

## Factors Affecting Transferring Host-Country-Specific Knowledge in Business Groups

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**Abstract:** This paper addresses knowledge sharing in business groups by identifying factors that affect how business groups from an emerging economy transfer host-country-specific knowledge among their group members. Based on in-depth case studies of three business groups in Taiwan, we find that subsidiary autonomy is positively correlated to the reliance on formal mechanisms to transfer host-country-specific knowledge among member firms by headquarters and regional management centers in a host country substitute the role of headquarters in transferring knowledge. For knowledge with tacitness, in addition to social interaction to facilitate the transfer of knowledge embedded in persons, it is necessary to transfer documented knowledge through the use of information technology initially. Product differences and technology gap also affect how headquarters rely on formal mechanisms in transferring knowledge among member firms. Testable propositions are offered in the paper.

**Keywords:** Host-Country-Specific Knowledge;  
 Knowledge Transfer

### I. Introduction

Knowledge about host countries and international environment is needed when firms enter international markets. A firm encounters more challenges when it enters a new market with no knowledge. After entry, it then can gain valuable experiential knowledge about the host country (i.e., host-country-specific knowledge) and this knowledge is helpful for further operation in the country and internationalization (Yu, 1990). Johanson and Vahlne (1977) treated overseas market knowledge as experiential knowledge which includes business knowledge and institutional knowledge. A firm can gain hands-on knowledge by operating in a host market and then it can filter the information gained into forms it needs for internationalization later on.

Previous studies suggest that factors, such as knowledge characteristics, sources and recipients' characteristics, the organizational contexts of transfer and environmental factors, are likely to affect knowledge transfer (Szulanski, 1996; Gupta and Govindarajan, 2000; Foss and Pedersen, 2002; McCann and Mudambi, 2005; Yang, Mudambi and Meyer, 2008). In international contexts, the importance of transferring knowledge to overseas subsidiaries has also

long been emphasized. A series of studies focusing on how to facilitate intra-organizational knowledge transfers in MNCs in general (Kogut and Zander, 1993; Tsai, 2001; Gupta and Govindarajan, 2000), or on the characteristics of knowledge transferred (Simonin, 1999; Szulanski, 1996) have enhanced our understanding of knowledge transfers in MNCs. Gupta and Govindarajan (2000) argued that there are few systematic investigations into the determinants of intra-MNC knowledge transfers.

The knowledge about a specific host country is unique and can create sustainable competitive advantage for a firm to operate abroad. An organization's capacity to share and apply knowledge among its units is increasingly seen as an important source of competitive advantage (Grant, 1996). Building on this premise, previous studies have examined the difficulties involved in keeping a firm's knowledge within its boundaries and the challenges of sharing knowledge across boundaries between firms. Firms also face significant problems in sharing knowledge internally because search costs and barriers to transfer exist at the individual, group, and organizational levels (Gupta and Govindarajan, 2000; Szulanski, 1996; Tasi, 2001; Zander and Kogut, 1995). Transferring knowledge in general has its well-known challenges. Both empirical and theoretical models suggest that knowledge developed and used in one cultural context is not easily transferred to another (Hutchins, 1996), even when the different contexts are within the same firm (O'Dell and Grayson, 1998).

It is important to consider managerial mechanisms which can reduce the difficulties in transferring knowledge within MNCs. For successful knowledge transfer to occur there must be significant internal coordination that is consistent over time and promotes linkages across units. Researches have found that knowledge flows in MNCs are positively related to the use of corporate socialization mechanisms (Gupta and Govindarajan, 2000), and the close ties among MNC units (Szulanski, 1996; Tsai and Ghoshal, 1998). Ghoshal, Korine, and Szulanski (1994) pointed out that "a number of publications emphasize the importance of inter-unit communications for effective MNCs management but none of them is the construct operationalized or measured, nor are the factors that influence such communication empirically explored." With this knowledge gap and also echoing the plea of Ghoshal et al. (1994), we intended to make a contribution to the literature by exploring the factors affecting a foreign member firm (S1) to transfer internationalization knowledge (host-country-specific

knowledge) to other sister firms (S2) in the same host country in a business group. As an initial attempt, we do hope that our findings can shed some light on this issue.

The very reason why MNCs exist is that they are efficient vehicles for creating and transferring knowledge across borders (Kogut and Zander, 1993). An organizational network similar in nature to MNCs is business groups, commonly observed in emerging economies. Business groups are a special type of organizational network composed of independent firms that are linked by ties of friendship, family, or shared equity. Although the importance of knowledge sharing for business groups is well-known, we are surprised to find out that no studies examine how business groups from emerging economies transfer host-country-specific knowledge among their member firms. We chose Taiwan, an emerging economy, as the research setting because of the significance of business groups to the country. For example, in 2008 the total revenues of the top 100 business groups were about 1.4 times of the GNP (China Credit Information Services, 2009). As an exploratory research, we examined three business groups. In addition, the institutional environment may shape the behaviors of firms (North, 1990) because knowledge sharing behaviors of business groups in Taiwan may differ from those in other countries, such as Kereitsu in Japan or Chaebols in Korea. We hope that our findings may be useful for similar studies examining business groups in other countries.

The paper is organized as follows. In the first section we introduce the background of the research about knowledge transfer and sharing. We then review the literature on knowledge transfer and sharing within a firm and between firms. Following the description of research design and discussion of findings, the last section contains managerial implications, limitations, and suggestions for future research.

## II. Literature Review

Organizations should encourage the creation, reorganization, development and diffusion of knowledge. When there exists frequent exchange of knowledge, the quality and quantity of strategic knowledge will increase (Zack, 1999; Alavi and Leidner, 2001; Eisenhardt and Santos, 2002). If managers encourage frequent flow of knowledge within an organization, knowledge production and acquisition will be increased and the effectiveness of knowledge sharing and application will be boosted (Gupta and Govindarajan, 2000). Existing theoretical perspectives such as resource-based view, knowledge-based view, and network-based view provide us valuable insight into knowledge transfer activities within and between firms. Firms strive for competitive advantage by leveraging external and internal resources (Gulati et al., 2000). For the resource-based view (RBV) researchers, the stock of firm assets and capabilities is combinative and cumulative in nature (Kogut and Zander, 1992) and the renewal and development of resource-based

advantage through learning is essential. A firm is further regarded as a result of idiosyncratic resources and capabilities. In developing a firm's resource base for the future, the main task of management is to maximize value through optimal deployment of existing resources and capabilities (Barney, 1991). From the perspective of the knowledge-based view, researchers argue that the primary resource of a firm is its knowledge (Grant, 1996; Spender, 1996). Kogut and Zander (1996) proposed that a firm can be viewed as a social community specializing in increasing the speed and efficiency of the creation and transfer of knowledge. Moreover, hierarchy offers advantages over markets for the transfer of knowledge because internal organizations can create identity that leads to social arrangements that support coordination and communication. As Gulati et al. (2000) showed that firms can be viewed as interconnected by a multiple networks of resources. Due to resource interdependency, the conduct and performance of firms is influenced by the networks in which they are embedded. Within a business group, member firms may possess knowledge that is unique and useful for sister firms. Therefore, transfer of knowledge among member firms enable and facilitate member firms' value creation and eventually lead to the growth of business groups.

Knowledge flows within a MNC may be best understood from a source–target perspective (Mudambi, 2002). In our case, we focus on flows among group members in the same host country and from HQs to subsidiaries. Yang et al. (2008) argued that knowledge transfer is a process in which an organization re-creates a complex, causally ambiguous set of routines in new settings and keeps the routines functioning. In our research, knowledge transfer refers to knowledge senders and recipients interact intentionally and consciously, and after receiving such knowledge, the latter assimilates, modifies, applies and integrates it into its daily operations. Headquarters benefit from their subsidiary knowledge in various ways: Local knowledge help headquarters to fine-tune and coordinate a global strategy, improve processes in their own or other units in the network, or simply provide the missing link in the quest to develop a new product. It might stem from different knowledge domains, e.g. marketing, purchasing or technology. While the possession of knowledge-based assets endows a firm with the potential to benefit in terms of competitive advantage following their transfer abroad, a distinct capability to transfer knowledge efficiently is also required (Martin and Salomon, 2003). Without this capability knowledge transfer is costly (Teece, 1977) and time consuming. Hence there is a need to specify the mechanisms that promote knowledge transfer. Kogut and Zander (1993) argued that while it is difficult to understand and codify knowledge transfer, there is a significant under-specification of the actual mechanisms that enables firms to transfer such knowledge. Subsidiaries tap domestic sources of knowledge which have to be diffused and exploited within the MNC (Foss and Pedersen, 2002) in order to sustain a competitive advantage.

In the view of frequent observations about the challenges involved in successfully transferring knowledge across a MNC's units, a crucial design problem for a MNC's top management is how to choose organizational mechanisms that enhance knowledge flows (Foss and Pedersen, 2002). In particular, although a sizable body of research on MNC control and coordination exists, there is a lack of research on the mechanisms that MNC headquarters may use to ensure that the internationalization knowledge of foreign group members is transferred to the other member firms in the same host country. In addition, previous studies usually deal with knowledge sharing within a firm or between firms and have left out knowledge sharing within business groups. These studies (Dyer and Singh, 1998; Dyer and Nobeoka, 2000; Tsai and Ghoshal, 1998; Tsai, 2000; Tsai, 2001) have assumed that knowledge sharing within business groups does exist. Increasingly researches of MNCs prove that knowledge transfer is not necessarily unidirectional, but bi-directional, or even multi-directional (Cantwell, 1994). Therefore, based on the current understanding of knowledge transfer and sharing within MNCs and the argument that group members will share knowledge with each other, we conducted three exploratory cases studies to further understand how country-specific knowledge for specific overseas market is transferred among member firms in business groups.

### III. Research Design

Considering that business groups are complex multi-dimensional entities, knowledge flows within such groups occur not only along multiple directions, but also across multiple dimensions. To concentrate our efforts, we focused on the sharing of internationalization knowledge (i.e., host-country-specific knowledge) by Taiwan business groups in China (i.e., a specific host country), an emerging economy. Flows of knowledge in a network can be studied from at least three levels: nodal, dyadic, and systemic. Given the highly complex nature of the phenomenon, we used an investment project as an example to trace how knowledge was shared within a business group. We explored under which circumstances and what mechanisms a member firm (S1) adopts to transfer internationalization knowledge (host-country-specific knowledge) to other sister firm (S2) in the same host country. Figure 1 shows the knowledge transfer routes within a business group. Routes that from a headquarters, a regional management center and a member firm (S1) to other sister firm (S2) were covered in this study.

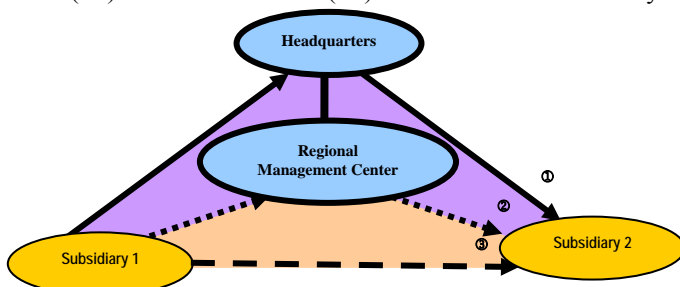


Figure 1 Knowledge transfer routes within a Business Group  
Note: (n) denotes the knowledge transfer routes within a business group. Routes that from a headquarters, a regional management center and a member firm (Subsidiary 1) to other sister firm (Subsidiary 2) were covered in this study.

In the process of internationalization knowledge transfer, organizations are not located within a social vacuum; on the contrary, they are contextually embedded (Granovetter, 1992; Mowday and Sutton, 1993; Kostova, 1999). In this paper, we adopted the result of Fan and Yu's research (2009) that business groups accumulate knowledge about a particular host country (i.e., host-country-specific knowledge) incrementally by solving problems faced by group members in that market. The more significant the difference between the contexts encountered by foreign subsidiaries and headquarters, the more the quantity of knowledge the former needs to create regarding the host country. When similar problems are recurrent and under a tight time frame, the solutions chosen will often be the more appropriate and not necessarily the best. Each time a similar problem appears, a more appropriated solution will be searched based on the specific technical conditions. In this process solutions are modified and improved and gradually approach best solutions. Therefore, the more problems a foreign subsidiaries encounter in a host country, the faster its solutions will accumulate. In a word, when foreign subsidiaries encounter similar problems within a tight time frame in a host country, the accumulation of knowledge about the host country will be faster.

We adopted a multiple-case design in this study. The multiple cases were treated as a series of experiments. We included three business groups in Taiwan. We selected business groups from the 2009 Business Groups in Taiwan, the most comprehensive source for business groups in Taiwan which has already been used in previous studies (Luo and Chung, 2005), published by China Credit Information Service (CCIS) which is the most prestigious credit-checking agency in Taiwan. Consistent with our definition, the CCIS defines a business group as, "a coherent business organization including several independent enterprises." Based on the definition of the business group, we selected three business groups: (1) a business group with main business in notebook computers and motherboards (Group A); (2) a business group producing imaging products, enclosures, power supplies and LEDs (Group B); and (3) a business group with main business in notebook computers and motherboards (Group C).

Our research contained both primary and secondary data. Following Yin's suggestion (1994), qualitative research should adopt triangulation in order to enhance validity. Before each interview, we collected secondary data from annual reports, newspapers, and employee internet forums in order to further our understanding of a business group and its investment profile. Next, we interviewed some employees of the three business groups who have key knowledge of the investment or operations in China. The interviewees included executive officers, their immediate

subordinates, and senior engineers working at the headquarters in Taiwan and the subsidiaries in China. To prepare the respondent, the interview questions were sent by e-mails one week before the interview. This gave the interviewees time to consider the questions and to collect additional information from co-workers. We believed this to be important because we needed the answers to be in-depth and as accurate as possible. We relied on four data sources for each business group including: (1) an initial interview with a chief executive officer and his immediate subordinate at the headquarters for each business group; (2) an interview with a senior vice president of a subsidiary in China; (3) an interview with a senior engineer of a subsidiary in China; and (4) secondary data. The time of each interview lasted approximately 90 to 120 minutes. By gathering different data from different interviewees, we enhanced the validity of the findings.

#### IV. Discussion of Findings

##### **Subsidiary autonomy.**

The stock and flow of knowledge create the possibility of opportunism and hold-up problems within MNCs (Williamson, 1975). There exists competition among peer subsidiaries within an MNC. The subsidiary bargaining power on rent sharing created from the MNC's global operations depends on the nature and patterns of knowledge flow. Asakawa (2001) postulated that the pressure exerted by the subsidiary autonomy must be regulated for the knowledge transfer within MNCs to be successful. Due to the fact that subsidiaries wish to increase its bargaining power within the MNCs to increase its rent sharing as well, TCE suggests "supervision" to prevent the possibility of opportunism. Based on Gupta and Govindarajan (1994) and Jarillo and Martinez (1991), subsidiary autonomy is a kind of formal control and coordination mechanism. Subsidiary autonomy refers to the extent of decision-making authority that the headquarters delegates to the subsidiary. Gupta and Govindarajan (1991) argued that the greater the magnitude and scope of knowledge creation expected from the subsidiary, the greater the need for the exercise of autonomous initiative. In the context of resource dependency theory, Birkinshaw and Hood (1998) indicated that subsidiaries can develop their own unique resource profile. This in turn decreases their dependence on other member firms within the MNC network and increase resource power. The more a subsidiary can function without the rest of the MNCs, the higher both its independence and resource power and hence its ability to attain a high degree of autonomy vis-à-vis its headquarters (Forsgren and Pahlberg, 1992). On the other hand, high knowledge flows among member firms might point at strategically sensitive activities at the subsidiary that the headquarters will want to control (Young and Tavares, 2004). In short, in international knowledge transfer, subsidiary autonomy is positively related to the necessity of formal mechanism. In our three cases, they all

rely on the design of formal mechanisms by the headquarters to advance internationalization knowledge transfer between member firms. Thus we propose the following:

*Proposition 1: In a specific host country, the higher the level of subsidiary autonomy, the greater the necessity the headquarters rely on formal mechanisms to transfer host-country-specific knowledge among member firms.*

Host-country-specific knowledge originating from a local subsidiary will contribute to a business group's internationalization capabilities. Previous studies have indicated that barriers to knowledge transfer among others include motivational factors (Szulanski, 1996). For instance, a subsidiary may be reluctant to transfer knowledge to other units for the fear of losing a position of superiority, or because it is insufficiently compensated for the efforts and costs involved in the process of knowledge transfer (Szulanski, 1996; Forsgren et al., 2000). Given a situation of information asymmetry between foreign member firms and the headquarters, a subsidiary may refuse to transfer knowledge to other sister firms out of its self-interest.

In our cases, headquarters use several kinds of mechanisms as safeguards against opportunism on the part of the subsidiary, such as the use of regional management centers. The regional management centers, established by the headquarters of Group A and Group C, help to accelerate the transfer of host-country-specific knowledge among subsidiaries. With specific missions and authority of increasing the communication interface among group member firms in the host country, regional management centers decrease the costs of supervision and integration of knowledge possessed by foreign subsidiaries. Regional management centers, as the representatives of the headquarters in the host country, have two missions. First, with the delegation of the headquarters, the centers supervise the subsidiaries in the host country which decreases the costs of supervision due to geographical proximity. Second, the centers accumulate, filter and integrate host-country-specific knowledge, thus decreasing the costs of information organization and the costs of coordination among the subsidiaries in the host country. Compared to regional management centers established by western MNEs, the ones established by Taiwan business groups are inclined to handle more complex and versatile knowledge exchange, organization and storage. From a network perspective, integrated players should possess the most valuable knowledge resources. Characterized by high inflows and outflows of knowledge, regional management centers serve as 'knowledge brokers' (Burt, 1992, 1997) or 'regional innovation relays' that span structural holes between local units and global headquarters (Asakawa, 2001). Thus, knowledge benefits, associated with the inflow of knowledge from integrated players, are expected to be highest.

Regional management centers accumulate a vast experience and are capable of absorbing, transferring and applying knowledge adequately. When there exists an important

difference between the professional knowledge of subsidiaries in the host country and the headquarters, regional management centers must act as the knowledge transfer channel for both ends. They can transcend the geographical limitations and establish good cooperation relations between knowledge originator (the subsidiaries in the host country) and knowledge receiver (other sister firms and the headquarters), warranting the success of the knowledge transfer.

*Proposition 1-1: In a specific host country, the existence of regional management centers, established by the HQs, may substitute for the headquarters in transferring host-country-specific knowledge among member firms via formal mechanisms.*

#### **Knowledge embeddedness.**

Zander and Kogut (1995) pointed out that it is relatively easier to transfer knowledge embedded in the products or technology compared to these embedded in other organizational components, such as personnel. It is a continuous knowing activity, and when there exists no interaction among people, the transfer usually fails at the receiver end because he has different tools and lacks contextual experience.

Documented knowledge embedded in a product or equipment (such as operation manuals) and the database files generated by the externalization of an engineer's internal knowledge can be accessed through formal mechanisms. However, based on the three case studies, we found that the knowledge is embedded in the workplace and is not systematic. Thus, engineers need to look for clues in the real context, and without knowing the causal relationship, they have to find an appropriate solution to the problem. This process of interaction in a context cannot be fully codified and recorded. The problem-solving process is dynamic and that the resources that create competitive advantages for enterprises are called "strategic resources" (Barney, 1991). For business groups, the specific knowledge generated from a host-country operations can be considered as a type of "strategic resources" (Nonaka et al., 2000). This type of knowledge in practice involves numerous fields of professional knowledge, distributed in different engineers and related to a specific time, space and background. As it must be interpreted within such context, those who have not encountered the actual issue and interacted with the different professionals can hardly detect the problem. Thus, the specific knowledge provided by the host country is embedded within the actual context and created after the interaction among the involved parties.

*Proposition 2: In a specific host country, for knowledge with tacitness, information technology is necessary in transferring knowledge initially and social interaction is needed to transfer the knowledge embedded in persons.*

#### **Product differences.**

When the products are different, the corresponding processes of assessment and development cannot be

exchanged. The only item that can be exchanged is the methods of reducing manufacturing costs.

In addition, due to interface closeness, both of them are limited by universal standards (full-size, mini-size, long version, short version). Thus, their engineers have a greater demand of exchanging and reproducing knowledge on primary value activities. However, as they usually sign a confidentiality agreement with the customers, they are not allowed to offer all the detailed contents and specifications. What they can do is to exchange information on practices; for example, how to overcome the specification restrictions.

*Proposition 3: In a specific host country, product differences affect on how headquarters rely on formal mechanisms in transferring knowledge among member firms.*

#### **Technology gap.**

When there exists a significant knowledge gap between two parties (Leonard-Barton and Spensiper, 1998) or their information is not complete or equal (Teece, 1998), without internal informal exchange mechanisms or interaction channels, it is not possible to reach a mutual understanding and implement the knowledge transfer process. Thus, informal mechanisms help reduce the impact of the technological gap between two parties and enable knowledge transfer.

*Proposition 4: In a specific host country, when the technology gap between member firms is significant, informal mechanisms reduce the negative impact on transferring the host-country-specific knowledge among member firms.*

## **V. Conclusion**

The purpose of the study was to identify factors that affect how business groups from an emerging economy transfer host-country-specific knowledge among their group members. The effective internal transfer of knowledge -- the dissemination of knowledge from one division to another division within the same firm -- is not likely to be easy or automatic (Hedlund, 1994; Nonaka and Takeuchi, 1995; Szulanski, 1996). While the business group's network provides a platform for facilitating flows of host-country-specific knowledge, the mere existence of such a network does not automatically result in knowledge transfer. From managerial viewpoint, both formal and informal mechanisms should be in place to promote and encourage host-country-specific knowledge transfer. Gaining a good understanding of the mechanisms contributing to knowledge transfer is strategically important for knowledge management. Regarding the use of mechanisms, our results indicate that the buildup of internationalization knowledge can go along with a firm's development in foreign markets and also can allow for accumulation of various types of knowledge. The more significant the difference between the contexts encountered by foreign subsidiaries and headquarters is, the more the quantity of knowledge the

former will create regarding the host country. When foreign subsidiaries encounter similar problems within a tight time frame in a host country, the accumulation of knowledge about the host country will be faster.

A headquarters can successfully implement multiple formal and informal mechanisms for knowledge transfer. With respect to knowledge transfer, the higher the level of subsidiary autonomy, the greater the necessity the headquarters rely on formal mechanisms to transfer host-country-specific knowledge among member firms. Encouraging sharing within a business group through some managerial mechanisms can wear down the negative influence caused by opportunism and information asymmetry on the part of the subsidiary and the inter-member competition for the transfer of host-country-specific knowledge. Regional management centers accumulate a vast experience and are capable of absorbing, transferring and applying knowledge adequately. They can transcend the geographical limitations and establish good cooperation relations between knowledge originator (the subsidiaries in the host country) and knowledge receiver (other sister firms and the headquarters), warranting the success of the knowledge transfer. Provided that knowledge is tacit, information technology is necessity in transferring knowledge initially documented while social interaction is needed in transferring the rest knowledge embedded in persons. Finally, product difference and technology gap are factors affecting how headquarters rely on formal mechanisms in transferring knowledge among member firms.

## **References**

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