The Dilemma of Centres of Excellence
Contextual Creation of Knowledge Versus Global Transfer of Knowledge

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THE DILEMMA OF CENTRES OF EXCELLENCE - CONTEXTUAL CREATION OF KNOWLEDGE VERSUS GLOBAL TRANSFER OF KNOWLEDGE

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Abstract

A common understanding in recent literature on the development of multinational corporations (MNCs) and headquarters-subsidiary relations is that some subsidiaries will have, or ought to have, a strategic role in the global organization that reaches beyond their local undertakings. This notion implies that MNC competitive advantage depends on the ability of several corporate units to assimilate and make use of knowledge created in other business contexts than their own. Hence, an MNC subsidiary must adapt and commit to the local environment in order to survive in the market competition. On the other hand, corporate sister units' usage of subsidiary knowledge implies that the subsidiary also must adapt and commit within the corporate environment. The dilemma here lies in the extent to which the subsidiary's external market environment and its corporate environment are separated (or integrated) systems in terms of connections between resources and activities and knowledge development. In this paper, we will reveal empirical findings from an international project on the occurrence of strategic subsidiaries - denoted Centres of Excellence (CoE) - in MNCs. We also investigate if CoEs play an influential role over corporate decisions on investments. Our investigation reflects the extent to which the subsidiary competencies are of context-specific nature or if they affect other parts of the MNC. The paper also discusses and presents case-examples of how the subsidiary can retain its uniqueness and sustain as a CoE even if it continues to transfer knowledge to other parts of the MNC.

INTRODUCTION

A common understanding in recent literature on the development of multinational corporations (MNCs) and headquarters-subsidiary relations is that some subsidiaries will have, or ought to have, a strategic role in the global organization that reaches beyond their local undertakings (e.g. Etemad and Dulude, 1986; Bartlett and Ghoshal, 1989; Gupta and Govindarajan, 1994). This notion implies that MNC competitive advantage depends on the ability of several corporate units to assimilate and make use of knowledge created in other business contexts than their own. Thus, the essence of being a strategic subsidiary-centre goes beyond being specialized in knowledge that only can be used in a local business setting. It also goes beyond having an overall corporate responsibility for producing, selling, purchasing or conducting any other centralized activity for which the purpose is to achieve efficiency by economics of scale, that is being a centre on the basis of size or volume. Rather, it is a matter of maintaining one or several critical fields of knowledge that have long-term impact on the development of the activities conducted by other MNC units. An increasingly label used, both in academia and in practical business, to describe such subsidiaries is "*Centre of Excellence*" (CoE). However, in received theory there is only limited empirical research on CoEs (Birkinshaw and Hood, 1998; Holm and Pedersen, 2000) that systematically investigate their existence, which explains that no stable definition of the concept has been developed. One used definition, though, is that a CoE is a subsidiary that has developed a distinct specialized competence in one or several activities which is of use in the activities of other MNC units (Holm and Pedersen, 2000). An analogue expression is made by Forsgren et al. (2000) who consider CoE as a matter of combining its specialized knowledge with other MNC units' usage of that knowledge and thus becoming informally or formally recognized by other MNC units as a CoE. Defined in these terms, the CoE has a strategic role for integrating its competence with other MNC units.

Independent of labels used for subsidiary centres, within theory and practical business[1], studies mainly seem to deal with their occurrence as a result of firms' long-term internationalization process (Forsgren et al., 1992) or as a result of deliberate organizational design, that is decisions taken by MNC HQ managers to grant autonomy for those subsidiaries that have earned a formal global product mandate responsibility (Etemad and

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[1] Within practical business, the CoE label is often used to formally appoint a corporate unit a global responsibility for a certain field of operations. Related labels often used are major local company, competence centre and strategic centre, all indicating that the subsidiary is not just an ordinary subsidiary.

Dulude, 1986). In the latter context Birkinshaw has studied how multinational subsidiary mandates are gained and lost (Birkinshaw, 1996). However, with a few recent exceptions (see Frost et al., 1999, Holm and Pedersen, 2000) no systematic investigations have been made trying to identify valid predictors to the existence of CoEs, or their long-term influence on MNC development.

The present paper departures from defining a CoE as an MNC sub unit having a distinct specialized competence in one or several activities, which is of direct or indirect use in the activities of other MNC units. The reason for establishing such a definition is that mere distinct competence does not necessary mean a centre-role, since the competence of a sub unit may be unrelated to the rest of the global organization.

However, with this definition follows a crucial dilemma. On the one hand, as several studies stress, knowledge development has to do with being embedded in a dynamic local environment (e.g. Porter, 1990; Kogut, 1993) or engaging in co-operative relationships with business counterparts (e.g. Blankenburg-Holm et al., 1996; Ford, 1997). Hence, an MNC subsidiary must adapt and commit to the local environment in order to survive in the market competition. On the other hand, corporate sister units' usage of subsidiary knowledge implies that the subsidiary also must adapt and commit within the corporate environment. In other cases the subsidiary knowledge will be isolated to its local activities. The dilemma here lies in the extent to which the subsidiary's external market environment and its corporate environment are separated (or integrated) systems in terms of connections between resources and activities and knowledge development. Therefore, CoEs are embedded in two more or less different networks; the corporate network consisting of relationships within the MNC and the external network comprised of business relationships in the subsidiary market. For a CoE, the task is to combine the resources and knowledge developed in the network and simultaneously play a central role within the corporate part of that network affecting, inspiring or in some other way infusing its knowledge among other corporate units. This can be problematic since the two systems may pull the subsidiary in different directions when it concerns type and level of investments. Thus, within the MNC several more or less inconsistent knowledge bases may drive the development in different directions, affecting a focal subsidiary's possibilities to generate necessary resources or delimiting the distribution of its knowledge.

From this dilemma also follows that the sustenance of a subsidiary CoE role is continuously challenged. The reason for this is that the subsidiary's knowledge diffusion may erode its relative advantage as other sister units may learn and successively become less dependent on the subsidiary. Related to this is the extent to which the subsidiary spend its limited resources for internal knowledge transfer, which means it runs the risk of not being able to distribute the resources or time that are necessary for the continuous upgrading of its own competence (Forsgren et al., 2000). Thus, the sustainability of a CoE subsidiary can be described as a problem of continuous competence improvement and continuous competence usage among other MNC members.

The issue in this paper is not to investigate the life cycle or the possible long-term existence of CoEs, even if this is a highly relevant focus. Rather, we will reveal empirical findings from an international project on the occurrence of CoE subsidiaries in MNCs compared to subsidiaries with distinct competence but with less MNC use of that competence. The latter will be called units of excellence (UoEs). We also investigate if CoEs, compared with UoEs, play an influential role over corporate decisions on investments. Our investigation reflects the extent to which the subsidiary competencies are of context-specific nature or if they affect other parts of the MNC. The paper also presents case-examples of problems with knowledge transfer and how the subsidiary can retain its uniqueness and sustain as a CoE even if it continues to transfer knowledge to other parts of the MNC.

In the following section we will further discuss the concept of CoE. In the subsequent section we discuss the methods used when identifying and measuring CoEs in MNCs. Then data on CoE occurrence is presented, followed by case-examples of the puzzle of combining transfer of knowledge with sustainability as a CoE. Finally we make conclusions.

CENTRES OF EXCELLENCE

Having competence is sometimes described as a matter of “being able to do something well” (Oxford advanced learner’s dictionary, 1995) and being competent is a matter of “having the ability, authority, skills, knowledge, etc. to do what is needed” (ibid.). But for the ability to do what is needed, organizations (in general) must store and share specific competencies amongst organizational members (Snow and Hrebiniak, 1980). Therefore, to speak of an organization having a certain competence, knowledge must be distributed throughout the organisation and become embodied into products, services and systems (Nonaka and Takeuchi, 1996). An underlying problem with knowledge integration within organizations is that different knowledge areas are more or less difficult to articulate and transfer, that is they are more or less tacit. Such tacit knowledge is often regarded as critical for a company’s competitive advantage (Kogut and Zander, 1993) but as it cannot easily be codified and communicated (Polanyi, 1962) organizational integration requires social relations and direct involvement through personal contacts between organizational members (Grant, 1996).

It is generally accepted that an organization's competence is not separated from its business environment. On the contrary, the ability to learn and generate higher levels of knowledge depends on environmental interaction (Cyert and March, 1963; Forsgren et al., 2000; Nelson and Winter, 1982). Therefore developing a high level of competence depends upon the kind of interaction and relationships that the parties have. This means that the development of a new product, for example, is the result of an adaptation to and the successful integration of the knowledge contained within the relationships by the parties involved. Empirical studies of MNC subsidiaries confirm that the competence development relates to exchange in business relationships and that 80 percent of these relationships are to counterparts external of the MNC (Andersson, 1997; Pahlberg, 1996).

So, some MNC subsidiaries will develop distinct competencies that give them a competitive advantage in relation to competitors in the market place. Some of these subsidiary competencies will also be useful for other MNC units. Thus a CoE includes two important features - the characteristic of being 'excellent' and the characteristic of being a 'centre'. This competence can be related to its capability within production, product development, marketing and/or other functional areas. Within the integrated MNC, consisting of several sub units and activities, a focal subsidiary will be more or less of a CoE, rather than 'either-or', and the system will include several interdependent CoEs of various kinds and degrees. To identify MNC sub units that are more of CoEs than others we suggest that both the criteria of being excellent (having distinctive competence) and of being a centre (competence of use for other MNC units) must serve as necessary characteristics. In Figure 1 these two sides of the CoE-coin distinguish between subsidiaries and portray four kinds of subsidiaries.

Firstly, CoEs exist in the upper right corner as they combine these two dimensions. To remain as a CoE a subsidiary must, on the one hand, continuously update its competence and, on the other hand, perform corporate activities leading to use among other MNC units.

Secondly, a subsidiary with a distinctive competence that has been developed but is used autonomously from the rest of the MNC can be described as a *unit of excellence*. The competence of the subsidiary is directed to carrying out its own activities without connection to the rest of the MNC.

Figure 1. Different types of subsidiaries on the basis of level of competence and MNC use of competence

Subsidiary Competence		Low (MNC use of subsidiary competence)	High (MNC use of subsidiary competence)
	High	Unit of Excellence	Centre of Excellence
	Low	Unit with local threshold competence	Non-excellent Centre

Thirdly, in the lower left box we find subsidiaries with neither distinctive competencies nor extensive corporate usage of their competencies. We call these *units with local threshold competence*. They operate in their local market on the basis of a competence level that is sufficient but without any distinctive qualities. The competence is (not yet) of any wider corporate use. This may for instance be the case of recently established greenfield subsidiaries that depend on other corporate units, for expertise and resources.

Fourthly, the lower right box describes subsidiaries that have a centre position within the MNC but without a distinctive competence. This may very well be the case of subsidiaries that recently have been appointed a centre role by HQ with 'designed' corporate links for a certain field of operations, but not yet developed a distinctive competence. It can also be a situation in which a former CoE has lost its distinctive competence but still sustains the corporate relations in that area. Further, from a political perspective this can also be a centre based on control of related resources other than distinctive competencies. However, unless these related resources give a strong power position or competence is developed (becoming a CoE), there is reason to believe that a *non excellent centre* is unstable and over time will vanish and become a *unit with local threshold competence*.

Much of the earlier literature on subsidiary roles has focused on either the UoE or the local threshold competence subsidiary while little interest has been directed at how subsidiaries gain an integrated strategic role inside the MNC. The concept of autonomy has been very important in earlier research, because autonomy has been viewed more or less as a condition for subsidiary exploitation of its full potential (for example, Etemad and Dulude, 1986). The argumentation is that autonomy makes it possible for the subsidiary to exploit the potential of their own competencies in the best way while integration in the MNC and interdependence with other MNC units reduce the decision making power in the subsidiary, because all strategic decisions become head-office matters. Underlying this argument is the assumption that integrating mechanisms and interdependence relations inside the MNC are primarily controlled by the head-office.

However, one distinctive feature of the concept of CoEs is that in some cases the subsidiaries have the upper hand in the interdependence relations in the MNC, because the other MNC units are dependent on the distinctive competencies in the subsidiary. As a consequence we see many examples of subsidiaries gaining a level of influence on strategic decisions that reaches far beyond their local responsibilities. Extreme examples of this are the MNCs that have been forced to move their head-office to one of their former subsidiaries (Forsgren *et al*., 1995); for example the Danish conglomerate ØK. Back in the 60's ØK was a prosperous company with many production and trading activities, but then they ran into economic problems and were forced to sell most of the production activities. After many sell-off the dominant activities in the MNC were the trading activities in South East Asia and this forced the head-office to move from Copenhagen to Singapore, which was the new centre of the company.

OCCURRENCE OF CENTRES OF EXCELLENCE AMONG MNC SUBSIDIARIES

In order to identify CoEs an international group of researchers established and launched the so-called Centre of Excellence project in May 1996[2]. Participating were researchers in the Nordic countries, United Kingdom, Germany, Austria, Italy, Portugal and Canada. One of the first issues was to get proper data for the project and in order to collect quantitative data on subsidiary roles it was decided to construct a questionnaire that could be applied in all the countries involved. The resulting questionnaire covers four areas of questions. The first includes background questions on basic subsidiary characteristics like field of business, size, age and level of internationalization. The second deals with measuring the role of the subsidiary. This comprises questions about the level of subsidiary competence and the level of MNC use of that competence with regard to different subsidiary activities. The measured activities are research (basic and applied), development (of products and processes), production (of goods and services), marketing and sales, logistics and distribution and

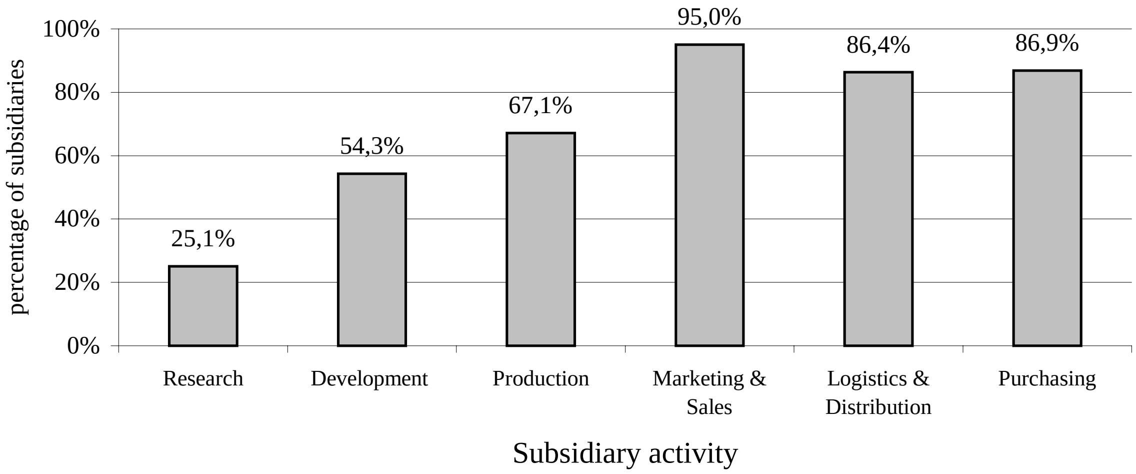
[2] For more information on the Centre of Excellence-project see Holm and Pedersen, 2000.

purchasing. A third area investigates driving forces in the emergence of CoEs, divided into (internal) MNC factors and (external) market factors. The final area covered by the questionnaire is the effect of the CoE on the (internal) MNC development. If such effects can be identified within the MNC we may claim that the emergence and management of CoEs will be a meaningful research area in international business. Thus, the questionnaire was constructed on the basis of identifying CoEs, explaining their existence and some of their effects.

For practical reasons, it was decided that each project member should be responsible for gathering data on foreign-owned subsidiaries within their own country. Thus, all subsidiaries in the database belong to MNCs. In the data gathering subsidiary managers, rather than the mother companies, have been respondents. One advantage of choosing subsidiary respondents is that they are directly engaged in the market and therefore most acquainted with its characteristics as compared to the mother-company. Although we can expect that the subsidiary has a reliable awareness of its own competencies, it would be an advantage to gather supplementary information about the effects of the CoE on the MNC from other corporate units as well. However, it would be an unmanageable task to first identify the subsidiaries in each country and then to identify the relevant management units in the foreign MNCs.

Approximately 80 percent of the questionnaires were answered by subsidiary executive officers, while financial managers, marketing managers or controllers in the subsidiary answered the remaining 20 percent. The response rate varied between 20-55 percent depending on the country of investigation and the quality of the data was quite high with a general level of missing values of not more than five percent. Figure 2 illustrates the activities undertaken by the investigated subsidiaries. In the total sample answers was received from 2,109 subsidiaries. Out of these, 25,1 percent claim that they conduct basic research. 54,3 percent are engaged in developing products or processes and 67,1 percent produce goods or services. As many as 95 percent have marketing and sales activities and somewhat less, about 86 percent, have activities in logistics/distribution and purchasing.

Figure 2. Activities undertaken by subsidiaries

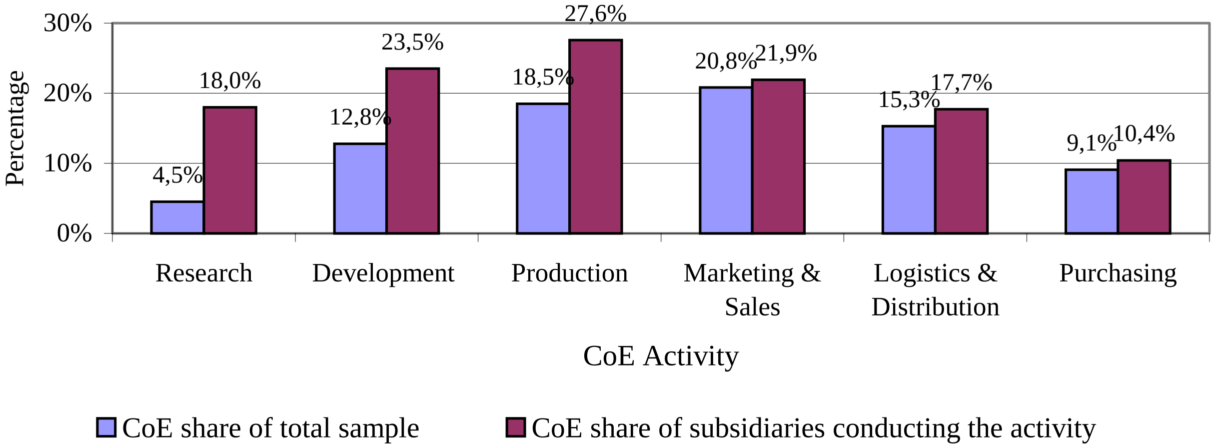


We have stated that CoE is a matter of having a distinctive competence that is of use for other corporate units. We also claimed that CoE characteristics could be related to different activities in the subsidiary. The level of subsidiary competence and the level of MNC usage of this competence have been measured for each of the six activities: Research, development, production, marketing and sales, logistics & distribution and purchasing. The level of competence was measured on a 7-point Likert scale going from 1 = weak competence to 7 = very strong competence. The level of MNC usage of this competence was also measured on a 7-point Likert scale going from 1 = no use for other MNC units at all to 7 = very useful for other units. In the following sections we will identify CoEs as those subsidiaries that have values of six or seven on both scales, that is subsidiaries with 1) distinct competencies in an activity which is 2) highly used by other MNC units.

To give a crude comprehension of the significance of CoEs, Figure 3 illustrates two relative measures of the occurrence of CoEs. The first measure is the number of identified CoEs for each activity as a share of all sampled subsidiaries (2,109). The second measure is the CoE as a share of subsidiaries that actually conduct each of the investigated activities.

The results show that 4,5 percent of all the subsidiaries are CoEs for basic and applied research. Thus, few subsidiaries engage in and have developed basic and applied research with a distinctive competence of extended use within the MNC. The value for development activities in products and processes is higher with almost 13 percent while a little more than 18 percent of the subsidiaries are CoEs in production. CoEs in marketing and sales are slightly more common with almost 21 percent while the value for logistics and distribution is 15,3 percent. Less, 9,1 percent of the subsidiaries are CoEs in purchasing.

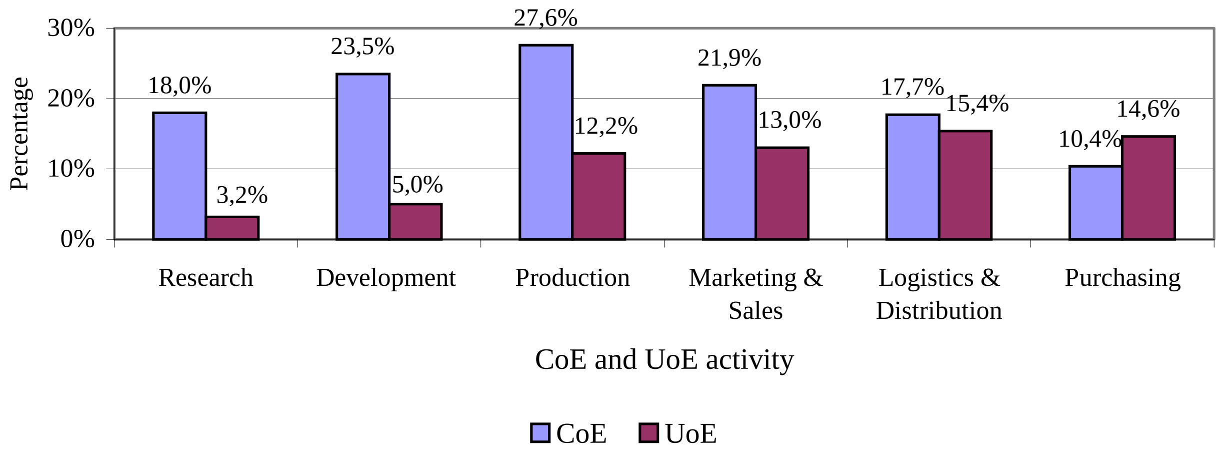
Figure 3. Relative measures of the occurrence of subsidiary CoEs



However, while CoEs in relation to the total sample tell us something about the extent of CoEs in general, it does not tell us how significant CoEs are for each of the six activities. This will vary as far fewer subsidiaries conduct, for example, basic research and development compared to other activities. Taking this into account, by using a weighted average, the share of CoEs among subsidiaries that conduct basic research increases from 4,5 to 18 percent. Development and production also result in substantially higher values whereas the change is small in other activities. A tentative conclusion is that when a subsidiary do carry out an activity, CoE characteristics are most likely to emerge in production, development and marketing & sales.

Next, Figure 4 investigates the occurrence of CoEs and UoEs. The values show that UoEs and CoEs differ with regard to their frequency in various activities. Generally, CoEs seem to be more common, but this is dependent on the activity in focus. For instance, when subsidiaries are highly competent in research, they are much more likely to become CoEs than UoEs as compared to when they are highly competent in purchasing. Thus it seems that purchasing competence remains more local than the competence in other activities. We also find that subsidiaries with high competence especially in research and development more often relate to CoEs rather than UoEs. This is also true for production and marketing & sales, although not as apparent. Logistics & distribution and purchasing competence is more evenly distributed between CoEs and UoEs. Given that a subsidiary has distinctive competence in its activities, this implies that subsidiary competencies related to technological activities will be more integrated within the MNC compared to market related activities, especially purchasing.

Figure 4. Number of CoEs and UoEs as a share of subsidiaries conducting the activity



The single feature that distinguishes CoEs from UoEs is that the competence of CoEs is of use in other MNC units indicating that CoEs are transferring knowledge to other MNC units while UoEs are not. But this single feature has significant importance for the role of the subsidiary in the MNC as it distinguishes between if the subsidiary is integrated in the knowledge processes of other MNC units or not, and thus are potentially important for the knowledge development of others. Further, if several corporate units depend on a focal subsidiary for their knowledge development this implies a power/dependence situation in which the subsidiary may influence strategic decision in line with its own interests.

THE INFLUENCE OF THE COE ON CORPORATE DEVELOPMENT

A field of increasing research interest deals with learning and transfer of knowledge within the corporation (e.g. Grant, 1996; Szulanski, 1996) and in particular the role of the subsidiaries in the competence development of other MNC units (e.g. Bartlett and Ghoshal, 1989; Birkinshaw and Hood, 1998). Knowledge flows are increasingly regarded as important for MNCs for a number of reasons (Gupta and Govindarajan 1991, 1994). Knowledge flows transmit solutions found in some locations to other locations, and thereby facilitate efficient knowledge re-use and exploitation. They allow MNCs and their subsidiaries to develop and utilize organizational knowledge. They help to design unified strategic responses to moves by multinational competitors, and they allow MNCs to recognize opportunities to exploit economies of scale and scope.

Within an MNC we can expect that some subsidiaries will have a stronger impact on corporate development than others. The effect of evolving from being a UoE into a CoE can be illustrated with the following example (se also Andersson and Holmström, 2000):

> After several years of developing this technology in cooperation with our supplier, we reached a point when we had a unique competence. This was recognized by the top manager of our business area who - after internal negotiations – appointed us a centre of excellence role. This meant that we were expected to transfer our knowledge to a sister-subsidiary in Brasil. This was problematic but accomplished through extensive personal contacts and the fact that Swedish technicians involved had personal experience and good relations from working in the Brasilian company. Because of our central role, our top manager was able to make the Brasilian company investing in production and competence development closely related to ours, facilitating the transfer of knowledge.
>
> *General product manager in a Swedish subsidiary owned by a Swiss MNC*

The case-example above illustrates that it was not sufficient to transfer information from Sweden to Brasil but rather that close interaction through personal contacts was required. The reason for this was that the Brasilian company representatives had to be fully integrated in underlying core of the knowledge and also that resistance due to "not-invented-here" attitudes from local managers had to be conquered. The example also illustrates how the Swedish CoE subsidiary had an influence over the investment decisions in Brasil.

The larger data base in Figure 5 shows the impact on the MNC competence development for CoEs and UoEs, respectively. The level of impact on the MNC competence development was measured on a 7-point Likert scale going from 1=no impact at all to 7=very substantial impact.

Figure 5. CoE and UoE average impact on MNC competence development

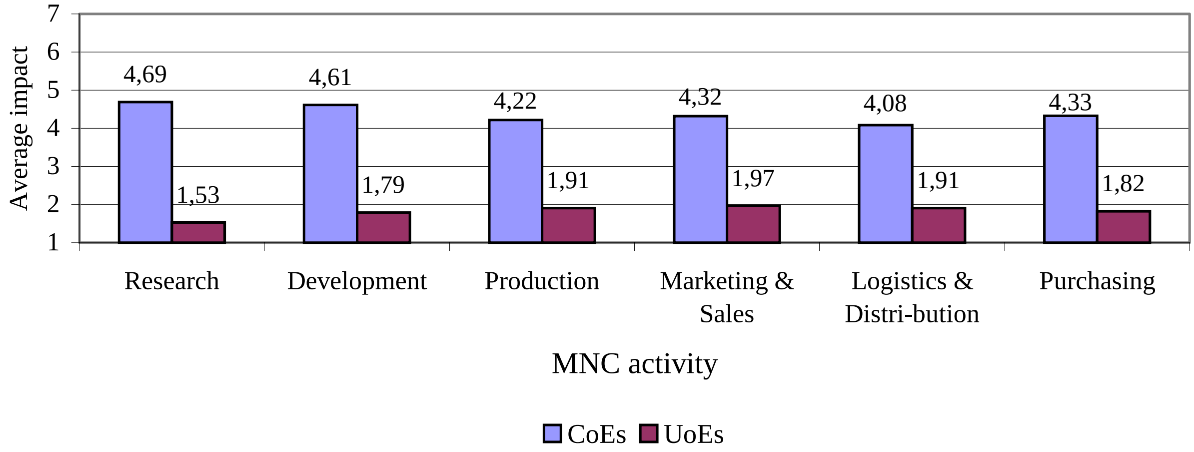


Figure 5 shows that subsidiaries identified as CoEs have a higher average impact on MNC sister units' competence development (between 4,08-4,69) than UoEs (between 1,53-1,97). The values indicate that CoEs have a substantial impact on not just their own competence development, but on the competence development of other parts of the corporation. Their role as knowledge creators goes beyond the local setting, and in contrast to the UoEs they are highly integrated in the competence development in the MNC. However, one aspect of CoEs is their integration in the MNC competence development, another aspect is their influence on strategic MNC decisions.

Figure 6 shows the influence on MNC strategic decisions for multi-functional CoEs and UoEs, i.e. units that are CoEs or UoEs simultaneously in development, production and marketing & sales. The level of influence on MNC strategic decisions like R&D investments, development of new products was measured on a 7-point Likert scale going from 1=no influence at all to 7=very substantial influence.

Figure 6. Multi functional CoE and UoE average influence on MNC strategic decisions.

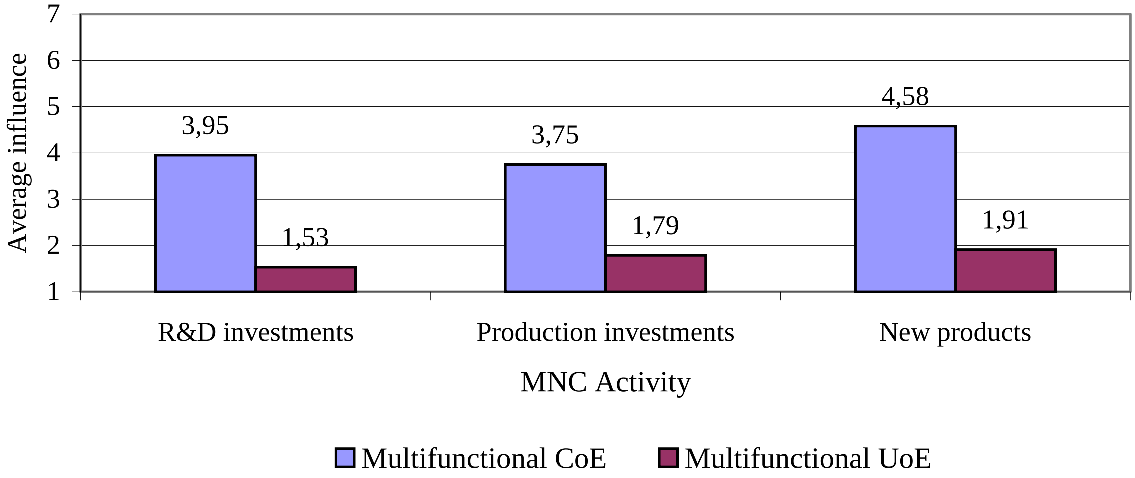


Figure 6 reveals that influence on MNC strategic decisions is much higher for CoEs that have average values ranging between 3,75-4,58 than for UoEs that have averages between 1,53 and 1,91. Therefore, we can conclude that excellence in itself, as in the case of UoEs, is not enough for a subsidiary to influence MNC investments in and production and the introduction of new products. But if the subsidiary competence is of use in other MNC units the subsidiary influence tend to increase significantly.

However, the internal transfer of knowledge in the MNC also creates some dilemmas for the CoEs. In the following we will discuss two such dilemmas. The first focuses on the context-specific nature of knowledge that creates an inherent conflict between a subsidiary's ability to create new knowledge and the possibility of that knowledge to be transferred and used within the MNC. The second dilemma is focusing on the sustainability of CoEs where the dilemma is how the subsidiary can engage in internal knowledge transfer in the MNC without giving away its uniqueness and neglecting its sources of knowledge creation.

KNOWLEDGE TRANSFER AND CONTEXT-SPECIFICITY

Prior research on knowledge flows has attempted to identify some factors that inhibit or facilitate knowledge flows between MNC units. For example, Ghoshal, Korine and Szulanski (1994) found that informal networking activities such as direct contact among managers through joint work in teams, task forces, etc., were main determinants of knowledge flows in two large MNCs. More recently, Szulanski (1996) explored "internal stickiness" of knowledge, i.e., factors that impede the intra-firm transfer of knowledge. He found that transferring knowledge within the corporation is far from easy. He identified two sets of factors that impede the internal knowledge transfer (internal stickiness): Motivational factors and knowledge-related factors. The latter stems from the tacit, context-specific and ambiguous kind of knowledge which is difficult to transfer from one location to another, while the former is more related to the motivation of the subsidiary to apply the necessary time and resources to conduct the transfer. Both these two sets of impediments of knowledge transfer have a significant impact on CoEs, because an important feature of CoEs is their active involvement in extensive knowledge transfer in the corporation. In this section we will deal the problems associated with the knowledge-related factors, while the next section will focus more on the **motivation** related factors. **Torben, it is a little unclear how motivational factos come in later on (is it in the sustainability section?)**

The knowledge-related impediments to knowledge transfer in the MNC stems from the observation that knowledge development is context-specific or even relation-specific. The knowledge is most valuable in its own context while there may be obstacles to apply the knowledge in a different context.

It was argued earlier that CoEs are highly embedded in the local business network and the main sources of knowledge development in the CoEs are the relationships with local customers and suppliers and other counterparts. But the more context-specific the solutions are, the more difficult it will be to apply the knowledge in another MNC unit. Knowledge and competence developed in interaction in a specific local business relationship may be developed specifically for that local context and the knowledge which have been developed based on a long-lasting informal relationship may also be difficult to codify (tacit and ambiguous knowledge). Therefore, the knowledge may not be useful for other MNC units operation in other local environments. So there is an inherent conflict between a subsidiary's ability to create new knowledge on one hand, and the possibility of that knowledge to be transferred and used within the MNC on the other hand (Forsgren et al., 2000).

The ways that some MNCs deal with this inherent dilemma in the development of CoEs within the MNC are twofold: 1) create incentives so the subsidiaries standardize the knowledge development as much as possible; and 2) develop the corporate network to include informal on-going exchange of knowledge. The MNC headquarters can alter the incentive structure to hinder that the CoE becomes to locked-in towards the local context in their knowledge development e.g. in the way they fund development projects. However, this requires a rather centralized control of the knowledge development in the whole corporation, which is not typical in MNCs. A more common strategy is to extend the networking activities in the MNC as suggested by Ghoshal, Korine and Szulanski (1994). By developing the corporate network to cover long-lasting relationships among the MNC units in the same way as the local business network the MNC create a channel for on-going communication and transfer of knowledge in the MNC. In this way the local business network and the corporate network will to a large extent play together and not move in very different directions. The CoE can take different roles as a link between the local business network and the corporate network either as an information bridgehead or as a competence distributor (Forsgren et al., 1999). The bridgehead role has to do with the subsidiaries' position in different business contexts, which can be more or less valuable as sources of information and inspiration for other MNC units, concerning for instance knowledge about new customers, product innovations or new technologies. The subsidiary can play an important role as a bridgehead between these contexts and the rest of the MNC. The competence distributor role has to do with the subsidiary's ability to absorb and use external knowledge for its own development activities and the extent to which this knowledge can be transferred to other MNC units.

The inherent dilemma stemming from the context-specificity of the subsidiary knowledge and the actions taken from some MNCs to circumvent this development and make use of the subsidiary knowledge is very illustrated in the following quote:

> In the company we have experienced a growing pressure towards standardization of the products, where the headquarters argues that development of specialized products for each national market is becoming too expensive. The pressure is strongest when we are discussing the budget for the next year where the headquarters ask us to indicate to what extent we expect to move towards development of more standardized products.
>
> The control of development projects in the MNC is relatively centralized mainly because most of the new development projects are funded from the headquarters in Sweden and not from the local subsidiaries. But in addition to the formal relationships to the headquarters there are a lot of informal relationships to all units in the MNC that have development over the years on the basis of project groups, job rotation, exchange of information etc.
>
> *R&D-manager in Danish Subsidiary owned by a Swedish MNC*

SUSTAINABILITY

A main observation in Figures 5 and 6 is that it is not a sufficient condition for the subsidiary that is have unique competence (unit of excellence) to gain substantial influence on MNC strategic decisions. In addition, the subsidiary competence must also be of use for the other MNC units, creating a corporate dependence on the subsidiary.

However, the fear of giving away its uniqueness is an important aspect of the knowledge transfer that determines the type of knowledge the subsidiary is willing to transfer. This problem is illustrated in the following quote:

> When we have developed a new product, a new way of solving a specific problem, in principle we should transfer all the new knowledge to the other MNC units, but it is not possible. We can demonstrate the new solution in practice, provide the other units with technical descriptions and all the knowledge we codify. We can transfer the knowledge on the final solution in a codified form, but we cannot transfer the knowledge we gained by all the unsuccessful solutions to the problem. So, in a way we are only transferring the solution to a specific problem and not the underlying competence. Therefore, as the underlying competence continues to reside in our subsidiary we are much better suited to modify and develop the product that other MNC units.
>
> *R&D-manager in Danish Subsidiary owned by a French MNC*

As indicated in the quote very often what is transferred to other MNC units is not the underlying competence, but rather applications of this competence in the form of the solution to one specific problem (maybe codified in drawings etc.). It follows that the underlying competence remain in the subsidiary, so the subsidiary will have the competence to make changes and adjustments to the suggested solution, while other MNC units mainly will gain the knowledge to apply the specific solution. The reason why applications rather than the competence itself is transferred is both because of the fear of giving away the uniqueness and the context-specific nature of the competence which makes it difficult to transfer to other environments.

Besides unwillingness to participate in knowledge transfer, both competence development in the local context and involvement in corporate learning are time and resource consuming, which creates a problem of balancing its direction of engagements. On the one hand the subsidiary may concentrate its time and resources for development towards network relationships (usually external of the MNC) for its own purposes. This “autonomous way” promotes high competence but is more related to the subsidiary’s own activities without extensive impact on other MNC units. On the other hand, the subsidiary can strive for integration in the MNC where it expands the internal relationships and involve in corporate learning and strategic decisions. This is likely to give a significant power position with possibility to influence MNC development, but the danger of this “integrative way” is that the underlying sources of knowledge development may be neglected, because scarce time and resources are spend on internal knowledge transfer rather than knowledge creation. The dilemma can be formulated as; how can the subsidiary engage in internal knowledge transfer in the MNC without giving away its uniqueness and neglecting its sources of knowledge creation? The danger is that the CoE engages in extensive knowledge transfer without continuously developing its own knowledge base. In this case the CoE will loose its uniqueness and its knowledge will become of less use in other MNC units, and it will not sustain as a CoE. Nevertheless, the very clear result from figures 5 and 6 shows that CoEs, although being engaged in the “integrated way”, have superior influence compared to the more autonomous UoEs. To the extent that CoEs can influence the type and level of MNC investments in line with their own activities, they may be able to keep on developing their competencies as resources will not be static.

Sustenance will of course not be infinite but as a CoE the subsidiary needs to develop strategies so it continuously nurtures both the local business network and the corporate network, because it is dependent on the well being of both these networks.

CONCLUSION

First we can state that it is not uncommon that MNCs contain subsidiary CoEs. This supports the notion that the management of the MNC has moved from a simple hierarchical HQ-subordinate structure into an integrated network. Within such a system subsidiaries play different roles and some become more of centres than others do. In this paper we have elaborated on the characteristics and difference between two such roles, CoEs and UoEs. CoEs represent subsidiaries with competencies that are integrated in the use of other MNC units whereas UoEs are “competence islands” that engage more in their own organization and the external market. One result of the investigation is that the occurrence of CoEs and UoEs depend on the activity in focus. It seems that production and development activities are more related to CoE characteristics than UoEs. Distinctive subsidiary competence in purchasing is more rare and somewhat more related to UoEs than CoEs.

To continuously engage in others usage of ones competence involves a risk of loosing competence advantage. The reason is that relating to others means that a certain share of subsidiary resources must be distributed to handling internal interaction and learning. This means that costs and scarce time, which could have been devoted to competence creation, rather will be directed to transfer engagements with sister companies. This may erode the need for continuous competence development, which is especially important at highly competitive markets. However, an interesting effect of being a CoE is the relatively high influence it has on investments that may support its competence development and the possibilities to make other MNC units more related to the CoE's kind of competence. The latter facilitates transfer activities and has at the same time a positive impact on the possibilities to sustain a CoE.

A future research issue is to test which factors that explain long-term sustenance of a subsidiary as a CoE. There is reason to believe that CoEs have a rather long-term existence although not infinite or static in terms of in which way it is of usage for other MNC units. The reason is that competence creation through interaction processes and relation specific investments take long time, which means that CoEs have a time advantage, and with superior influence on corporate decisions the CoE has a possibility to regularly perpetuate its level of competence and thereby sustain its advantage.

Another line of thought is whether the integration of CoEs has to do with autonomous interaction between subsidiaries compared to managerial decisions. The latter puts corporate HQ in focus and presumes that integration of subsidiary competencies is beneficial for the MNC as a whole. An important issue for research is to study the effects of integration of subsidiary competence for, on the one hand, the MNC development and on the other hand subsidiary development. Thus, what is (possibly) good for the MNC it is not necessarily good for the subsidiary. Or expressed differently, is independent blossom better than an arranged flowerbed?

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