

**MULTINATIONAL CORPORATION LEARNING AS A ROUTINE-BASED
ACTIVITY: LINKING KNOWLEDGE TRANSFER TO
INSTITUTIONALIZATION OF ACQUIRED KNOWLEDGE**

By

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INTRODUCTION

The study of organizational learning has proliferated in the field of economics (e.g. Rosenberg 1982), change management (e.g. Pettigrew 1988) and strategic management research (e.g. Prahalad and Hamel 1990). A large body of research has extensively studied the mechanisms behind learning processes (for a review, see Huber 1991; Argote 1999), as well as their encoding into behavioural routines (Cyert and March 1963; Nelson and Winter 1982). The behaviourist tradition prominently contributed to this vast body of research by modelling learning as a change process (March and Simon 1958; Cyert and March 1963). This stream of research rests on the assumption that organizations learn when their experience results in behavioural change (Greve 1998). It is argued that organizations encode inferences from history into routines that guide their behaviour (Cyert and March 1963; March and Simon 1958). This implies that behaviour is routine-based, history-dependent and target-oriented. However, this line of thinking has to a lesser extent percolated in international business research.

Most of the international business literature tends to equate organizational learning with knowledge transfer (e.g. Zahra *et al.* 2000; Macharzina *et al.* 2001). Organizational learning as a routine-based activity in international contexts has not received due attention. This stems from the focus on the tangibles of knowledge transfer and the determinants of organizational learning in an international arena (e.g. Bartlett and Ghoshal 1989; Barkema and Vermeulen 1998). Context-based investigations into the intangibles or the aspects of the social system that shape the learning process have received less attention (exceptions include Fruin 1997; Brannen 2004). Organizational learning is typically reflected as the transfer of best practice that leads to firm survival and effective performance, and understood as knowledge flowing across industries and countries in a form abstracted from the wider social networks. The objective of this paper is to introduce the behaviourist assumptions of organizational learning to the research on the multinational firm. This would allow us to go beyond the tangibles of knowledge transfer to adopt a processual account of organizational learning as it occurs within international settings. Organizational learning in an international context is defined here as some combination of improving actions (Fiol and Lyles 1985) and acquiring new knowledge (Hedberg 1981), whether it is new products or processes, that is of strategic importance to the parent company. The study takes into account the wider institutional context in which learning occurs, for learning does not occur in a social

vacuum but is contextually embedded (see Child and Heavens 2001). It can be influenced by social pressures associated with the diversity in beliefs, practices and social expectations that can hinder the continuation of a practice (cf. Dacin *et al.* 2002). Tensions created by actors can lead to change in routines, rules and practices (Scott 2001).

Organizational learning and the impact of institutional contexts on learning are discussed in the following section. This is followed by the introduction of the method and empirical setting. The findings of the exploratory study that examines the influence of institutional factors on the level of learning at Polish, Turkish, Italian and German subsidiaries of a British and a German multinational corporation (MNC) in the chemical industry are presented in the fourth section. The final section presents the implications of introducing the behaviourist assumptions of learning for research on the multinational firm.

THEORETICAL BACKGROUND

Organizational Learning

The process of organizational learning in international contexts is conceptualized here as consisting of two aspects: i) the direction of knowledge flow, and ii) the reinforcement and change in routines. In this section, these two constructs that serve as the unit of analysis are presented.

The direction of knowledge flow

Within the international business field, there is broad consensus on Vernon's (1979) assertion that multiple flows of intra-organizational knowledge between international units are an important source of competitive advantage in global industries. It is widely acknowledged that cross-border creation, accumulation and sharing of knowledge enable MNCs to create synergies (e.g. Bartlett and Ghoshal 1989; Gupta and Govindarajan 1991). The systemic advantages of combining geographically dispersed external and internal knowledge sources call for a need to establish strong informal ties between subsidiaries (Ghoshal and Nohria 1989). The ability to capitalize on the resources and entrepreneurship of individual national subsidiaries and to leverage them to create innovations for exploitation on a worldwide basis is accepted as becoming increasingly important (e.g. Ghoshal and Bartlett 1998). This points to the importance of knowledge transfer that presents opportunities for learning at both the subsidiary and the corporate level. However, this celebrated notion of knowledge transfer has been

widely used as a proxy for organizational learning (e.g. Zahra *et al.* 2000; Macharzina *et al.* 2001). We argue here that, for learning to be claimed, knowledge upon its transfer has to be manifested in changed behaviour.

Knowledge can flow either one-way from the parent to the subsidiary or two-ways between the parent and subsidiary. An example of a one-way flow of knowledge can be an MNC that operates with a global strategy. Global companies with centralized hub structures see the diversity of international environments as an inconvenience whose effect must be minimized (Bartlett and Ghoshal, 1989). Their practices tend to be closely mirrored in subsidiaries (see Bird *et al.*'s exportive model, 1999). However, transnational companies can be expected to encourage reverse transfer of knowledge from subsidiaries owing to their sensitivity to local market needs. An MNC that encourages two-way flow of knowledge would be linking resources and capabilities at both headquarters and subsidiary level to create and implement innovations on a joint basis. The subsidiary can have the potential to enhance the local responsiveness, global integration and worldwide learning capabilities of the MNC (Birkinshaw 1997). Consequently, the direction of knowledge flow has implications for the ability of an MNC to learn.

Reinforcement of or change in routines

In line with Levitt and March (1988), we ascribe to the definition of learning as embedded in organizational routines. Learning is perceived here as taking place when acquired knowledge either reinforces or changes routines (adapted from Fiol and Lyles 1985).¹ This definition encompasses more than just a change in states of knowledge and the associated action outcomes. It incorporates the role of managerial reflexive thinking and the social context in which learning is shaped. In other words, the act of transferring or acquiring knowledge per se is not seen here as having the explanatory power to shed light on how knowledge is encoded into routines. Learning is not represented by the adoption of practices alone but is realised upon the routinization of practices or change in pre-existing routines that indicate the intensity with which an MNC learns.

The reinforcement of routine behaviour by acquired knowledge is conceptualized as *lower-level learning*. We associate lower-level learning with 'those activities which

¹ Fiol and Lyles' (1985) conceptualization of learning is based on Hedberg's (1981) arguments and reflect Argyris and Schön's (1978) ideas that there is i) deviation-reducing adaptation that occurs when there is understanding within a given framework, and ii) deviation-amplifying adaptation that involves the creation of new causal relationships built on a new base of assumptions. This distinction is adapted here to routine-based learning as reinforcement or transformation of routines.

add to the knowledge base or firm-specific competences or routines of the firm without altering the nature of their activities' (Dodgson 1993: 383). This type of learning tends to lead to the development of some rudimentary associations of behaviours and outcomes, but these usually are of short duration and impact only part of what the organization does. It is a result of repetition and routine formation (Fiol and Lyles 1985). It helps stabilize existing arrangements.

By contrast, *higher-level learning* refers to the development of new routines by acquired knowledge, which can be seen as a discontinuous process, shifting from the state of rules to state of no rules.² In considering organizational history and path-dependent behaviour in routine development (Cyert and March 1963), it can be argued that breakaway from routines constitutes higher-level learning. This type of learning is more of a cognitive process than repetitive behaviour, for it is linked to the use of heuristics, skills development and insights, requiring in-depth understanding of past actions rather than unreflective action-taking (e.g. Fiol and Lyles 1985). Lillrank (2003: 218) defines it as attaining better interpretative schemes: '[W]hereas routine is guided by procedures established in advance based on past experience, nonroutine work is adapted to information learned from the task as it unfolds'. It refers to the 'performative' aspect of routines, which is the actual performance of routines by specific actors in a specific time and place, that promotes change (Pentland and Feldman, 2005; Feldman, 2000).

The direction of knowledge flow and the reinforcement of or change in routines by acquired knowledge are likely to be interrelated. Two-way flow of knowledge is likely to be associated with higher-level learning at subsidiaries. MNCs that encourage the acquisition of new knowledge from international operations are more likely to expose their subsidiaries to diverse ideas that can destabilize pre-existing routines and yield higher-level learning. Whereas, MNCs that see a need to replicate their practices overseas, hence encourage one-way flow of knowledge, run the risk of eventually becoming simple and inert. Their limited receptivity to ideas from subsidiaries can reduce opportunities that can broaden a firm's knowledge base.

² It should be noted here that Argyris and Schön's (1978) single- and double-loop learning framework is not used here, because it refers to individual learning that is aggregated to the organizational level. Argyris and Schön define organizational learning as the actions of rule-governed collections of individuals. The focus is on individuals acting as agents for organizations (see e.g. Crossan *et al.*, 1995).

In line with the processual focus of the paper, we consider the influence of the wider institutional context and its implications for firm-level action on the intensity of organisations to learn. These are detailed below.

Institutional Context

One of the key issues in international transfer of knowledge is the impact that differences in institutions between home and host countries have on transfer. Complex differences between national business systems in labour and financial markets, and the way market actors relate to each other can hinder the transfer of knowledge within MNCs (Ferner *et al.* 2005). These basically refer to the realm of day-to-day action conceived as the means of analysing the core domains of business structures and processes as they reflect the co-ordination and control of economic exchange (Whitley 1999). Dissimilarities in institutional structures are likely to lead to levels of learning that vary from country to country, regardless of the pressure for global integration (Boyer 1996). This paper examines the differences in institutional settings between Germany and the UK to address the way subsidiaries learn from MNCs located in these settings.

The collaborative form of governance of Germany (Lane 1996; Whitley 1999) encourages and supports co-operation between collective actors. Labour systems in these economies encourage developing high levels of skills in a cumulative manner. Ownership is highly concentrated in the hands of long-term, strategic actors, and a corporatist system of employee representation ensures employee participation at both the plant and company levels (Vitols 2001). A synthesis of the main features of the German 'model' includes the following: i) a long-termist approach reflecting institutionally regulated markets, ii) the relative tardiness, in comparison to Anglo-Saxon firms in establishing large-scale production and employment outside of Germany, iii) a highly developed system of vocational education and training creating a technically competent and flexible workforce, and iv) a distinctive pattern of corporate control in which bureaucratic mechanisms are aligned with personal and informal controls (Ferner *et al.* 2001). The regulated and standardized nature of workplace relations in Germany tends to encourage firms operating in such institutional contexts to exercise high levels of control and co-ordination in foreign subsidiaries. German firms prefer to export practices from their domestic facilities and integrate operations closely, typically through people transfer (Harzing 1999). This is also reflected in the tendency

to enter into the host country through expatriate-intensive mode offered by greenfield investments to allow the imposition of central authority through direct contact (Ferner, 1997). This suggests wholesale transplant of parent company practices that can limit the autonomy of foreign operations and discourage higher-level learning at the subsidiary.

By contrast, firms in compartmentalized forms of governance, such as the UK, are more likely to delegate autonomy to subsidiaries (e.g. Otterbeck 1981), and encourage the adoption of polycentric rather than ethnocentric strategies. This suggests modes of entry such as joint ventures or acquisitions into the host country that provide relative freedom to or the exercise of subtle control over the subsidiary. As Whitley (2001) has argued, firms from 'arm's length environments' are more willing and able than firms in collaborative governance systems to shift resources to novel uses including significant investments abroad. Foreign subsidiaries of such firms can develop distinctive capabilities quickly as they are not constrained by the high levels of MNC control. As competences are not constrained by obligational ties to partners, there is a fertile ground to support the reframing of existing routines, i.e. higher-level learning, at the subsidiary.

METHOD

The research is based on systematic comparative case studies of learning in two large MNCs located in Germany and the UK with operations in Italy, Germany, Poland and Turkey. It aims to investigate the processes whereby institutional features of the German and the UK business system generate a pattern of organizational learning.

The companies were chosen in order to maximize diversity in terms of institutional contexts of countries. Both of the MNCs were located in the chemical industry with a flow production process, hence had similar industry recipes. The industry is characterized by high levels of internationalization and innovativeness (CEFIC, 2001), which deems it suitable for investigating organizational learning within the MNC context. The research examined the institutional influences on the transfer of organizational know-how such as manufacturing improvement processes and product-related knowledge, such as formulations.³

³ There was an explicit effort in the study to focus on technological rather than marketing innovations, for local adaptation in host countries was likely to be observed in technical properties of a product than in marketing efforts.

Case studies (see Table 1), employing 35 interviews, were carried out between March 2002 and May 2003 with executives overlooking international operations in marketing, manufacturing, HR and R&D at headquarters and their counterparts at subsidiaries, as well as factory tours and document analyses of annual reports. All interviews were taped and transcribed. Information was collected from respondents on: the types of practices that were transferred, resources that were made available by headquarters, the role of headquarters in subsidiary's operations, the procedures that were adopted by headquarters for participation by the subsidiary members in new product development, and the adaptation of the product to the local market. Factory tours provided evidence on the type of technology that was transferred to various subsidiaries.

Table 1 about here

As the British MNC had a marketing operation in Turkey and an insignificant manufacturing operation of small volume in Italy, it was not possible to perform a direct comparison of learning processes across developing and developed countries. Thus, the two significant manufacturing operations of the British MNC—German and Polish—were compared with the Italian, Polish and Turkish subsidiaries of the German MNC.

The direction of knowledge flow was measured as one-way where there was transfer of knowledge from the headquarters to the subsidiary alone. Two-way flow of knowledge involved the transfer of knowledge between the headquarters and subsidiary in both directions. The intensity of learning was measured as 'higher-level' where improvement in methods of operating such as an emphasis on accuracy in manufacturing was accompanied by an overall change in rules of operating by a technical change in a product such as the modification of product formulations or involvement in new product development by the subsidiary firm.⁴ Such learning necessitates acceptance by employees, upon perceived value, of the acquired knowledge with little resistance. It takes the form of proactive orientation based upon anticipation of future needs (Sadler-Smith *et al.* 2001). 'Lower-level' learning was measured by the absence of an overall change in rules of operating by a technical change, i.e. by an emphasis on improving methods of operating alone. For instance, one could observe, in

⁴ The assumption here was that technical changes have the potential to radically shift routines in innovative capability building.

instances of lower-level learning, simply an initiation of marketing modification in a product. Based on Sadler-Smith *et al.*'s conceptualization, such a level of learning indicates a passive orientation to change.

There was an attempt in the study to standardize parameters across MNCs along the lines of size, age, product portfolio in terms of its internationalization, and the type of industry. Although there is variation in the types of products manufactured, both MNCs operate a flow-production process. Thus, the industry recipes are similar. More importantly, the companies have both shifted their internationalization strategy in mid-1990s from a multidomestic to a more global approach. The methodologically-controlled study provided a firm ground on which to investigate the impact of institutional features on the process of learning within MNCs.

Initially, detailed case studies were conducted that captured contextualities in learning. This was followed by a comparison across cases conducted systematically to allow for theoretical generalization. A 'method of difference' was adopted for comparing cases with different intensities of learning (Mill 1974). In other words, an instance of a phenomenon's occurrence was compared with an instance of its non-occurrence to identify 'bundles of conditions' that explained for the variation in outcome. This is a method of elimination based on the 'successive exclusion of the various circumstance which are found to accompany a phenomenon in a given instance, in order to ascertain what are those among them which can be absent consistently with the existence of the phenomenon' (Mill 1974: 392). This method is similar to Eisenhardt's (1989) coupling of within-case data analysis with cross-case patterns for a more sophisticated understanding.

The reliability of the findings was enhanced by making explicit the procedures that were followed for data collection. These procedures included matters of interview protocol, tape recordings of interviews and feedback on transcriptions from the participants. Within case companies, interview data from a particular work group were checked against responses from another group to validate findings. Similarly, subsidiary and headquarter members' accounts were cross-checked against each other. Interview transcriptions were scanned to identify patterns of lower- and higher-level learning at subsidiary firms and one-way or two-way flows of knowledge between headquarters and subsidiaries, as well as the 'bundles of conditions' that accounted for the variation in the intensity of learning.

Research Sites

British MNC and its subsidiaries

One of the MNCs in the sample, British Chem (a pseudonym), is an internationally operating chemical company that was founded in the early 1900s in the UK. It emphasizes the research and development, and the production of decorative paint. In the late 1990s, the company, facing pressure to maximize returns on a single project, adopted a global internationalization strategy. The emphasis on global integration brought with it formalization, particularly in product development, where subsidiaries depended primarily on the UK headquarters for new product ideas.

British Chem started its operation in Germany through an acquisition in 1998 to strengthen its German market position. There was no investment in the subsidiary in the first two years of the acquisition. Upon the closure of one of the UK manufacturing facilities in 2001, part of the UK volume was transferred to the German site.

The Polish site was acquired by British Chem in 1996. This brought with it changes in management, emphasis on continuous improvement, and the introduction of safety, health and environment principles to the subsidiary.

German MNC and its subsidiaries

The second MNC, German Chem (a pseudonym), is an internationally-operating chemical company that was established in Germany in the late 1800s. The units on which this study is based produces cleansing agents for domestic use. During the last 10 years, German Chem's growth had come, to a large, extent, from a very high number of acquisitions, particularly in Europe. Given competitive pressures to improve profitability in mid-1990, the company adopted a global approach to operating overseas.

German Chem started its operation in Turkey through a licensing agreement in 1956 and, consequently, formed a joint venture in 1963. As the foreign affiliate gained manufacturing experience and established credibility as a competent and reliable adaptor, it came under the full ownership of German Chem in 1994. It was subsequently assigned more complex tasks such as developing products for local and regional markets.

German Chem's Italian subsidiary was established as a greenfield site in 1935. It serves as a home to one of the three significant R&D facilities of the parent company outside of Germany. It also represents one of the five main affiliates of German Chem, among France, Benelux, Spain and Germany, that collectively generate about 70 per cent of the MNC's net sales.

German Chem entered Poland through a joint venture in 1931, and came to fully own the operation in 1992. The Polish site is of similar size to the Turkish subsidiary but is less involved in the R&D efforts of the company as a whole. It predominantly prepares labels for German Chem products and registers them with the Polish authorities.

FINDINGS

The case studies demonstrate that there is heterogeneous learning owing to the variation in the institutional context of the home country, which is reflected on the work organization of MNCs embedded in these contexts. In spite of similar cost-cutting initiatives taken by both MNCs in their internationalization efforts, the intensity of learning differs across subsidiaries. To our surprise, a collaborative form of governance does not inhibit higher-level learning. On the contrary, the German MNC's efforts to create tight networks of relations in the host country as those at home encourages two-way flow of knowledge and changes in routines. It is also interesting to note that the direction of knowledge flow and the reinforcement of or change in routines do not necessarily cohere. It is possible for one-way flow of knowledge to change routines resulting in higher-level learning at the subsidiary. This shows that it is not the exposure to ideas through a transfer but the adjustment in routines that explains for the intensity of learning.

Intensity of Learning at British Chem's Subsidiaries

In spite of its local responsiveness to market differences in terms of packaging and colour range, British Chem mainly exports product ideas and recipes to its European subsidiaries, regardless of whether they are in developed or developing countries. The rules, procedures and policies in developing products are standardized and formalized.

I would say probably at the moment the most common trend is for most new products to end up being something that exists somewhere else and transferred into another market...I can think of formulations that have been developed in the UK that have then been sold in Germany or in France. The technology was exported from the UK, picked up by the [German] factory and the laboratory and then used to develop, produce a product for Germany or France. (R&D manager, British Chem)

British Chem supports the development of its German subsidiary's innovative capability by transferring engineering and manufacturing process improvement know-how. However, despite the shift from a multidomestic to a global internationalization strategy in 1997, there is no emphasis on expatriate management or international training to acculturate subsidiary members at British Chem. There is *one-way flow of knowledge* through improvements in manufacturing accuracy.

With the [X brand], what we did is that we exported it from the UK. So they [the German subsidiary] took the same range as the UK, and then gradually over a period of time, we formulated a match using their raw materials...They sorted their factory out in terms of their quality. So they are now making it for themselves as well as for Czech and Hungary. (general manager R&D Europe, British Chem)

However, the idea of diffusing the [X brand] to Germany initially met resistance. "Four years ago, when I discussed this with Germany and the UK, they [Germany] asked 'why do you want to launch this when other paints cover well, better than those of the competitors?'" (marketing director at the Polish subsidiary of British Chem). The German subsidiary was not too open to ideas transferred from its parent company owing to the path-dependent behaviour established prior to its acquisition. It assumed a reactive orientation to improving its processes in continuous steps to meet HQ standards.

Because people used to be independent for 40 years in their history and all of a sudden there comes a parent company, puts a foot on us and says 'we will guide you through some of our standards. We have got company standards that you have to follow', people see that sometimes as pain. (Dutch managing director at British Chem's German subsidiary)

The German subsidiary adheres to old ways of working rather than redesigning old routines in product development. Its employees perceive little value in the knowledge acquired from HQ. Its reactive orientation to *reinforcing routines* suggests *lower-level learning*.

Similar to the German subsidiary, there is *one-way flow* of recipe and manufacturing-related knowledge to Poland. "All the recipes are owned, in fact, by the UK. So if we want to make changes to the recipes, those need to be approved by the UK. There are people from the UK labs who come here and advice" (marketing director at British Chem's Polish subsidiary). This is related to time and resource constraints

such as the size of the R&D department at the Polish site (head of research lab at British Chem's Polish subsidiary). If the Polish site has an idea for a new product, its recipe can be prepared in Poland, the test results discussed with the parent company, and the product sold under the international brand name. The site assumes an active orientation to changing templates for behaviour by, for instance, "co-operating in some projects concerning the future of solvent-borne products in Poland. We are also discussing NPD [new product development] regularly" (Polish R&D manager at British Chem's Polish subsidiary). Although the subsidiary is perceived as the least technologically advanced of all players in Poland, and "have probably the smallest and not probably the best equipped R&D lab..., we could implement this [low-volume, highly profitable, value-added brands] during the preliminary phase of the launch on the market even without having all the stuff [technical capabilities] locally" owing to the know-how made available by HQ (marketing director at the Polish subsidiary of British Chem). Thus, there is room for experimentation at the Polish site.

In contrast to the German subsidiary, the Polish site displays a proactive orientation based upon an anticipation of future market needs that suggests *higher-level learning*. This is evident in its receptivity to new ideas from HQ. "They [the Polish subsidiary] are hungry for ideas. This is not to say they do not have good ideas of their own, but they are hungry" (general manager for R&D Europe, British Chem).

In terms of the sophistication in the Polish market now...there was no really major paint company there, the paint companies have gone in and started to grow the market from a value point of view, getting them into colour, bringing innovation into the marketplace...As a market, it has proved really responsive to the innovation...They are responding much more readily than say the Germans did, who have perhaps been stuck in their way. (general manager R&D Europe, British Chem)

The new practices are implemented as long as they are understood. "I do not think that there is something like a resistance. Maybe bigger issue is to understand. If they understand, they are willing to co-operate. There is not so much resistance. This factory...those people care about their work. They are very committed. One of the reasons is that this is a factory in a village and the only job they can get is in the factory" (marketing director at the Polish subsidiary of British Chem).

An interesting point to note here is that the wholesale transplant of product ideas to Poland is associated with an overall change in rules of operating at the site as well as

the market. The Polish subsidiary's proactive search for ideas in British Chem's pool of expertise opened up opportunities for discontinuous steps. It allowed the subsidiary to adapt work to information from the task as it unfolded. The company revised designs and manufacturing processes to lead changes in the industry, actively engaging individuals in performing routines.

About four years ago, we were looking at different products to launch which would be innovative, different and better than what the competition has got. There were no products...the market at that point in time seemed to be following the way of developing the tinting business...Looking at the UK market, there were suggestions that launching colours would not be a bad idea, because it works in the UK. However, we are afraid of advices of doing something because it works in the UK. So we did not really know which would be the preferred route. (marketing director at the Polish subsidiary of British Chem)

Market research results on another innovative product that pointed to important benefits to consumers encouraged the Polish site to launch colours. Subsequently, the company raised its market position from five to two in the accounts segment. In other words, the Polish subsidiary recast its strategy and values sufficiently radically to raise its rank to second position in the marketplace.

Intensity of Learning at German Chem's Subsidiaries

Prior to 1995, German Chem encouraged its subsidiaries to locally research and design products. "The local R&D and production were connected by dotted lines to HQ. This we changed in 1995. What we have today is an organization where we have local R&Ds connected by straight lines to HQ" (strategic planning director at German Chem). This marked the shift in German Chem's internationalization strategy from a multidomestic approach to one based on home country leadership or global integration. In the context of this shift, German Chem offers cultural training that focuses entirely on tearing down national borders. German Chem attaches a lot of value to a 'strong corporate culture' and tries to ensure that its subsidiaries share the main values of the firm. This is carried out through the participation of subsidiaries in international management training for company-specific knowledge and in Euro-team meetings for new product development. "Now marketing units operate in Euro teams [that consist of a strategic business unit member from HQ and marketing managers across Europe]. The

Euro team notion is quite important, because everybody is both a local manager and a member of a Strategic Business Unit (SBU) team of that function” (VP market research/business intelligence, German Chem). Euro meetings are steered by the German HQ, and are held among the long-established Western European subsidiaries of German Chem. An exception to the sample of participants is Turkey. The participation of the Turkish site in the strong, tightly-knit network of Euro-team meetings warrants *two-way flow of knowledge* between the German HQ and the subsidiary.

We [Turkish subsidiary] benefit from German Chem’s marketing strategies, guidelines and principles. These are clearly defined by the mother company...There is an emphasis on a common platform in the case of international brands. However, there is also room to modify the marketing mix in circumstances such as an economic crisis. We were allowed to adopt a volume strategy and reduce the price on a premium product during the crisis [in 2001]...We also have the flexibility to modify product formulations including those of international brands. (product manager at German Chem’s Turkish subsidiary)

Crisis management in Turkey means that routines guided by procedures established in advance based on past experience need to be redefined to cope with the constant flux of change. The Turkish site is encouraged to find new ways to succeed in a chaotic environment. “In some cases, we develop our own formulations by increasing the active ingredients in products to match the competitors in the Turkish market” (product manager at German Chem’s Turkish subsidiary). In other words, the subsidiary assumes an active orientation to generating knowledge through exploration or *changing routines* that suggests *higher-level learning*. It can modify product formulations such as that of the purple variant of German Chem’s most successful softener in Europe that has been adopted by German Chem’s other European operations. Similarly, non-European operations, such as Egypt, have benefited from the knowledge built up by the Turkish site on, for instance, products containing phosphate for cost and quality improvements in product development and production (R&D manager at German Chem’s Turkish subsidiary).

The members of the Western European (WE) network are granted more freedom than those involved in the Central Eastern European (CEE) network, led by Austria, to which countries such as Poland, the Czech Republic, Hungary, Romania, and Slovakia belong. One of the reasons for this is as follows:

The five main countries of the German Chem World generate more or less 70 per cent of net sales. This gives you the importance of weight. If I am the bigger country and I have a problem with the blue [variant of a product], even if in all other countries the blue is an interesting concept but there is a problem conceptually in Italy, then the co-ordinator, the steerer will say maybe I need to listen to you more than a country that weighs 5 per cent. (product manager at German Chem's Italian subsidiary, 5 May 2003)

German Chem's Italian operation displays similar results to those found at the Turkish subsidiary. The site is able not only to change fragrances and colourants, but also viscosity levels of products. Such active orientation to *changing routines* suggests *higher-level learning*.

We worked 10 years ago to re-launch formula with a new raw material. The reason was the bio-degradability of the old raw material. So an international team was established. We were part of this team. First studies were done in Germany. We then worked to adapt the process in Italy, France and Spain...High viscosity was very important for Italy, but not so important for other countries. So we had to find a way to increase the viscosity of the product having the same level of cost as in other countries. We followed a very precise process with specific parameters. The results were then sent to Germany" (R&D manager at German Chem's Italian subsidiary).

Strong test results convinced HQ to approve the project at the Italian operation. Experimentation and risk-taking at the subsidiary, which require changes in routines, provided the variety and diversity that German Chem could tap into for innovative capability building. An example of how German Chem benefits from its Italian subsidiary's local experiences is as follows: 'We have this kind of experience and facility here [in physical behaviour of particle sizes in dispersion and shared stress], thus had more possibility than colleagues in Germany [HQ] or in Spain and France to perform trials. We also have experience in [Y brand] softener, because Lomazzo was one of the first plants to produce softeners in the [German Chem] Group...Speaking of shared stress in such detail was not usual in our field, but that was what we made use of' (R&D manager at German Chem's Italian subsidiary). This suggests a *two-way flow of knowledge* between the Italian subsidiary and the parent company.

However, there is no evidence of German Chem's importing of ideas from its Polish subsidiary. Although German Chem has been in operation for a long time in

Poland, its historical ties are not as strong as those with, for instance, Hungary. “You have always had an economic relationship between Austria and Hungary independent of the [political] regime...History plays an important role as to why we were in Budapest first” (R&D manager at German Chem’s CEE HQ in Austria). German Chem emphasizes the exporting of marketing techniques and technical tests to Poland. Thus, there is a *one-way flow of knowledge* from the parent to subsidiary. The Polish subsidiary reinforces established ways of working and problem solving. For instance, ‘[A] lot of the marketing mix is developed in the headquarters. And the countries are responsible for excellent execution of this initiative’ (Austrian marketing manager at German Chem’s Polish subsidiary). New product development decisions are also taken at headquarters. In other words, the Polish subsidiary does not have any responsibility in new product development or technical modification of existing products that can redesign organizational routines for improvements. Rather, it prepares labels in accordance with the Polish law, registers detergents with the Polish authorities, and performs quality checks on locally-produced goods (R&D manager at German Chem’s Polish subsidiary). Such *reinforcement of routines* in bringing practices into the fold with those of the parent company that suggests *lower-level learning* at the Polish site.

The lack of involvement of the Polish subsidiary in new product development applies to all of the CEE countries in the German Chem Group. There are no direct ties among CEE subsidiaries: ‘95 per cent of the communication is always going through Austria. When Romania wants some information from Poland, they are asking us and we are asking Poland’ (brand manager at German Chem’s CEE HQ).

A country can come and say it would be interesting to develop for example soap paste, which is still in use in countries like Romania. Then we get a proposal to develop such a product. But they do not develop it in their own country...because you need the background. For example I ask my German colleague if there is such a formula in India, China, Egypt...Individual countries could not do this, because they do not know the persons. I know in headquarters many persons for 17 years and know where they have started....So we [CEE HQ] have the networking advantage owing to the long history. (R&D manager at German Chem’s CEE HQ)

Although the CEE network is strong within itself, it needs to be developed further for two-way flow of knowledge.

DISCUSSION AND CONCLUSIONS

The findings point to a variation in the intensity of learning across the subsidiaries. This, we argue here, relate to institutional effects. Although the companies have responded in a similar fashion to global pressures to integrate their worldwide operations, there is divergence in the initiatives they have taken to encourage learning at subsidiaries. Given similar internationalization strategies across MNCs, institutional influences are revealed upon considering the routine-based nature of organizational learning rather than focusing on knowledge transfer as a proxy for organizational learning.

Another aspect of the findings is that the direction of knowledge flow does not have the explanatory power to highlight the level of learning that a subsidiary experiences. One needs to observe the continuous or discontinuous change in ways of operating to suggest that a subsidiary has indeed learnt, whether at a lower or a higher level. What is contrary to our expectation is that there appears to be in congruence between knowledge flow and reinforcement or change in routines. ‘One-way knowledge flow’ from the headquarters to the subsidiary can lead to ‘higher-level learning’ if the subsidiary has an active orientation to generating new knowledge through exploration. Hence, learning is explained more clearly by the disposition of the subsidiary to seek new knowledge than knowledge transfer per se.

Table 2 provides an overview of the key institutional influences on the intensity of learning across the German, Polish, Turkish and Italian subsidiaries of the British and German MNCs.

Insert Table 2 about here

The German business system is long-termist, despite a number of recent highly publicized moves in the direction of Anglo-Saxon capitalism (Dickmann 2003). This is evident in German Chem’s heavy emphasis on developing linkages and subsidiary capabilities incrementally. Its subsidiaries were set up as a greenfield investment or a joint venture leading to full ownership over time. These had to reach a certain level of standard before they could be delegated full responsibility for marketing and technical activities. The German MNC’s characteristic long-term perspective to development (see Lane 2000b) is evident in its efforts to create tight networks of co-ordination and control. According to Garnier (1982), and Pauly and Reich (1997), German MNCs

prefer to integrate operations closely. German Chem places heavy emphasis on international transfers of managers and international training with the motive to develop the organization. “You invest in a lot of infrastructure, not only machinery and equipment, but you build up very much in people, education, training” (corporate VP manufacturing, German Chem). “So you have here more or less the best scientists in the world, you have more or less the best shop floor workers in the world, because of the old German way of learning such as the vocational training” (strategic planning director, German Chem). The German high-quality vocational training system is widely regarded as successful inside and outside the Federal Republic (Müller 1997). German Chem also emphasizes cross-fertilization of ideas through co-operative projects among its Western European operations. Euro-team meetings serve as integrating mechanisms between the various research teams (cf. Zander and Sölvell 2000). It socializes local managers into the corporate culture and creates a verbal information network that provides links between subsidiaries and headquarters (Harzing 2001). “We are sending people to Germany in the form of job rotation...It may be a short period for training purposes and visits for exchange of experience between HQ and local units’ (R&D manager at German Chem’s Italian subsidiary). As regards expatriate management, German Chem has appointed a marketing manager from the Austrian headquarters to its Polish subsidiary. There is a German Chem member working in the marketing department of the Italian subsidiary, and there are two German expatriates, one of whom is in a general manager role and the other in an engineering role at the Turkish subsidiary. In comparison, British Chem neither has headquarters personnel serving its German and Polish subsidiaries, nor provides international training for its subsidiary members. Rather, it chooses to standardize and formalize rules, procedures and policies to co-ordinate and control activities. It is striking that the strong institutional context of the German MNC creates opportunities for experimentation at foreign operations. The German MNC’s attempt “to create the model which combines a high-skill work with a matching organization of technology in other countries, by undertaking a systematic effort to transform the labour force” (Lane 2000a: 203) can encourage subsidiaries to reframe their existing routines for higher-levels of learning. In other words, the collaborative form of governance and the associated high levels of control and co-ordination in foreign subsidiaries do not necessarily lead to lower-level learning at subsidiaries. Where there is the active participation of German expatriates as boundary-spanning individuals and the revision of habitual routines to incorporate improvements

in ways of operating through international training, subsidiaries can revise product formulations and manufacturing processes, and knowledge can flow both ways between the parent company and the subsidiary.

On the other hand, the governance mechanism of the UK, particularly in the area of skill training (Lane 1996; Whitley 1999), does not serve to facilitate long-term growth at British Chem. Although the internationalization strategy of British Chem is similar to that of German MNC, it does not invest in aligning subsidiaries with its values. Thus, it is not surprising that there is resistance to ideas transferred from the parent company such as that at the German subsidiary. “The much lesser degree of institutional embeddedness of British firms and their only weak exposure to a consistent and widely obligatory system of institutionalized rule systems [in comparison to German firms], endows firms with greater autonomy but also leaves them far less supported by and implanted in various kinds of networks’ (Lane 2000a: 195). This tends to have negative implications for the intensity of learning. British Chem exports product ideas and recipes to its German subsidiary, which assumes a reactive orientation characterized by caution, inhibition and an aversion to risk-taking and experimentation. However, the intensity of learning is of higher level at the Polish subsidiary despite similar institutional influences as those faced by the German subsidiary. This is due to the active role that the Polish subsidiary assumes in searching for new product ideas to introduce to the market. The subsidiary can “recognize the value of new information, assimilate it, and apply it to commercial ends” (Cohen and Levinthal 1990:128). Counter to one’s expectation, the weak institutional context of the British MNC does not create opportunities for experimentation at subsidiaries despite the low levels of MNC control. Rather, the subsidiary’s motivational disposition to seek knowledge (e.g. Szulanski 1996; Gupta and Govindarajan 2000) and encode it into routines assumes importance in higher-level learning.

An important conclusion to our study is that it is not the exposure to diverse ideas but the establishment of long-term relations with headquarters that can lead to redefining of routines at subsidiaries. This is reflected by the following quote of the need to invest in relations at the individual level.

It is easy to talk to other people on a day-to-day basis, but actually getting a real meeting of minds, a real meeting of understanding and the ability to build a relationship with somebody who is several thousand miles away that you do not see, that often is quite tricky. And you do actually need to see them and have a

beer with them occasionally. Otherwise, the relationship does not build and you do not have that spirit of co-operation. (research and innovation director, British Chem)

Foreign investors can develop relations with subsidiaries incrementally to a level where subsidiary members can be granted the autonomy to shape the nature of demands and even to redefine the rules and logics operating within the given MNC's field. This is a counter-argument to Vermeulen and Barkema's (2001) suggestion that exposure to large variety of events and ideas causes firms to develop richer knowledge structures and decreases the rigidity in their mental maps and routines. "We are already in N. America, S. America, Asia and Europe. And in Asia, we are in everywhere from India, Pakistan to Singapore, totally unhomogeneous nature of our particular activity. So I do not think we want any more diversity of learning. We have already got as much diversity of learning, almost as much as we can cope with" (research and innovation director, British Chem). Higher-level learning is evident where an MNC chooses to enter the host country by greenfield investment or a joint venture that comes under full ownership over time, as exemplified by Italian and Turkish subsidiaries of German Chem.

This methodologically-controlled study shows that organizational learning in international settings is more than a process of transferring best practices. It is rather a routine-based activity that is contextually embedded. By adopting the behaviourist assumption of learning, we refine our understanding of organizational learning within the MNC context. In line with those who study the formative context of knowledge creation, use and institutionalization (e.g. Patriotta 2003), we reject the notion that organizational learning is simply knowledge flowing across countries in a form that is abstracted from historical underpinnings and structural embeddedness of ties. The execution of work routines is governed by pre-existing institutional arrangements that people usually take for granted and apply in situated actions. Keeping the internationalization strategy of MNCs constant, it is clear that the institutional context of the home country plays an important role in organizational learning at the subsidiary level. There is variation in the intensity of learning across subsidiaries of MNCs from different institutional systems lending support to the Varieties of Capitalism arguments. Collaborative forms of governance and the motivational disposition to learn encourage higher-level learning at subsidiaries.

There have been few context-based investigations of the social system that shape the learning process in the international arena. Processual accounts of learning that

recognize the link between knowledge and action deem more empirical research. It is not sufficient to argue that learning that is disembodied from practice is fostered by diversity in experience (e.g. Barkema and Vermeulen 1998) and the differences between acquired and acquiring firms. Although this research has not adopted a phenomenological approach to studying the highly interactive and contentious nature of learning, it has highlighted the need to consider the institutional context and the link between knowledge flow and enactment in routines for a more holistic understanding of learning as it occurs in international settings. Future research efforts should shed light on how knowledge is institutionalized and deinstitutionalized in its link to organizational learning in different forms of national governance.

References

Argote, L. (1999). **Organizational Learning: Creating, Retaining and Transferring Knowledge**. Boston: Kluwer Academic Publishers.

Argyris, C. and D. Schön (1978). **Organizational Learning: A Theory of Action Perspective**. Reading: Addison-Wesley Publishing.

Barkema, H. and F. Vermeulen (1998). "International expansion through start-up or acquisition: A learning perspective", **Academy of Management Journal**, 41(1), pp. 7-26.

Bartlett, C. and S. Ghoshal (1989). **Managing Across Borders: The Transnational Solution**. Boston, Massachusetts: Harvard Business School Press.

Bird, A., Taylor, S. and S. Beechler (1999). "Organizational learning in Japanese overseas affiliates", in **Japanese Multinationals Abroad: Individual and Organizational Learning**, S. Beechler and A. Bird (eds.), pp. 235-259. New York: Oxford University Press.

Birkinshaw, J. (1997). "Entrepreneurship in multinational corporations: The characteristics of subsidiary initiatives", **Strategic Management Journal**, 18, pp. 207-29.

Boyer, R. (1996). "The convergence hypothesis revisited: Globalization but still the century of nations? ", in **National Diversity and Global Capitalism**, S. Berger and R. Dore (eds.), pp. 29-59. Ithaca: Cornell University Press.

Brannen, M. Y. (2004). "When Mickey loses face: Recontextualization, semantic fit, and the semiotics of foreignness", **Academy of Management Review**, 29(4), pp. 593-616.

CEFIC (2001). **Facts and Figures: The European Chemical Industry in a Worldwide Perspective**. Brussels: The European Chemical Industry Council, www.cefic.org.

Child, J. and S. J. Heavens (2001). "The social constitution of organizations and its implications for organizational learning", in **Handbook of Organizational Learning and Knowledge**, M. Dierkes, A. Berthoin Antal, J. Child and I. Nonaka (eds.), pp. 308-326. Oxford: Oxford University Press.

Cohen, W. M. and Levinthal, D. A. (1990). "Absorptive capacity: A new perspective on learning and innovation", **Administrative Science Quarterly**, 35, pp. 128-52.

Crossan, M. M., Lane, H. W., Roderick, E. W. and Djurfeldt, L. (1995). "Organizational learning: Dimensions for a theory", **The International Journal of Organizational Analysis**, 3, pp. 337-60.

Cyert, R. M. and J. G. March (1963). **A Behavioural Theory of the Firm**. Englewood Cliffs, New Jersey: Prentice-Hall.

Dacin, M. T., Goodstein, J., and W. R. Scott (2002). "Institutional theory and institutional change: Introduction to the special research forum", **Academy of Management Journal**, 45(1), pp. 45-57.

Dickmann, M. (2003). "Implementing German HRM abroad: Desire, feasible, successful?", **International Journal of Human Resource Management**, 14(2), pp. 265-283.

Dodgson, M. (1993). "Organizational learning: A review of some literatures", **Organization Studies**, 14, pp. 375-94.

Eisenhardt, K. M. (1989). "Building theories from case study research", **Academy of Management Review**, 14, pp. 532-50.

Feldman, M. S. (2000). "Organizational routines as a source of continuous change", **Organization Science**, 11(6), pp. 611-629.

Ferner, A. (1997). "Country of origin effects and human resource management in multinational companies", **Human Resource Management Journal**, 7(1), pp. 19-37.

Ferner, A., Almond, P. and T. Colling (2005). "Institutional theory and the cross-national transfer of employment policy: the case of 'workforce diversity' in US multinationals", **Journal of International Business Studies**, 36(3), pp. 304-321.

Ferner, A., Quintanilla, J. and M. Z. Varul (2001). "Country-of-origin effects, host-country effects, and the management of human resources in multinationals: German companies in Britain and Spain", **Journal of World Business**, 36(2), pp. 107-127.

Fiol, C. M. and Lyles, M. A. (1985). "Organizational learning", **Academy of Management Review**, 10, pp. 803-13.

Fruin, W. M. (1997). **Knowledge works: Managing intellectual capital at Toshiba**. New York: Oxford University Press.

Garnier, G. H. (1982). "Context and decision making autonomy in the foreign affiliates of U.S. multinational corporations", **Academy of Management Journal**, 25, pp. 893-908.

Ghoshal, S. and N. Nohria (1989). "Internal differentiation within multinational corporations", **Strategic Management Journal**, 10(4), pp. 323-337.

Greve, H. R. (1998). "Performance, aspirations and risky organizational change", **Administrative Science Quarterly**, 43, pp. 58-86.

Gupta, A. K. and Govindarajan, V. (1991). "Knowledge flows and the structure of control within multinational corporations", **Academy of Management Review**, 16(4), pp. 768-792.

Gupta, A. K. and Govindarajan, V. (2000). "Knowledge flows within multinational corporations", **Strategic Management Journal**, 21, pp. 473-96.

Harzing, A.-W. K. (1999). **Managing the Multinationals: An International Study of Control Mechanisms**. Cheltenham: Edward Elgar.

Harzing, A.-W. K. (2001). "Of bears, bumble-bees, and spiders: The role of expatriates in controlling foreign subsidiaries", **Journal of World Business**, 36, pp. 366-79.

Hedberg, B. (1981). "How organizations learn and unlearn?", In P. C. Nystrom and W. H. Starbuck (Eds), **Handbook of Organizational Design**. London: Oxford University Press, pp. 8-27.

Huber, G. P. (1991). "Organizational learning: The contributing processes and the literatures", **Organization Science**, 2, pp. 88-115.

Lane, C. (1996). "The social constitution of supplier relations in Britain and Germany: An institutionalist analysis", in **The Changing European Firm: Limits to Convergence**, R. Whitley and P. H. Kristensen (eds.), pp. 271-304. London: Routledge.

Lane, C. (2000a). "Understanding the globalization strategies of German and British multinational companies: Is a 'societal effects' approach still useful?", in **Embedding Organizations**, M. Maurice and A. Sorge (eds.), pp. 189-208. Amsterdam: John Benjamins Publishing Company.

Lane, C. (2000b). "Globalization and the German model of capitalism—erosion or survival?", **British Journal of Sociology**, 51, pp. 207-234.

Levitt, B. and J. G. March (1988). "Organizational learning", **Annual Review of Sociology**, 14, pp. 319-340.

Lillrank, P. (2003). "The quality of standard, routine and nonroutine Processes", **Organization Studies**, 24(2), pp. 215-233.

Macharzina, K., Oesterle, M.-J. and D. Brodel (2001). "Learning in multinationals", in **Handbook of Organizational Learning and Knowledge**, M. Dierkes, A. Berthoin Antal, J. Child and I. Nonaka (eds.), pp. 631-656. Oxford: Oxford University Press.

March, J. G. and H. A. Simon (1958). **Organizations**. New York: John Wiley.

Mill, J. S. (1974). **A System of Logic Ratiocinative and Inductive: Being a Connected View of the Principles of Evidence and the Methods of Scientific Investigation**. Toronto: University of Toronto Press.

Müller, M. (1997). "Institutional resilience in a changing world economy? The case of German banking and chemical industries", **British Journal of Industrial Relations**, 35(4), pp. 609-626.

Nelson, R. R., and S. G. Winter (1982). **An Evolutionary Theory of Organizational Change**. Cambridge: Belknap.

Otterbeck, L. (1981). "Concluding remarks and a review of subsidiary autonomy", in **The Management of Headquarters Subsidiary Relationships in Multinational Corporations**, L. Otterbeck (ed.), pp. 337-343. Aldershot: Gower.

Patriotta, G. (2003). **Organizational Knowledge in the Making: How Firms Create, Use, and Institutionalize Knowledge**. Oxford: Oxford University Press.

Pauly, L. W. and Reich, S. (1997). "National structures and multinational corporate behaviour", **International Organization**, 51, pp. 1-30.

Pentland, B. T. and M. S. Feldman (2005). "Organizational routines as a unit of analysis", **Industrial and Corporate Change**, 14(5), pp. 793-815.

Pettigrew, A. M. (1988). **The Management of Strategic Change**. Oxford: Basil Blackwell.

Prahalad, C. K. and G. Hamel (1990). "The core competence of the corporation", **Harvard Business Review**, May-June, pp. 79-91.

Rosenberg, N. (1982). **Inside the Black Box: Technology and Economics**. Cambridge, MA: Cambridge University Press.

Sadler-Smith, E., Spicer, D. P. and Chaston, I. (2001). "Learning orientations and growth in smaller firms", **Long Range Planning**, 34, pp. 139-58.

Scott, W. R. (2001). **Institutions and Organizations**, second edition. Thousand Oaks: Sage Publications.

Szulanski, G. (1996). "Exploring internal stickiness: Impediments to the transfer of best practice within the firm", **Strategic Management Journal**, 17, pp. 27-44.

Vermeulen, F. and Barkema, H. (2001). "Learning through acquisitions", **Academy of**

Management Journal, 44, pp. 457-76.

Vernon, R. (1979). "The product cycle hypothesis in a new international environment", **Oxford Bulletin of Economics and Statistics**, 41(4), pp. 255-267.

Vitols, S. (2001). "Varieties of corporate governance: Comparing Germany and the UK", In **Varieties of Capitalism: The Institutional Foundations of Comparative Advantage**, P. A. Hall and D. Soskice (eds.), pp. 337-360. Oxford: Oxford University Press.

Whitley, R. (1999). **Divergent Capitalisms: The Social Structuring and Change of Business Systems**. Oxford: Oxford University Press.

Whitley, R. (2001). "How and why are international firms different? The consequences of cross-border managerial co-ordination for firm characteristics and behaviour", in **The Multinational Firm: Organizing Across Institutional and National Divides**, G. Morgan, P. H. Kristensen and R. Whitley (eds.), pp. 27-68. Oxford: Oxford University Press.

Zahra, S. A., Ireland, R. D. and Hitt, M. A. (2000). "International expansion by new venture firms: International diversity, mode of market entry, technological learning, and performance", **Academy of Management Journal**, 43, pp. 925-50.

Zander, I. and Sölvell, Ö. (2000). "Cross-border innovation in the multinational corporation: A research agenda", **International Studies of Management and Organization**, 30, pp. 44-67.

Table 1. Case-study Firms

Firms	Number of Respondents					Total
	HQ	German subsidiary	Polish subsidiary	Italian subsidiary	Turkish subsidiary	
British Chem	11	2	5	N/A	N/A	18
German Chem	6	N/A	5	2	4	17
Total	17	2	10	2	4	

Table 2. Intensity of Learning at Subsidiaries

MNCs	British Chem		German Chem		
Institutional context of home country	Weak		Strong		
Internationalization strategy	Shift from multi-domestic to global integration in 1997		Shift from multi-domestic to global integration in 1995		
Knowledge transfer	Exports product ideas and recipes, as well as engineering and manufacturing process improvement know-how		Exports and imports product concepts and formulations		
Subsidiaries	Germany	Poland	Poland	Turkey	Italy
Mode of entry into host country	Acquisition (1998)	Acquisition (1996)	Joint venture in 1931, full ownership in 1992	Licensing agreement in 1956, joint venture in 1963, full ownership in 1994	Greenfield (1935)
Motivational disposition to improving processes and changing product formulations	Reactive orientation; resistance to new ideas	Proactive orientation; receptivity to new ideas	Reactive orientation; not a member of a Euro team for product development	Proactive orientation; member of a Euro team for product development	Proactive orientation; member of a Euro team for product development
<i>Intensity of Learning (Direction of knowledge flow and reinforcement or change in routines)</i>	Lower-level (One-way flow of knowledge, reinforcement of routines)	Higher-level (One-way flow of knowledge, change in routines)	Lower-level (One-way flow of knowledge, reinforcement of routines)	Higher-level (Two-way flow of knowledge, change in routines)	Higher-level (Two-way flow of knowledge, change in routines)

