreased. The involvement of *Brakes Spain* in the development of markets, and the creation of customer intimacy with divisional clients was eliminated, as the accumulation of central staff was taking away those contacts from the subsidiaries which were reoriented as mainly manufacturing units.

These centralization processes decreased the level of *Brakes Spain's* external embeddedness. Given the nature of the business, OEMs are clearly global or less regional organizations; *Brakes Spain*, then, could not develop external embeddedness at the local level, and was dependent on its international relations for intimate market knowledge.

Centralization and embeddedness at the subsidiary level

The centralization level affects the level of external embeddedness of a subsidiary. Traditionally, embeddedness has been measured under a Likert scale with 0 representing very low dependency on an agent and 7 representing high dependency on someone (Andersson & Forsgren, 2000). We think that this kind of questionnaires do not avoid for common-method bias. On the contrary, specific relations as reported under social network questionnaires return “actual” embeddedness: existent relationships that form the network of people whom one agent is tied by a work-based relationship. The current highly centralized strategy pursued by *Brakes* has had an effect over *Brakes Spain's* level of embeddedness as reported in Table 1.

Table 1
Brakes Spain
Relationships by receiver
1998-2003

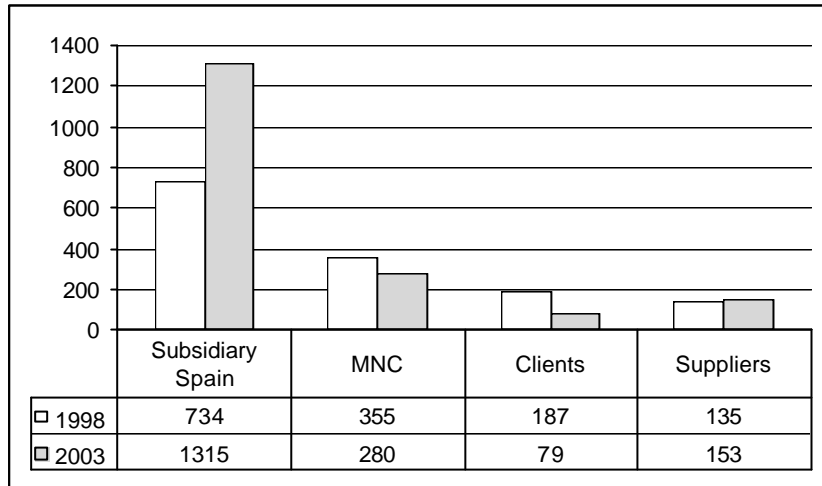
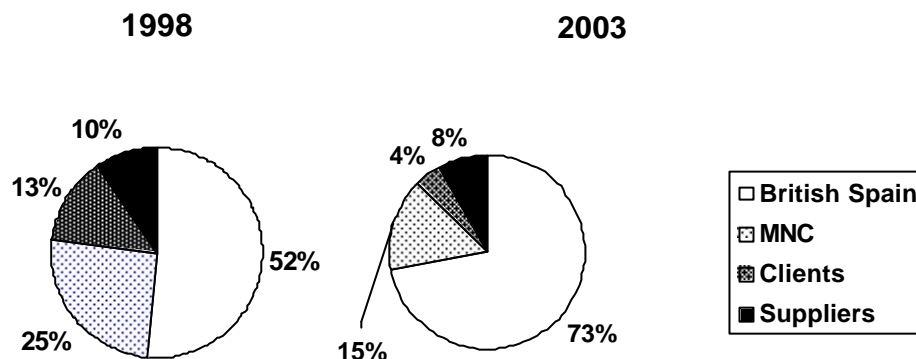


Table 1 shows the changes in the Relational Effort of *Brakes Spain*. The sharp decrease in the number of customer contacts of *Brakes Spain*, from 187 in 1998 to 79 in 2003, reflects both the centralization process in the Marketing and Sales activity, as well as the centralization process in the Program Management function. Being these activities the main sources of contacts with OEMs. It also shows that the level of contacts of *Brakes Spain*, with *Brakes* has marginally decreased, from 355 in 1998 to 280 contacts in 2003. Given that the centralization process in the purchasing function was already working in 1998, no significant difference is found in the relationships with suppliers, being those mainly local firms.

The main observable change is the number of relationships that *egos* from *Brakes Spain* have with *alters* from *Brakes Spain*. That is, we find a significant increment in the number of relationships that *Brakes Spain* has with itself. We have to remember that both databases are different in size, being the one of 2003 larger. Therefore, we can evaluate the change in their relational effort when comparing the percentage of contacts of the key managers of *Brakes Spain* with each type of *alters*

(See Figure 2). In comparing those percentages we can clearly identify that *Brakes Spain* is dedicating more relational effort in dealing with its own operations and less in dealing with outside contacts: 73% of the contacts were with alters in the subsidiary in 2003 versus 52% in 1998. In other words, its level of external embeddedness of *Brakes Spain* has decreased.

Figure 2
Brakes Spain
Relationships by receiver: Percentages
1998-2003



It is not enough to see that the number of contacts between *Brakes* and *Brakes Spain* has decreased. We should go further and study how this pattern of contacts has changed. In order to do this, we constructed a two-mode matrix. In the columns we included the different departments of all the units of the multinational; in the rows we included the different departments of the *Brakes Spain*. The comparison of the density measures gives us the change in the spread of contacts that *Brakes Spain* has with other units of *Brakes*. A higher density implies that the contacts are more spread along a larger number of departments of the different units of *Brakes*; a lower density implies that the contacts are more concentrated in a narrower number of departments in *Brakes*. We also developed a measure of the average number of contacts between two departments by dividing the Relational efforts, number of individual contacts, by the number of the non-blank cells in the matrix. This measure represents Relational Intensity.

As can be seen in Table 2, density decreases from 0,34 to 0,20. Thus, the relationships of *Brakes Spain* are less spread along the different departments in *Brakes* along the period analyzed. The lower number of overall contacts, however, compensates the lower density, and the intensity of the contacts between department does not change significantly (from 5.4 to 5.7).

Table 2
Brakes Spain's corporate ego-network
1998-2003

		1998	2003
Corporate	Density	0,34	0,20
	Relational Effort	355	280
	Relational Intensity	5.4	5.7

Centralization and Organizational slack at the subsidiary level

It happened that one of the explicit objectives of centralization was headcount reduction. Rationalizing European operations was one of the objectives of *Brakes* that was meant to be achieved through centralization of some functions. *Brakes Spain* had consistently been the better performing operating company in productivity, measured as headcount on the level of activity of the operation. Thus, even though the objective of headcount reduction was acknowledged as a legitimate objective for other operations, it was though to be inconsistent with the particular situation of *Brakes Spain*. However a certain objective was set. *Brakes Spain* reduced headcount in two ways. First, it reassigned existing staff to centralized functions, losing management power on them. Second, it reduced headcount by not replacing people who were either retiring or leaving the company. It has to be said that along this process, *Brakes Spain* consistently showed strong positive cash-flows by any standards. Thus, headcount reduction was not caused by the need of recovering and endangered operation.

As has been said above, *Brakes Spain*, had continuously developed initiatives that either developed further business or improved the efficiency of their operations. These initiatives were based on the organizational slack that managers and their staff had.

Centralization and embeddedness within Brakes Spain

If the overall relationship with the external environment has significantly changed, we should focus on how this change has affected the relationship among different units within *Brakes Spain*.

Centralization had the effect of focusing *Brakes Spain* as an operational unit. As a result the contacts among units within *Brakes Spain*, increased. Furthermore, the organization is pressed towards operational excellence, therefore, the intensity of the contacts among the operational units should increase. Table 3 shows density, relational effort, and relational intensity for the contacts among departments within *Brakes Spain*.

Table 3
Brakes Spain's internal ego-network
1998-2003

		1998	2003
Internal	Density	0,44	0,51
	Relational Effort	734	1315
	Relational Intensity	5.9	8.5

Two issues can be highlighted. First, density increases from 0,44 to 0,51. That is, the density of internal relationships within *Brakes Spain* increases. Furthermore, the increase in relational intensity, from 5,9 to 8,5, shows that an increased effort is done to coordinate internal operations. Overall, it can be said that relational efforts that were previously dedicated to increase subsidiary

external embeddedness are now devoted to strengthen internal relationships within *Brakes Spain*.

However these increment in internal relationships should not be evenly distributed. The effort to convert the subsidiary into an operational units focuses of factory efficiency. On the one hand, this implies that factories are going to receive more pressure and that, on the other hand it also implies that local headquarters lost their privileged position as strategy setters and organizational movers. They are transformed into a merely coordination and control unit following the orders of *Brakes*.

Additionally, the need for the plants to relate to the local headquarters decreases as the value added for the future decreases. We should expect them to see an uneven distribution of this increased internal relationship. The relations between local headquarters and the plants should decrease, and as a result, the relationships within the plants should increase. Plant specialization, which is a result of the overall European manufacturing rationalization, also hinders the increase of contacts among the plants.

Table 4
Brakes Spain's internal ego-network
Variables classified by sender and receiver
1998-2003

		1998	2003
Plants Spain – Plants MNC	Density	0,54	0,69
	Relational Effort	230	619
HQ Spain – HQ MNC	Density	0,53	0,56
	Relational Effort	319	408
HQ Spain – Plants MNC	Density	0,33	0,41
	Relational Effort	109	185
Plants Spain – HQ MNC	Density	0,34	0,38
	Relational Effort	76	103

Local HQ, however, does also change its role; from a strategy setting center to a unit that mainly controls and implement strategy. In fact, as some managers reported during the interviews, in 2003,

local headquarters had redefined itself as a service center for the plants. A change program was in place where *Brakes Spain's* CEO was trying to give value added meaning to the differing departments at HQ Spain.

This analysis serves to exemplify the last step in our reasoning: organizational slack affects subsidiary initiative-taking. It can be argued that the increase in density in the internal ego-network is a result of a more tight interaction between plants and between HQ Spain and plants. In other words, centralization has changed the strategic behavior of *Brakes Spain* towards a mere implementer of HQ production mandates. As a consequence, its actual space to behave more strategically is restricted by the consequences of centralization, that alters the pattern of work-based relationships of the subsidiary. In a very short term we will not be surprised that *Brakes Spain* will contribute less in terms of strategic initiatives along the MNC.

Propositions

From our single case study, that mixes qualitative and quantitative data, some propositions can be extracted for further testing.

Centralization and subsidiary embeddedness

Global industries are characterized by the presence of a few, global clients that concentrate their activities to enjoy the benefits of economies of scale and increase their bargaining power towards suppliers. From the point of view of a MNC that serves this kind of clients, it would be necessary to build services that can deal with the client's processes in a global scale. From the point of view of the subsidiary, this process implies losing direct contact with clients and providers in benefit of the central services. We define the external ego-network of the subsidiary as the pattern of relationships

started at the subsidiary towards actors outside the MNC, mainly clients and providers. It follows that:

Proposition 1: In global industries, as centralization increases, the external ego-network of a subsidiary weakens.

Moreover, centralization may request a high level of operational involvement of the subsidiary within the MNC, and its managers may have to deal with their colleagues responsible for the centralized activities. At the same time, subsidiary managers ought to perform their local tasks, forcing them to split their time among global and local activities, a task that less and less managers are able and willing to do (Forster, 2000). The lesser willingness to devote time to international coordination causes operational managers at the subsidiary level to concentrate their attention in their local activities, decreasing the level of coordination with their international operations. In other words, subsidiary managers may reduce its architectural openness as regards the MNC. In other words,

Proposition 2: In MNC's that implement high levels of centralization, the corporate ego-network of a subsidiary weakens.

The corporate ego-network is the pattern of relationships started at the subsidiary and oriented towards other units of the MNC, such as headquarters and other subsidiaries of the group.

Finally, the coordination between the processes performed at the subsidiary level with those performed at the central services may ask subsidiary managers to improve the level of coordination among its plant and local headquarters. This coordination is mainly carried on by the subsidiary

headquarters. They may try to align the strategy of the individual plants both, with local subsidiary strategy and with the MNC's strategy. Accordingly, plant managers concentrate their efforts in the plants. Subsidiary HQ managers, who have seen their authority decreased because of centralization, are going to have to increase their effort to maintain a similar level of coordination of the plants and the MNCs. Therefore,

Proposition 3: In MNC's that implement high levels of centralization, the internal ego-network of a subsidiary strengthens.

With the term internal ego-network we refer to the pattern of relationships that start and finish in actors belonging to the elements that make up the subsidiary, that is to say, to its plants and local headquarters.

Centralization and organizational slack

Coordination tasks between local and global operations is a potential source of organizational slack. Coordination is time consuming and requires a significant amount of managerial resources. The concentration on operational tasks implies a lesser need for managers which reduces the organizational slack. Thus, subsidiaries in the multinational cannot achieve the optimal amount of slack that promotes innovation and an initiative-taking strategic behavior (Nohria & Gulati, 1997). Innovation becomes a global-for-global process, given the lack of coordinated resources and slack that are necessary to develop local-for-local or local-for-global initiatives (Nohria & Eccles, 1992). This slack allow the subsidiary to reinforce its relational effort with the MNC in order to gain access to initiatives elsewhere in the MNC and diffuse their own initiatives in the company. Therefore,

Proposition 4: In MNCs that implement high levels of centralization, the organizational slack of any of its subsidiaries decreases.

As coordination among managers of different units among the MNC is harder, starting processes that end up in an strategic initiative-taking behavior is more difficult. Therefore,

Proposition 5: As organizational slack of a subsidiary decreases, its strategic-initiative behavior weakens.

Conclusions

The need to achieve economies of scale and scope, which is higher in global markets, forces HQ of MNCs to centralize activities. While this process pursues benefits coming from scale and scope, being a reasonable strategy from HQ point of view, it may put into danger the strategic role of certain subsidiaries as the process that underline coordination between operative and strategic processes are threaten by altering the level of embeddedness of the subsidiary.

This case study tries to show how a fine grained analysis of the network of relationships of a subsidiary is a useful instrument to determine the strategic role that a particular unit is playing along the MNC if we try to understand the pattern of relationships that underlines it operative and strategic efficiency. In particular, we posit that high levels of centralization put into danger the performance of the subsidiary. Centralization modifies the network of relationship that supports the business processes on which performance is based. On the one hand, it changes the relationships that have made possible operational and strategic efficiency. On the other hand, centralization has usually an impact on headcount reduction. Thus, it reduces subsidiaries' organizational slack and impedes the unit to act strategically, reducing its ability to coordinate horizontally and the

development of other activities that those mandated from HQ, hindering subsidiary initiative and the strategic contribution to the MNC. We summarize our reasoning under five propositions that may be tested in further research.

Exhibit 1: List of interviews for the paper

Position 1998	Position 2003	Number of interviews	Total length
Regional Manager Europe	Out of Brakes	2	4h
Plant 1 Manager	CEO	4	8 h
HR Director	HR Director	5	13 h
Project Management Director	Divisional Manager	3	6 h
Plant 2 Manager	Out Of Brakes	2	3h
CEO	Divisional Manager	1	2h
R&D Manager	R&D Divisional Manager	2	3 h
Quality Director	Plant 1 Manager	1	3h
Product Engineering	Customer Liaison	1	2h
Plant 2 Engineer Director	Plant 2 Manager	1	2h
Product Testing Manager Plant 1	Product Testing Divisional	1	3h
Marketing & Sales HQ Spain	Out of Brakes	2	3h
Product Engineering Manager	Quality Director	1	2h

Exhibit 2: Network Data Respondents. *Ego's* Composition Variables

		1998		2003	
		#	%	#	%
Firm	Brakes Spain	50	100%	84	100%
Plant	Plant1	8	16%	17	20,3%
	Plant2	10	20%	26	31%
	HQ Spain	32	64%	41	48,8%
Department	Quality	4	8%	11	13,1%
	Commercial	4	8%	8	9,5%
	Purchasing	5	10%	5	6%
	Control	5	10%	8	9,5%
	General Management	6	12%	5	6%
	Product Testing	1	2%	4	4,8%
	Manufacturing	3	6%	10	12%
	Human Resources	2	4%	5	6%
	Research & Development	4	8%	9	10,7%
	Process Engineering	4	8%	9	10,7%
	Product Applications Engineering	12	24%	7	8,3%
	Logistics	0	0%	3	3,6%

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