Knowledge Transfer Through Expatriation: The U-curve Approach To Overseas Staffing.

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While group intellectual capital, manifested in the ability to transfer core competencies from one experience to the next, is critical for sustaining competitive advantage, today's organization faces the difficulty of measuring and managing these intangible assets. Here we examine the unique role of expatriate managers in enhancing group intellectual capital by facilitating the transfer of knowledge across national borders. Thus, while expatriates (or home-country managers sent on overseas assignments) represent costly and sometimes unsuccessful endeavors, expatriation remains a viable staffing strategy among multinational corporations (MNCs) for several reasons. Among these are the potential to (1) facilitate the communication process between the parent location and its subsidiaries, as well as across subsidiaries, (2) aid in establishing country linkages, and (3) increase the firm's understanding of international operations. As such, the practice of employing expatriates may be a strategic move on the part of an MNC to increase the international experience and knowledge base of present and future managers (Boyacigiller, 1991). Thus, expatriation is a tool by which organizations can gather and maintain a resident base of knowledge about the complexities of international operations.

The expatriation literature frequently cites the need to transfer resources abroad as a primary reason for expatriating home-country nationals to foreign affiliates (Dowling et al., 1994). However, the process of expatriation remains void of any deeper theoretical explanation or empirical support. The number of home-country expatriates in subsidiaries is often taken as an index of internationalization (Kobrin, 1988). It is suggested here that the relationship between expatriation and internationalization is grounded in theory, and that the nature of this relationship will change as internationalization takes place.

This article is concerned with the expatriation strategies of firms at different levels of organizational experience abroad, both in specific national markets and in the international marketplace as a whole. It was expected that, at both levels of analysis, firms gradually increase the use of expatriates but at some point begin to pull back on their use in favor of local nationals. This expectation was based on the learning process that firms undergo about operating within certain markets (i.e., national laws, politics, cultures), as well as the applicability in one market of lessons learned in others. The flows of two types of information, referred to as market-specific and general knowledge, are illustrated in Figure I. The cycles represented by Paths 1 and 2 are market-specific. That is, Path 1 represents the flow of organizational knowledge (i.e., corporate philosophy, policies, procedures) to the subsidiary through the expatriate manager. Path 2 represents the flow of market-specific knowledge, as picke d up by the expatriate, and shared with the parent company. Knowledge flows back to the parent company occur during expatriate assignments as well as upon repatriation. With each successive expatriation into the country, the company and the expatriate manager are more informed about how to operate there. As such, Path 1 increasingly reflects more market-specific knowledge brought back to the subsidiary location. As this cycle occurs in more than one national market, firms are able to capture synergies (Path 4) that result from accumulated market-specific knowledge (Path 3). As this overall cycle repeats itself, Path 1 increasingly reflects these synergies and may enable the firm to streamline its expatriate population.

The remainder of this article is divided into four sections. The first section provides the theoretical background on how intellectual capital is developed through the continuous transfer of core competencies, a process known as organizational learning. It also establishes the applicability of organizational learning in the international context and describes the role of expatriates in facilitating the learning process, followed by the hypotheses to be tested. The second section describes the methodology, including data collection and measurement of variables. Results are provided in the third section, and the final section discusses the implications of these findings and offers some suggestions for continuing with this line of inquiry.

THEORETICAL BACKGROUND AND HYPOTHESES

Organizational Learning

The dictionary defines learning as "the acquiring of knowledge or skill." It encompasses both the acquisition of "know-how," which implies the physical ability to produce some action, and the acquisition of "know-why," or the ability to articulate conceptual understanding of an experience (Kim, 1993). At the organizational level, the learning process is fundamentally different (March and Olsen, 1975). While individuals learn by acquiring tacit knowledge through education, experience, or experimentation, this learning need not be shared. Organizational learning, on the other hand, occurs as individual learning is shared and transferred to new individuals, whether across boundaries of space, time, or hierarchy. The literature on learning methods is somewhat fragmented, ranging from behavioral/strategy level learning (Duncan, 1974) to habit-forming/discovery (Hedberg, 1981) to reactive/proactive learning (Miles, 1982). However, the majority of learning theories tend to converge on the distinction between single - and double-loop learning processes, as introduced by Argyris and Schon (1978).

Single-loop learning, also referred to as learning at the procedural (Miller, 1996) or lower level, focuses on influencing behavioral outcomes such as the steps necessary to complete a particular task. This know-how is captured in routines, such as filling out forms, operating a piece of machinery, or handling a switchboard. These standard operating procedures (SOPs) accumulate and, in turn, change routines. Double-loop learning, which may be thought of as conceptual (Kim, 1993) or higher-level learning, aims to create new insight, heuristics, and a collective consciousness within the organization (Fiol and Lyles, 1985). Conceptual learning has to do with thinking about why things are done in the first place, challenging the nature or existence of prevailing SOPs (Kim, 1993), and it often produces specialization and highly differentiated organizational designs that in turn promote nonroutine behavior (Levitt and March, 1988).

Although many typologies are available for understanding how learning occurs, Miller's (1996) integrative framework allows for the distinction between lower and higher orders of learning as well as between learning at the individual and organizational levels, and is therefore helpful in laying the foundation for the current study. Miller (1996) identified and categorized six modes of learning, as described below, on the basis of two dimensions--methodological and emergent.

Methodological inquiry is analytical and deals with objective facts. It is systematic and often tests notions deductively. Facts are gathered and evaluated in an orderly way and with explicit purpose (Ansoff, 1965). In contrast, emergent rationality is spontaneous and intuitive, and it centers on instincts and impressions. Intuitive managers learn tacitly and inductively, and choices might be made quite unconsciously (Miller, 1990; Mintzberg, 1989). Each of these is described in more detail as follows.

Methodological

Analytic: Intensive analysis due to careful environmental scanning.

Experimental: Similar to analytic learning, except that action sometimes precedes analysis in the learning cycle (Weick, 1979), implying "learning by doing."

Structural: Codification of prior learning by specifying how to carry Out tasks and roles efficiently. This is learning via routines or SOPs.

Emergent

Synthetic: Combines pieces of knowledge so that the whole is greater than the sum of the parts and is characterized by harmony, consistency, and fit (Mintzberg, 1989).

Interactive: Learning by doing, but the learning is less systematic (than with experimental learning). It is impulsive and implicit, achieved, for example, by bargaining with each other and with external stakeholders (Cohen et al., 1972).

Institutional: Learning by a very large group, so that knowledge is widely diffused, by establishing organizational myths and legends, harmonizing the values of the leader or some other organizational constituent.

As we can see, some of these methods can be experienced by individuals, such as analytic, experimental, and interactive. Structural, synthetic, and institutional learning, on the other hand, must be experienced at the group level by definition.

Furthermore, it is easy to see that the methodological modes resemble those of procedural learning and that the emergent modes are our higherorder, conceptual experiences. The relevance of various learning methods to the expatriate experience is established in a later section.

Organizational Learning Theory: Traditional and Contemporary Approaches

Organizational learning theory, in the traditional sense, has focused on systematic processes that firms undergo as they grow older. Aldrich and Pfeffer (1976) suggest that organizations are evolving towards bureaucratic structures over time. Starbuck (1965) found from his review of relevant research that organizations become formalized with age; that is, they develop characteristic roles into which individuals settle, patterns of behavior stabilize, and standard operating procedures are established. He concluded that the formalization process is fundamentally an adaptive process. As an organization gets older, it learns more and more about coping with its environment and with its internal problems of communication and coordination. Similarly, according to Chandler (1977), once managerial hierarchies have been formed, these hierarchies themselves became sources of permanence, power, and continued growth. The learning process is officially enforced when processes which emerge are sanctioned and fixed in job d escriptions, organizational handbooks, or planning systems (Cangelosi and Dill, 1965).

Contemporary approaches to understanding how learning takes place at the organizational level tend to focus on the "learning organization"u "one that uses collective reasoning and the intelligence of the whole organization in making learning rather than intimidation the major tool of management" (Starkey, 1998: 536). This modern paradigm makes learning the job of everyone in the organization, encourages dialogue in order for individual members to understand where their learning fits into the bigger picture, and calls for less commanding and controlling leaders who will have faith in organizational members to solve problems (Bennis, 1993).

Learning Through Internationalization

For the new paradigm, particular emphasis is placed on learning as a distinctive competency that will lead to competitive advantage. In fact, De Geus (1988) argues that the ability to learn faster than competitors may be the only sustainable competitive advantage. In today's competitive landscape, the old ways may not produce results and organizations may need to change, modify the rules, and encourage new behaviors in order to ensure their continued competitiveness and survival. And, modifying the rules requires collective learning. While single-loop learning is about doing the same things, but doing them better and more efficiently, double-loop learning is about coming up with ways to do them differently, or even perhaps doing different things. Both types may be key sources of competitive advantage for the organization. Superior information or know-how, achieved, through efficiency or differentiation, may be used as a way to inhibit imitation by competitors. Although leakage of proprietary information or d istinctive capabilities is usually inevitable, whether through suppliers, customers, or employees, it is much more difficult to duplicate those which are tacit and collectively held by the organization.

In the case where an organization expands overseas, it undergoes the learning process on a worldwide scale. Organizations typically enter foreign markets via exporting and increase their involvement through licensing and joint venture agreements, eventually establishing wholly-owned subsidiaries abroad. This increase in the level of involvement and commitment to foreign markets is known as internationalization (Bilkey and Tesar, 1977; Johanson and Weidersheim-Paul, 1975; Johanson and Vahlne, 1977). According to Chang (1995), firms sequentially approach foreign entry with learning gained from past entry experience. The learning from earlier entry experience enables firms to build organizational capabilities to operate overseas and to launch further entries into areas where they have less strong competitive advantages.

In distinguishing between market-specific and general knowledge (Johanson and Vahlne, 1977), we find that both national and corporate culture are transmitted across subsidiaries, respectively. Market-specific knowledge is characteristic of the national market, its business climate, cultural patterns, structure of the market system, and, most importantly, is characteristic of the individual customers and suppliers. General knowledge, on the other hand, is cumulative in nature. Firms may learn from previous globalization efforts and reduce the barriers that prevent them from freely tapping cheap

labor, new technology, and foreign product markets. According to Barkema et al. (1996), the creation of foreign production facilities is predicated on the knowledge that has been accumulated previously. While market-specific knowledge is gained mainly through experience in the market, general knowledge can often be transferred from one country to another.

Expatriation as a Means of Transferring Knowledge

Prahalad and Hamel (1990) suggest that a core competence is based on collective learning in the organization and that firm strategy should be learning-driven. In fact, competitive success will be based less on how strategically physical and financial resources are allocated and more on how strategically intellectual capital is managed--from capturing, coding, and disseminating information to acquiring new competencies (Bontis, 1996). We may conclude, then, that core competencies are developed from organizational learning. Furthermore, for core competencies to be effective, they must be perpetually evolving via continuous organizational learning (Lei et al., 1996).

The internationalized firm must continually develop its intellectual capital, through a variety of functions, businesses, and countries. Initially, international activity lacks the critical mass necessary to operate effectively, and the MNC breeds "ethnocentric" tendencies (Heenan and Perlmutter, 1979) emanating from the parent location. As international activity grows, however, this activity will tend to acquire momentum as firms gain both market-specific and general knowledge through their expatriates. As firms set up facilities overseas, there is an immediate need for an expatriate population for the purpose of resource transfer. Such corporate agendas suggest a deliberate purpose--that of resource transfer--in expatriating key personnel abroad. In essence, this transfer process is cyclical, with the subsidiary location as the recipient of general knowledge during expatriation and the corporate location as the recipient of market-specific knowledge during the assignment as well as upon the manager's return.

Throughout the organization's evolution, it will inevitably learn at the lower level, by virtue of "learning by doing," but conscious effort must be made to learn at the higher level. Johanson and Vahlne (1977) assert that the less structured and defined the activities, the more important this experiential learning will be, and further that it is particularly important in connection with activities that are based on relations to other individuals, such as management and marketing activities. Applied to MNCs, learning is occurring with each successive international endeavor. As the expatriation-repatriation cycle repeats itself, learning is increasingly of the structural, synthetic, and/or institutional types, as knowledge is shared over time and across subsidiaries. So, this study rests on the premise that internationalization inherently breeds a certain degree of learning.

It is expected that as firms internationalize, they will gradually increase their expatriate population in order to expand their international knowledge base, but that the use of expatriation will diminish as international experience is gained. This logic is similar to Franko's (1973) theory of the evolution of the MNC, where expatriates were also viewed as the transferors of knowledge abroad. Findings for both U.S. and European firms indicated that the use of home-country expatriates fades over time in favor of local nationals, but that expatriate populations increase again during high maturity as a multinational. While a slight resurgence of expatriates at various times is entirely possible (even on the decline), it is expected here that the overall pattern from a long-term perspective will be that of a U-curve.

Due to the "learning by doing" and subsequent expansion of both market-specific and general knowledge base, this theory is expected to hold up at two levels--the overseas subsidiary and the overall firm level. In the early stages of the subsidiary establishment, the expatriate acts as a vehicle for facilitating the transfer of SOPs, technical and managerial expertise, corporate philosophy, and overall "best practices" for operating internationally. Over time, as the systems and practices of the parent are imparted on the subsidiary, the role of the expatriate may be diminished, allowing for the recruitment and training of host-country nationals in his/her place. The subsidiary accumulates market-specific knowledge by virtue of continuous exposure to the socio-cultural, political, legal, and economic sectors of the host environment, continuously expanding its knowledge base. Once again, expatriates are an important vehicle in this transfer process while on assignment and once they have been repatriated. Based on this logic, it is hypothesized that:

H1: There will be a negative curvilinear relationship (downward slope) between country experience and the proportion of expatriates in that country's subsidiary.

As both directions of knowledge transfer are iterative and occurring in many markets simultaneously, the general knowledge that is stored at the parent company increases as well. Specific market information from diverse locations is integrated with the organization's existing knowledge base. In time this knowledge translates to infrastructural adaptations, such as superior training and scanning mechanisms. Once generalized to the organization, it flows back to the subsidiaries. The organization processes this information, which then emerges in the form of general knowledge which is more meaningful to the organizational as a whole. Thus, over time, the organization's overall need to engage in expensive expatriation is reduced. Therefore, it is further hypothesized that:

H2: There will be a negative curvilinear relationship (downward slope) between the degree of overall firm internationalization and the proportion of expatriates in the firm as a whole.

METHODS

Data Collection and Sample

The sample of companies for this study was drawn from U.S. Fortune 500 MNCs in two sets of related industries. The first set included firms in the computers/office equipment and electronics industries, and the second set included firms in the petroleum refining and chemicals industries. The sample was restricted to U.S. MNCs in order to maintain parent-country homogeneity. In order to capture the effects of international experience on expatriation, there must be sufficient variance on the internationalization continuum. In order to provide this variance, the study was designed around firms from industries with maximally different international histories. Both the petroleum refining and the chemicals industries have long histories of international operations, whereas the computer industry, and to a lesser extent electronics, are relatively new to the international arena. Industry was then held constant in the subsequent analyses so as not to confound the relationship of interest.

Human Resource (HR) managers of Fortune 500 firms facilitated the administration of surveys to expatriates. Information on the survey was used to test two different research hypotheses (H1 and H2 above). The first addressed the extent of firm experience in a given country subsidiary and the proportion of expatriates used in each subsidiary. Therefore, each subsidiary is a case in and of itself. Where the HR Manager did not report on all subsidiaries, this hypothesis could still be tested on any case for which country experience (or subsidiary age) and proportion of expatriates in the subsidiary were provided. The total number of cases considered usable for H1 in this set was 235. H2 addressed the level of overall firm internationalization and the proportion of expatriates used by the firm as a whole. Each HR Manager Survey (or each firm) represented one case. Thirty-two HR Manager Surveys were received out of a total of 46 that were sent out, for a response rate of 70 percent.

Measures

Proportion of Expatriates. The proportion of expatriates in a given overseas subsidiary was calculated by dividing the number of U.S. nationals in each subsidiary by the total number of professional-level employees in that subsidiary. The proportion of expatriates in each MNC as a whole was calculated by dividing the number of U.S. expatriates employed by the firm in all of its overseas subsidiaries combined by the total number of professional-level employees in all of the overseas subsidiaries.

Degree of Internationalization. Sullivan's (1994) composite index was used to measure the degree of internationalization (DOI) of the firm, as it is the most recent conceptualization with sufficiently high reliability (alpha = .79). The DOI index incorporates five objective ratio measures of overseas involvement:

1. Foreign Sales as a Percentage of Total Sales (FSTS)

2. Foreign Assets as a Percentage of Total Assets (FATA)

3. Overseas Subsidiaries as a Percentage of Total Subsidiaries (OSTS)

4. Psychic Dispersion of International Operations (PDIO)

5. Top Mangers' International Experience (TMIE)

The DOI score for each MNC is the sum of each individual measure, where the range of values for DOI is 0.0 (no international involvement) to 5.0 (complete international involvement).

All components of the index were obtainable from published sources. FSTS and FATA were represented by three-year averages (1993, 1994, and 1995) in order to control for changes in exchange rates and accounting standards and were obtained from company annual reports. The logic behind using three-year averages is that currency fluctuations and accounting rules can have profound effects on a company's income statement and/or balance sheet for a given year. Such extreme cases can be omitted from the calculations, while still providing financial data for comparable years. Dun's Directory of American Corporate Families and International Affiliates (1996) supplied the frequencies and distributions of subsidiaries necessary to calculate OSTS and PDIO. PDIO was simply the proportion of those psychic zones identified by Ronen and Shenkar (1985) in which the firm had international subsidiaries. These zones, or country clusters, with the addition of a category for "other' counties, include Anglo, Germanic, Nordic, Near Eastern, Arab, Far Eastern, Latin American, Latin European, Independent, and Other. In order to assess TMIE for each participating firm, data on the career histories of top managers were obtained from Dun's Reference Book of Corporate Managements (1996). This ratio represented the number of years of overseas work experience of all top managers combined as a proportion of the team's total work experience.

Country Experience. Subsidiary age was used to capture the phenomenon of country experience. In the event that an organization had more than one subsidiary in any given country, the age of the oldest subsidiary was used.

RESULTS

The distribution of the firms by industry along the country experience and degree of internationalization continuums are shown in Figure II. It can be seen from the figure that the petroleum/chemicals industry is characterized by greater overall internationalization but not necessarily by older subsidiaries. However, the distribution along the country experience dimension does provide enough variance to test its effect on expatriate proportions based on the sample firms responding in the study.

Correlations and descriptive statistics for the variables of interest are displayed in Table 1. Since the study involves analyses at both the subsidiary and company levels, descriptives are provided for each of these levels. The top portion of the table combines data at the subsidiary and the overall firm level, since it is possible to assign the appropriate company-level DOI score and corresponding proportion of expatriates to each subsidiary. There is a strong, positive association between the proportion of expatriates in individual subsidiaries and the proportion of expatriates used by the firm as a whole (r = .248, p[less than].0l). In addition, there is a high, positive correlation between experience in a given country and overall firm international experience (r = .192, p[less than].0l). However, there is the possibility that, for a firm where data on many subsidiaries were supplied, the corresponding DOI score is more heavily weighted than for a firm reporting on only a few of its subsidiaries. Theref ore, results for DOI should be interpreted with caution, as a given DOI level is likely to have been applied to many data points. The bottom portion of the table, on the other hand, treats company-level information as one case only. At the aggregate level, there is no discernible subsidiary information either on specific experience or expatriate populations in the various markets. Finally, means and standard deviations for the proportion of overall expatriates used by the firm were not computed, as these proportions were infinitely small.

Two sets of multiple linear regressions were run to test the hypotheses for country experience and DOI, respectively. Both country experience and DOI were operationalized as continuous variables in order to maintain the richness of information available. Independent variables in the analyses included country experience (or DOI, in the second set of analyses), the quadratic term, and a dummy variable to control for industry. Results of the regression analyses are shown in Table 2.

Expatriation and Country Experience

H1 stated that there will be a curvilinear relationship between country experience and the proportion of expatriates in that country's subsidiary. A quadratic function did fit the data for country experience and the proportion of expatriates in that subsidiary. However, contrary to H1, this curvilinear relationship is positive (upward slope). The proportion of expatriates in the subsidiary, expressed by the following function, yielded an adjusted R square of .094 (F = 8.792).

prop subsid exp = f([b.sub.o]..ind[b.sub.1]..doi[b.sub.2]..[doi.sup.2][b.sub.3]..e)

This model was significant at the .000 level of confidence. With a substantial number of observations (n = 235), it was possible to explore this relationship further by dummy coding subsidiary age as young and mature and later into three age categories. As a final step, these analyses were repeated for each industry separately. Results of all analyses are shown. in Table 3 and are explained below.

Quadratic Regression. As mentioned above, the quadratic function, while significant, was not in the hypothesized direction. By performing the same analyses for each industry, we also find a significant, positive quadratic relationship between subsidiary age and proportion of expatriates for firms in the petroleum/chemicals industry (F = 5.497, p[less than].01), while a quadratic function did not fit the data for the computers/electronics industry.

One-Way ANOVA (2 Groups). The distinction between young and mature subsidiaries was defined as lower or higher than .25 standard deviation from the mean in either direction. The rationale behind this approach was that a mean split did not provide enough variance between those cases close to the mean on either side. Therefore, it was necessary to eliminate some cases from around the mean, with the intent of removing as few as possible. As a result, subsidiaries less than 17 years of age were considered young, and those older than 26 were considered mature. One-way ANOVA procedures for differences among means revealed a significant difference in the mean proportion of expatriates in young and in mature subsidiaries when considering the sample as a whole (F = 4.453, p[less than].05) and for the petroleum/chemicals industry alone (F = 6.751, p[less than].01). In both cases, the use of expatriates was significantly reduced from the young to mature stages. However, mean proportions of expatriates did not differ significantly across the two categories for the computers/electronics industry.

One-Way ANOVA (3 Groups). The distinction between young, medium and mature subsidiaries was defined by cut-offs .33 standard deviation from the mean. This allowed for considerable variance between the two extreme categories and also divided the sample (both industries combined) into approximately equal groups. As such, young subsidiaries were 14 years of age or younger, medium-aged subsidiaries were those from 15 to 27 years old, and mature subsidiaries were at least 28 years old. One-way ANOVA procedures again revealed significant differences among the mean proportions of expatriates, both for the sample as a whole (F = 5.320, p[less than].0l) and for the petroleum/chemicals industry (F = 6.185, p[less than].0l), but not for the computers/electronics industry. The division into three groups meant that multiple comparisons were made, and therefore Tukey's honestly significant difference test was used to ascertain across which of these categories differences were indeed significant. Table 3 shows that for the full sample as well as the petroleum/chemicals industry, younger subsidiaries employed significantly fewer expatriates than did the medium-aged or the mature subsidiaries. However, for the sample as a whole, there is a slight resurgence of expatriates from the medium to the mature stage. This is not true for the petroleum/chemicals industry. In fact, in this industry there is a continued decline in the use of expatriates across the three stages.

It should be noted that Fortune 500 firms in the two sets of industries studied here do not represent the youngest of subsidiaries. For instance, in expecting a negative curvilinear relationship between country experience and the use of expatriates in that country, data for the upward slope (or the left side of the curve) were not actually collected. This would have been captured by subsidiary ages close to zero.

Expatriation and Firm DOI

H2 stated that there will be a curvilinear relationship between overall firm degree of internationalization and the proportion of expatriates in the firm as a whole. Again, a quadratic function did fit the data, as shown in Table 2, and thus H2 is supported. The proportion of expatriates in the firm, expressed by the following function, produced an adjusted Rsquare of .313 (F=5.706).

prop total exp = J([b.sub.0]..ind[b.sub.1]..doi[b.sub.2]..doi2[b.sub.3]..e)

This model was significant at the .001 level of confidence and indicated that a negative curvilinear relationship exists. Therefore, firms with limited international experience, as well as those with the most extensive experience abroad, employ the lowest proportion of expatriates. It is those firms with moderate experience abroad that engage most heavily in an expatriation strategy. Splitting the data by industry, we again find a similar relationship for petroleum/chemicals firms but not for those in computers/office equipment. Findings within industry, however, are interpreted with caution, given the limited number of observations for H2.

DISCUSSION AND IMPLICATIONS

The purpose of this study was to investigate the relationship between international experience and the proportion of expatriates, both at the overall firm level and at the subsidiary level. A significant relationship between expatriation and country experience allows for an advancement in the field of International Human Resource Management (IHRM) by providing a theoretical explanation for why expatriation prevails as a staffing practice among MNCs. The inclusion of organizational learning, a theory which is embedded in the literatures in both strategy and internationalization, represents a logical step in legitimizing the practice of expatriation from a theoretical perspective.

The model specified here combines two distinct streams of research. This study is the first of its kind, integrating paradigms from the organizational development and international human resource management disciplines into a cohesive platform for understanding how relationships can change given different sets of circumstances. While the body of literature in several disciplines has incorporated longitudinal dimensions, as well as other contingencies, into theoretical models, the potential role played by internationalization has been largely overlooked.

Based on the findings, young subsidiaries have proportionately larger expatriate populations than do those which have been up and running for many years. This pattern is consistent with the organizational objectives behind expatriating--to transfer tangible as well as tacit resources to the overseas affiliate through the expatriates and to pull back on the use of expatriate assignments as these transfers are completed. In addition to an overall reduction in expatriate managers over the life of the subsidiary, results indicated that the drop is quite pronounced almost immediately, but that the strategy of expatriating picks up slightly as subsidiaries become much older. It is likely that a renewed practice of expatriation is either the result of technological advancements and/or product and service innovations, which may render some previous knowledge obsolete and perhaps dictate updates in subsidiary learning. It is also possible that expatriate rotations overlap more in mature subsidiaries since organizatio nal initiatives are often in place abroad to facilitate the transfer back home. However, findings indicate that subsidiaries of petroleum/chemicals firms experience a decline in the use of expatriates even as subsidiaries become quite mature.

When considering the expatriate practices of the firm as a whole, it appears that expatriate populations worldwide are heaviest for firms just beginning to internationalize as well as for those with extensive international experience. At some point in between, however, firms pull back on the use of expatriates in favor of local nationals in their various markets.

While there is a strong theoretical foundation to suggest that an increase and subsequent decrease in the use of expatriates is the result of successful bi-directional knowledge transfers, it is possible that this relationship is industry-specific. The pattern of expatriation in the petroleum/chemicals industry, for example, may be consistent with research and development patterns in the industry. R & D intensity may necessitate an expatriation strategy in order to ensure successful knowledge transfer while reducing the probability of information leakage. Firms may also engage more heavily in expatriation in politically risky environments, since the bargaining power of host governments to insist on local employment is limited. It is also possible that firms expatriate more often to host countries that are culturally similar to that of the parent country, as expatriate adjustment may not be as difficult.

Limitations and Suggestions for Future Research

The way in which "professional-level employees" was defined deserves a word of caution. HR managers in each participating organization determined which of its employees were considered "professional-level" and thus there may be some variability in the sampling. Characteristics of the expatriates in the participating firms, however, indicated a high percentage with at least a bachelor's degree and holding at least the tide of "manager" or "director" or "supervisor."

While this study represents an attempt to balance both internal and external validity, by selecting two sets of related industries, generalizability remains somewhat limited. Subsequent research on patterns of expatriation may be well-served to study other sets of industries, both for comparative purposes and to assess the generalizability of the current findings. For those studies pursuing the role of internationalization, it may be helpful to pre-select firms and subsidiaries based on the variance they represent on international experience, both at the overall firm level and at the subsidiary level. And, at the subsidiary level, it is recommended that experience be assessed at the point of initial presence in a given country in order to get an accurate account of the firm's country-level familiarity. Efforts to improve the internal validity may include examining expatriate strategies of a more homogeneous set of companies (such as those in only one industry) and subsidiaries (such as those located in count ries characterized by similar levels of economic development or political risk). It may also be interesting to ascertain whether firms prefer to expatriate home-country nationals to lesser-developed countries (LDCs) as opposed to the more industrialized locations. In addressing these issues, future research endeavors may include more qualitative components for capturing the dynamics behind the use of expatriates.

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