Knowledge Flows in Local Context
Chapter 4

MNEs’ Location Behaviour and Industrial Clustering*

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1. Introduction

Economic geographers and urban and regional economists often discuss largely the same issues from somewhat different perspectives. The different analytical techniques adopted and empirical tests employed can sometimes lead to rather differing opinions and conclusions, and often these reflect largely methodological differences as to how to parsimoniously capture a particular issue. Where the topics being discussed also overlap with other fields such as international trade or international business, the variety of analytical insights arrived at, often simply reflects the variety of analytical perspectives adopted.

In this paper, we examine one important example of these differences in terms of a topic which is central to the interests of economic geographers and regional economists, namely that of industrial location behaviour. In particular, we examine the case of the location behaviour of the multiplant and multinational firm, specifically because the analysis of this issue is treated differently by economic geographers, regional economists, international trade economists and the international business and management schools. The spatial behaviour of the multinational enterprise (MNE) has significant implications for regional and local development, because of the sheer scale of the foreign direct investment (FDI)

operations undertaken by the MNEs in all industrial and commercial sectors. Yet, the differences in the treatment of this topic by these different schools leads to major problems of interpretation and comparison, particularly regarding issues of industrial ‘clustering’.

One of the most hotly debated aspects of globalization — the global disaggregation of the value chain — provides a critical template against which to view the intertwined issues of geography and the MNE. This disaggregation is the outcome of firms combining the comparative advantages of geographic locations with their own resources and competencies to maximize their competitive advantage. The interplay of comparative advantage and competitive advantage determines both the boundaries of the firm (outsourcing decisions) as well as the optimal location of value chain components (offshoring decisions). There is considerable evidence that the knowledge plays a key role in the relationship between location and value creation (Pyndt & Pedersen, 2006). The ‘smile of value creation’ emerges from concentrations of high value activities at the two ends of the value chain and illustrates the crucial role of knowledge (see Figure 4.1). R&D knowledge generates high value added at the upstream end of the value chain (development, design, research, strategic planning, etc.). Similarly, marketing knowledge generates high value added at the downstream end (advertising, after-sales support, market research, etc.). Over time, dynamic competencies are based on linking the two ends of the ‘smile’ so that marketing knowledge is used to calibrate and focus R&D-based knowledge creation (Leenders & Wierenga, 2002; Winter, 2003).

This paper argues two major points. First, both economic geography and regional economics have much to learn from these other fields concerning the

![Figure 4.1: MNEs, knowledge and location.](image-url)
strategic behaviour of the MNE. Economic geographers and regional economists
tend to focus on the explicitly spatial aspects of MNE behaviour, and the resulting
implications of the MNE location behaviour for regional development and
regional policy, but do not treat MNE organizational issues, which are entwined
with MNE locational issues, seriously (Phelps, 1997).

Second, we address the contribution that can be made by economic geography
and regional economics to both the international business literature and interna-
tional trade theory.1 An unfortunate outcome of the tentative treatment of infor-
mation and organizational issues of the MNEs in economic geography and
regional economics, is that most of the seminal work on the explicitly spatial
aspects of firms within these fields is largely unknown outside them.2 Yet the
explicitly spatial insights of economic geographers and regional economists have
much to contribute to the MNE debates in the other fields of international eco-
nomics and international business, for two reasons.

(i) Traditional international business and international trade theory approaches
include no explicit geography within the schema, and cannot deal with locational
issues at sub-national geographical scales.3 (ii) The ignorance of firm location
theory, outside the fields of economic geography and regional economics, has
allowed the growing debates within the international business literature concern-
ing the explicitly spatial behaviour of the MNE to be dominated by the banal
notions of geographical space contained within the vague (Porter, 1990) notion of
‘clusters’. Part of the reason for the popularity of the Porter clusters approach is
that it allows commentators to draw selectively on, and to use more or less inter-
changeably, the nomenclature, terminology and insights of the fields of economic
geography and regional economics, without any real consideration of the analy-
tical assumptions embedded in each of these concepts (Gordon & McCann, 2000).
Yet, such a selective approach means that many of the Porter-type contentions
become almost entirely untestable (McCann & Sheppard, 2003; Martin & Sunley,
2003) and this is unfortunate, because good analysis and policy-making demands
that our models are clear and testable. This lack of analytical rigour is particularly

1 Our review of the literatures discussed here is not meant to be exhaustive. We have included specific
references to indicate the type of analyses employed by these different fields and their underlying
assumptions, as they relate to the argument of the paper.
2 For example, Markusen’s (2002) seminal Multinationals and the Theory of International Trade,
includes multiple references to international economics, international business and management, but
no single reference to work by economic geographers or regional economists. This is also the case in
best-selling international business textbooks, such as Ball et al. (2004).
3 While new economic geographers (Fujita et al., 1999) have drawn on new international trade models
(Helpman & Krugman, 1985), most trade theory dealing with MNEs remains fundamentally aspatial
(Markusen, 2002).
problematic when analysing the regional development impacts of the MNEs. We will argue, adopting a transactions cost perspective, that the Porter notion of an industrial cluster implicitly precludes the inter-firm organizational arrangements characterizing the MNE. As such, the Porter clustering literature provides few, if any, grounds for determining whether an MNE should locate in a cluster. The time is ripe for a clear and consistent analysis of how industrial location concepts from economic geography and regional economics relate to those in the international business and international economics fields. Such an attempt requires us to adopt a transactions-costs perspective on the organization, boundaries and linkages of the firm, a familiar approach in the international business literature but much less so in the trade literature (Markusen, 2002) and not at all in economic geography. Using this approach we can then consider how the location behaviour of the MNE firm influences, and is influenced by its strategic objectives, depending on the nature of the firm’s inter-firm relations, and also depending on how the costs and opportunity costs of any inward or outward information spillovers affect the firm.

At this point we emphasize that the strategic logics underlying different ‘modes of entry’ used by the MNEs to undertake the FDI are very different. Thus, whether an MNE uses a greenfield or acquisition entry mode is likely to depend upon the entry objective. Greenfield establishments are more likely to be associated with leveraging the MNE’s knowledge and other assets (exploiting the firm’s existing competencies), while acquisitions are more likely to be associated with creating or upgrading competencies. Over time, subsidiary responsibilities may evolve, so that the MNE hierarchy is re-organized.

The paper is organized as follows. In the next section we discuss the rationale for and the nature of the MNE as perceived by the international business economics and international trade theory literatures. In Section 3, we discuss and compare the various approaches employed to describe and analyse the explicitly geographical location behaviour of the MNE from international business, international trade theory, regional economics and economic geography perspectives. We argue in Section 4 that many of the traditional analytical frameworks for discussing MNE location behaviour have recently given way to the Porter notion of a cluster. This is, however, an oversimplification of the complexities of MNE location behaviour, the analysis of which requires a careful consideration of the interrelationships between location theory and MNE information and organizational issues. In order to understand the conditions under which an MNE will find it advantageous to locate in a particular type of cluster, it is necessary to consider how MNE information and organizational issues are related to different inter-firm typologies of industrial clusters. In Section 5 we therefore present a typology of the clusters evident in regional economics and economic geography. By adopting
a transaction-costs perspective on inter-firm relations, this approach coherently links the economic geography and regional economics literatures to the international business literature. Section 6 then integrates these analytical underpinnings of clusters to the organizational and behavioural logic of the MNE. This allows us to point to various possible avenues of theoretical and empirical research.

2. The Nature of the Multinational Enterprise

The analysis of the nature and strategic competitive behaviour of the MNE has been undertaken in the two related fields of international business and international trade theory.

The mainstream of international business theory emerged from the Reading school and its early development was strongly influenced by its progenitors’ roots in neoclassical economics (Dunning, 1977; Buckley & Casson, 1976). It soon found an interested audience of management scholars who applied the theory to a wide variety of issues involving the organization, strategy and impact of the MNE. In the international business and management literature, the explanation for the existence of MNEs is based on the assumed existence of firm-specific intangible assets, which give the MNE firm major cost advantages over foreign producers (Caves, 1982). Within this broad theme, the strategic behaviour of the MNE has traditionally been analysed within the framework of Dunning’s (1977) ‘eclectic’ or ‘OLI’ paradigm which posits that multinational activities are driven by three sets of advantages, namely ownership (O), location (L) and internalization (I) advantages. According to this approach, it is the particular configuration of these sets of advantages that either encourage or discourage a firm from undertaking foreign activities and becoming an MNE.

Ownership (O) advantages are perceived to be the firm-specific advantages that emanate directly from resources or assets owned or controlled by a firm, such as economies of scale or product diversification; the management of organizational expertise; the ability to acquire and upgrade resources; marketing economies; and access to domestic markets and to capital. Location-specific (L) advantages are assumed to be based on the resources, networks and institutional structures that are specific to a country. Examples here are low wages and the availability of cheap natural resources; labour productivity; the size and character of markets; transport costs; and the psychic distance from key markets to the home country of the MNE, the tariff and tax structures, attitudes towards the FDI, and the structure of competition. All of these can underpin value chain disaggregation (Figure 4.1).

None of these potential ownership (O) features or advantages are specific to MNE or to international business research, as each of these individual elements
is already contained within the standard industrial economics literature. Nor are any of the potential location (L) features specific to MNE or to international business research, as each of these elements is already contained within the standard urban, regional geographical economics literatures. Rather, what is different in the international business literature from these other fields is the particular way in which these features are combined with a third hypothesized advantageous feature of the MNE, namely the internalization (I) advantages.

For international business analysts, the most crucial perceived advantage of the MNEs is known as internalization (I) advantages. These are the hypothesized advantages that accrue to a firm when it eliminates the transaction costs associated with market interactions, and internalizes these activities by bringing them inside the hierarchy of the firm (Buckley & Casson, 1976). As such, the firm is perceived to gain an advantage from being able to better coordinate a complex set of interrelated activities by moving from a market system, in which the firm would be forced to rely on imperfect or non-existent markets, to a planned and organized system of internal markets. In particular, in the case of the MNE, the key imperfect market which the firm seeks to replace is that of the pricing of crucial proprietary knowledge across geographical boundaries. On one hand, knowledge can be regarded an asset that is generated by a firm, but at the same time knowledge also often has many of the attributes of a public good. Therefore, in order to profit from investment in knowledge development, in some cases it will be more efficient for the firm to use an internal hierarchy to internalize knowledge production and to monitor and control its use in a way that the market is unable to do. In these situations, knowledge is being treated as an intermediate product, and the firm accrues profits from the sale of the resulting final product or service produced on the basis of this knowledge. In cases where there are imperfections across international markets, the international business school argues that a hierarchically organized MNE can often be the most efficient means of production. As such, market failure may therefore often be the primary rationale for the existence of the MNE.

The second field of analysis which discusses the nature of and rationale for the MNE is trade theory. In early neo-classical trade theory there was no MNE as such, because traditional neo-classical trade theory was based on the twin assumptions of constant returns to scale and perfect competition in production. New trade theory (Helpman & Krugman, 1985; Krugman, 1990) extended the analysis of international trade by incorporating both economies of scale and product differentiation into trade models, both of which are features of the MNEs, and new economic geography (Fujita et al., 1999) also included a role for agglomeration and transport costs in determining trade patterns. However, within both of these subsequent approaches, each individual differentiated product is
still identified with a single firm at a single location, such that there was still no multiplant or multinational production (Markusen, 2002). It is therefore only relatively recently that the MNE has begun to be incorporated into trade models. Many of the issues raised by the international business literature are now being incorporated in general equilibrium trade-IO models. These include issues such as the internalization and pricing of knowledge assets (Markusen, 1984, 2002), the advantages of horizontal (Horstmann & Markusen, 1992; Markusen & Venables, 2000) and vertical integration (Grossman & Hart, 1986; Aghion & Tirole, 1997) and the advantages of sub-contracting and licensing versus the FDI (Horstmann & Markusen, 1987; Ethier & Markusen, 1996; Helpman & Grossman, 2002; Markusen, 2002). However, even allowing for these recent developments in trade theory, and also allowing for the focus on multi-product firms in the new industrial economics literature (Tirole, 1988; Laffont & Tirole, 1993), Markusen (2002) contends that most trade-IO models are still generally of a type which assumes a single firm is associated with producing a single good at a single location, thereby excluding a role for the MNEs and multiplant firms.

3. Analysing the Geographical Location Behaviour of the MNE

The work on the MNEs in both international business analysis and trade theory has tended to focus on the relationships between the FDI, information and organization. With the exception of a few studies focused on the US (Shaver & Flyer, 2000) and Italy (Mariotti & Piscitello, 1995; Mudambi & Navarra, 2003), very little work has taken place in these fields concerning the sub-national regional location behaviour of the MNE. Geography is defined simply in terms of home country versus foreign country. Explicitly spatial work on the MNEs has been primarily in the field of economic geography. In this section we contrast these two approaches.

3.1. The International Business Approach

Within both the international business literature and the Markusen trade theory work, the location L decision of the MNE is viewed as being interrelated with both the O, and I characteristics of the firm. Each of these three aspects of Dunning’s (1977) eclectic paradigm are perceived to interact to explain the location decision of the MNE. Therefore, while location advantages are only the direct component, the ownership and internalization advantages also influence the actual decision that is taken. As such, the location decision is a complex one, since it subsumes within it decisions regarding the mode of entry and the industry of
entry (Mudambi & Mudambi, 2002) as well as the location of entry into a market. Within both the international business literature and the international trade literature, this level of complexity was handled primarily by adopting several stylized models of the geographical behaviour of the MNEs, the most important of which was the product cycle model of Vernon (1966), and its subsequent developments (Johanson & Vahlne, 1977; Hood & Young, 1979).

In terms of international geographical issues, these theories imply a clear hierarchical ordering to the MNE’s spatial allocation of activities. Modern and up-to-date activities of recent vintage would tend to take place in the home country of the MNE while more mature, standardized and relatively outmoded activities would tend to take place in overseas markets. The international geography would thus be divided into core and periphery locations, distinguished primarily in terms of the level and complexity of the information locally generated and handled. Regional or sub-regional locations within individual countries were almost entirely ignored. Yet, the revival of interest in economic geography and the development of free trade areas has forced many observers to consider these issues.

By the 1980s, however, this view of foreign subsidiary management was argued by some to be potentially misleading (Mowery & Rosenberg, 1979). The product cycle had by that time become so highly compressed that many MNEs were engaged in programs of almost contemporaneous research, development and product introduction in many major markets (see Vernon (1979), Cantwell (1995), Dunning (1992), and Howells (1990), with conflicting evidence in Patel and Pavitt (1991)).

The locational analysis of the MNE at the sub-national regional level is now coming to be regarded as ever more important by many analysts and policymakers from the international business school (Mucchieli & Mayer, 2004) as well as by regional economists and economic geographers (Hill & Munday, 1994; Hill & Morgan, 1998). Within individual countries, identifying the conditions under which MNEs will locate in large or small urban centres, in central or peripheral locations, and in specialized or diversified areas, is now regarded as essential. As such, issues such as agglomeration, clustering or dispersion become crucial in evaluating alternative location choices and possibilities within individual countries or within individual areas of integration. Given that there is currently almost no theoretical analysis of the location behaviour of the MNEs at the sub-national regional level within either the international business or the international trade theory literatures, it would appear that there is currently an ideal opportunity for the explicitly spatial insights of economic geography and regional economics concerning firm location behaviour to be better integrated within the international business and international trade literatures.
3.2. The Regional Economics and Economic Geography Approaches

Yet, in spite of the current limitations of the international business literature and the international trade theory for analysing the location behaviour of the MNE at the sub-national level, it would be wrong to assume that the traditional regional economics and regional science literature has been in any way more advanced in providing an understanding of the regional geographical behaviour of the MNE. Analytical frameworks currently available are too specific for analysing the MNE in traditional regional economics, and too general in the case of economic geography.

The existing microeconomic location theory literature within the traditional regional economics tradition can be argued almost entirely unsuited to dealing with MNE issues on the grounds that the mathematical specifications too narrowly-defined to be meaningful. There are three reasons for this.

Firstly, microeconomic location theory (Eswaran et al., 1981; d’Aspremont et al., 1979) generally analyses the individual firm as a single point in space, and is therefore automatically inappropriate for analyzing many aspects of the MNE. Moreover, where multi-facility location modelling does exist (ReVelle, 1987), it is not constructed in terms that relate to the issues either behind the OLI framework or the product-cycle and stage-theory literatures.

Secondly, applying a microeconomic location-production function methodology to even the most basic notion of the firm in the real world is actually far more complex than it appears at first (McCann, 1999) and extending this thinking to an MNE is currently not possible.

Thirdly, as we have already seen, much of the geographical relocation of activities within the MNEs consists of the reallocation of activities and resources within an existing spatial configuration of establishments, with little or no discernable external changes (Healey & Watts, 1987) of a type which can be modelled by microeconomic location theory.

On the other hand, much of the traditional economic geography literature on MNE firm location behaviour can be argued to be far too general for coherently analysing the MNE. The traditional economic geography approach often adopts stylized geographical versions of the product cycle model which adapt the insights of the orthodox product cycle model to sub-national regional space. In these economic geography versions of the product cycle model (Healey & Watts, 1987; Hayter, 1997; Dicken, 2003) the general stylized argument is that multiplant firms (MPFs) will tend to locate their information-intensive activities and facilities in knowledge centres, such as dominant dynamic cities, while locating more routine and standardized activities in more geographically peripheral regions, in order to take account of lower local factor costs. As such, the inter-regional product cycle
geography of the MPF within an individual country should exhibit a similar pattern to the international geography of the MNE. Similarly, in the case of inward investment by foreign-owned MNEs, the simple logic here also suggests that investment locations will be driven by analogous considerations.

A problem with these stylized geographical versions of the product cycle model, however, is that they are based on a range of assumptions relating to the nature of the MPF and the MNE, many of which may no longer be tenable. In particular, the modern organizational structure, logic and behaviour of the MNE appears to have changed significantly over the last three decades since the product cycle model was first developed. The MNEs are nowadays acknowledged to adopt a much more sophisticated approach to multinational organization and parent-subsidiary relationships than the simple hierarchical model implied by the product cycle theory.

There are several possible reasons for these changes. Firstly, on the demand side, increasing wealth has led to a growth in the demand for more customized products. From the perspective of the MNEs, the outcome of this has been described as a movement from mass production to ‘mass customization’ (Kotha, 1995), i.e. including a substantial pre-manufacture design function, whereby the MNE firm continues to exploit its home country expertise of exploiting economies of scale and scope, while at the same time incorporating the potential for considerable country-specific differentiation. Secondly, on the supply side, it is argued that many of the newer information and communication (ICT) technologies have greatly reduced the advantages of size, such that many of the previous cross-subsidization based advantages of MNEs are assumed to have been largely dissipated. On the other hand, however, the MNE as a network firm may also be uniquely positioned to coordinate the activities of different subsidiaries in a manner which gives it dynamic advantages.

The desire to produce a greater variety of products or services within a networked system appears to have led to major changes in the role played by subsidiaries (Pine et al., 1993) and an increased role for strategic decision making at the subsidiary level focussed on information-based activities (Cantwell, 1987). Technological advantages created in one location can be used in another, so that there may be a multi-directional flow of information and goods between relatively autonomous subsidiaries. In order to realize these advantages, the MNEs have to adopt more sophisticated means of coordination so as to continually maintain their local and global knowledge advantage. In turn, these changes have generally lead to changes in parent-subsidiary relations and the management of this process of change can lead to tensions and conflicts within the MNE (Asakawa, 2001). These tensions arise because of the conflicts associated with the fact that the parent firm and headquarters operations will often wish to retain
the scale advantages of a hierarchical organization while at the same time also wanting to benefit from the local knowledge gained via the relatively more autonomous subsidiaries. Under such conditions of conflicting goals and organizational stresses (Simon, 1952, 1959) the MNEs may adopt satisficing (Cyert & March, 1963) strategies that may be sub-optimal from the point of view of the MNE as a whole. In other words, subsidiaries embedded in leading technological centres of competence (Cantwell & Janne, 1999) may be sources of potential competitive advantage that actually remain unrealized due to the internal political structure of the MNE (Mudambi & Navarra, 2004). As such, the nature of the location and the nature of the activity located there may not always be optimal.

In addition to this sub-optimal location-matching problem, from the perspective of the economic geography of the MNE and the MPF, these various organizational changes also imply that many of the simple centre-periphery assumptions of the product-cycle model may no longer be tenable. The fact that more subsidiaries may gain a relatively higher level of autonomy does not necessarily imply that all establishments will be progressively located in so-called knowledge centres. The reason for this is that the actual economic geography of these organizations will also depend crucially on the emerging organizational structure of the firm. For example, the geographical reach and responsibility of a subsidiary may change over time (Birkinshaw, 1996). Initially a subsidiary may originally acquire a regional mandate, where it is responsible for the coordination of activities with regard to a particular class of products, overseeing other subsidiaries in the same region. Eventually, it may obtain a global product mandate where its responsibilities become worldwide. Yet, such developments do not necessarily imply observable location changes. Rather, it is often the internal logic and organization of the activities within the network of the MPF or MNE establishments which is adjusted. The locational logic of any subsequent new ‘greenfield’ investments will also depend on this emerged organizational system (e.g., Anand & Delios, 1995).

In order to counter some of these problems, within traditional economic geography there has been some case-study work describing the various organizational-geographical aspects of the MPF and the MNE (Arita & McCann, 2002; Hayter, 1997; Bloomfield, 1981; Sheard, 1983). Yet, very little has been generalized from this case-study type of work, because the examples analysed tend to be very heterogeneous both technologically and geographically. Interestingly, however, these case-studies do tend to indicate that these simple geography-product-cycle stylized models can provide very little indication of the actual sub-national regional geographical behaviour of MPFs or the MNEs, without a detailed analysis of the organizational logic of the firms concerned (Arita & McCann, 2002, 2004).
4. MNEs and Industrial Clustering

Most recent analyses of the location behaviour of the MNEs have moved from one stylized construct to another alternative stylized construct. The new stylized construct of MNE locational behaviour, regularly employed in the international business literature but also in some areas of economic geography (Tallman et al., 2004), is the Porter (1990) concept of a ‘cluster’. Not only has this Porter clusters concept been added to the existing toolkit of stylized product-cycle constructs, but also it has come to dominate much of the recent literature on this subject. We would argue that in terms of analysing the spatial behaviour of the MNEs, this Porter concept actually creates more analytical problems than it solves.

Within the management literature, a key aspect of a location’s attractiveness for a firm is its potential for enhancing competitive advantage (Porter, 1990, 1998a, 1998b). The Porter literature argues that a central feature of such competitive regions is the presence of an industrial cluster, which provides the individual firm with valuable local resources, inputs, infrastructure and opportunities for learning from other local firms and institutions through intentional and unintentional knowledge inflows. In some situations these potentially favourable aspects of a location can reinforce each other, leading to a virtuous cycle in which there appear to be continuing advantages to investing in particular areas over other alternative locations. The implication of this analysis is that clusters once formed, have a strong element of irreversibility, and firms therefore have much to gain from locating in such clusters. This Porter thinking has recently pervaded all areas of the international business literature, because it appears to provide a way in which the (L) component of the OLI paradigm can be discussed at the sub-national level.

As we have already seen, in most of the international business literature the focus is on the MNE, which is recognized as a complex network spanning national borders, whereas the industrial cluster is treated rather simplistically as a source of knowledge (Kuemmerle, 1999). On the other hand, in most of the literature in economic geography and regional science, the focus is on the location of the MNE subsidiary within the industrial cluster, while the MNE is treated as a unitary entity interacting with a local system of innovation (Pinch et al., 2003).

Thus, as we see in Figure 4.2, in the international business literature the analysis concentrates on the multinational firm (Cantwell & Mudambi, 2004). In the context of knowledge flows, the MNE sees the host location as a source of knowledge. The subsidiary is then the ‘pod’ through which this knowledge is assessed, filtered and matched to the firm’s requirements. This relates to what has been termed the firm’s absorptive capacity — the greater this capacity, the wider the range of knowledge that that subsidiary can examine.
Therefore, greater absorptive capacity is generally associated with greater knowledge flow from subsidiary to parent. Of the knowledge flows in Figure 4.2, the MNE is most interested in the inflow of knowledge. Hence, it is interested in the extent to which the location can create such inflows. The subsidiary absorbs and serves as a conduit for some knowledge inflows (so-called spillovers). However, it also recombines these inflows to create new knowledge using its specific resource base in the location. Thus, in Figure 4.2, the flow from subsidiary to parent (1) is not the same as the inflow into the subsidiary from the location (2). The MNE is interested in both the flows (1) and (2), but these have different implications for the role of subsidiary. If flows (1) and (2) are fairly equal, the subsidiary serves mainly as a conduit for the acquisition of cluster knowledge. A large flow (1) and small flow (2) implies that the subsidiary has a substantial local resource base with which it enhances knowledge inflows for use by its parent MNE. A large flow (2) coupled with a small flow (2) can imply either that the knowledge is locally ‘sticky’ (Szulanski, 1996) or that subsidiary’s knowledge strategy is misaligned with that of its MNE parent.

On the other hand, as we see in Figure 4.3, in the economic geography literature, the analysis concentrates on the location (Maskell, 2001). The institutional environment (rule of law, property rights) governs inter-personal relations and encourages the formation of firms. The National System of Innovation (NSI) that encompasses the public, private and non-profit sectors fosters an open and learning environment that encourages the formation of firm networks. Geographic factors generate a munificent location based on the NSI — hi-tech labour and an open and learning business environment. This open and learning environment is embodied in the largest firms in the local cluster. These largest firms serve as ‘flagship’ firms and

Figure 4.2: MNE competence-creating knowledge flows.
Source: From Cantwell and Mudambi (2004).
are the hubs of networks made-up of small and medium-sized enterprises (SMEs). The network linkages enhance the innovativeness of these SMEs.

Within the international business literature, the particular way in which the Porter (1990) argument has generally been interpreted is both positive and normative. The positive conclusion is that the MNEs have much to gain from locating in clusters (Cantwell & Piscitello, 2005). On the basis of this positive conclusion, the additional normative conclusion is that the MNEs should generally locate facilities where other similar establishments are also located. For example, ‘knowledge-intensive’ MNE activities should simply be located in knowledge-intensive regions populated by other similar knowledge-intensive activities and establishments. On the other hand, rather more routine activities which are not knowledge-intensive should simply locate in lower-wage areas along with other similar activities.

The vast majority of the traditional economic geography work on the MNEs has been largely excluded from these discussions. However, there is one particular school of economic geography research, which has made some limited impact on the international business and management literature, and this is the Uppsala school (Solvell & Malmberg, 2002; Malmberg & Maskell, 2003; Solvell, 2003). The Uppsala school of international business has been unique, in that it has developed by maintaining a continuous dialogue amongst regional scientists, economic geographers and management scholars, and it is in this strand of the literature that
we find a systematic treatment of the linkage between industrial clusters and the MNEs. This is one of the few literatures where both the industrial cluster and the firm are treated as complex evolving entities (Bathelt et al., 2004).

According to the Uppsala school, knowledge flows are the main connections between cluster dynamics and the organizational and strategic decisions within the MNE (Malmberg & Maskell, 2002; Dicken & Malmberg, 2001). This approach recognizes the symbiotic nature of innovation in the cluster and in the MNE. Thus, the internal innovation system of the MNE (Figure 4.2) and the cluster system of innovation (Figure 4.3) each affect the evolution of the other. Following these arguments, it becomes apparent that the MNE knowledge network can therefore be leveraged to generate two unique advantages: (1) **transfer**, i.e. the use of knowledge created anywhere in the network at all other nodes of the network and (2) **integration**, i.e. the synthesis of knowledge flows from the parent, other subsidiaries and from its host location.

There is a difference, however, between the traditional international business approach and the Uppsala school. With its focus on the MNE, the mainstream international business literature places more emphasis on transfer. On the other hand, influenced as it is by the economic geography literature, the Uppsala school places more emphasis on integration. While the Uppsala school recognizes the importance of the parent-subsidiary relationship in the MNE, it primarily analyses the cluster network (Figure 4.3) and the subsidiary’s embeddedness in it (Andersson, Forsgren, & Holm, 2002). We would suggest that a complete understanding of the interactions between the MNE and clusters requires an analysis of both knowledge transfer and knowledge integration (Figure 4.4).

![Figure 4.4: The MNE knowledge network.](image-url)
4.1. Entry Objectives and Location

It has been recognized for some time that the MNEs are differentiated networks wherein subsidiaries differ greatly in terms of their resources, competencies and mandates (Nohria & Ghoshal, 1994). The MNE’s network now contains a diversity of subsidiary units undertaking a range of roles. This has been expressed in several different ways, e.g., assembly-type versus research-related production facilities, market-seeking versus asset-seeking FDI, home-based exploiting versus home-base augmenting FDI, national mandates versus centre of excellence mandates and so on. All of these typologies have been integrated under an overarching typology distinguishing between competence creation and competence exploitation (Cantwell & Mudambi, 2005). This substantial literature points to the fact that, over the past two decades or so, subsidiaries have been evolving out of their traditional role of being the subservient executors of headquarters commands. This process has been called ‘subsidiary evolution’ (Birkinshaw & Hood, 1998).

Competence-exploiting subsidiaries are MNE focussed in terms of creating and maintaining competitive advantage. Hence, they have little to gain and much to lose from locating in clusters. The knowledge-based assets of their MNE network that are the source of their competitive advantage are very valuable and one of their main location objectives is the protection of this knowledge. Hence, such subsidiaries are driven by the private good aspect of knowledge.

Competence-creating subsidiaries, on the other hand, are cluster focussed in terms of creating new sources of competitive advantage for their parent MNEs. In this process, they can take on competence-creating roles with progressively higher levels of responsibility.

- **Receiver competence**: As pods or ‘listening posts’ they assess, filter and process cluster knowledge, enhancing the MNE’s receiver competence (Mudambi & Navarra, 2004).

- **Absorptive capacity**: In turn, receiver competence is the basis for the creation of absorptive capacity (Cohen & Levinthal, 1990), where the subsidiary adapts knowledge inflows to fit firm-specific requirements. This knowledge can then be transmitted to other parts of the MNE network in a usable form.

- **Knowledge integration**: Subsidiaries with high levels of absorptive capacity are able to integrate inflows from diverse sources in the creation of new competencies (Figures 4.1 and 4.3) and may be better able to absorb tacit knowledge (Cantwell & Santangelo, 1999). This role is often accompanied by strategic responsibility in the form of a regional or world product mandate for a particular aspect of the MNE’s operations (Birkinshaw, 1996; Mudambi, 1998).
It may be readily seen that the notion of receiver competence is primarily related
to knowledge transfer, while the notion of absorptive capacity contains elements
of both transfer and integration.

Relating this analysis to the spatial domain, it may be seen that the entry objective
and entry mode are strongly linked. One would expect that the data to be concentrated
in the diagonal boxes in Table 4.1. Ceteris paribus, competence-exploiting subsi-
diaries are likely to be set up in a greenfield mode, since the MNE possesses the key
competencies in-house and can obtain most complementary competencies through
market transactions. Similarly, competence-creating subsidiaries are likely to be
acquired, since it is precisely the key competencies that are objective of the entry.
Over time, however, subsidiary evolution is likely to occur, so that a cross-sectional
view of an MNE will see subsidiaries in all four boxes (Cantwell & Mudambi, 2005).

These cluster-type discussions have led to an additional implicit assumption aris-
ing within the international business literature. This implicit assumption is that
where we observe several MNE firms of apparently similar characteristics located
relatively close to one another, then cluster features must be present and information
spillover mechanisms must be operating locally (DTI, 2002). In the fusion between
the international business literature and the economic geography literature (Dunning,
2002), these approaches and conclusions are highly pervasive. Yet, from an analyt-
ical perspective this line of thinking is extremely problematic, for three reasons.

Firstly, even if the distribution of activities across space is random (Ellison &
Glaeser, 1997), some activities will appear clustered even though there are no
differences in the interactions between firms. Observations of spatial industrial
concentration are thus not necessarily an evidence of Porter-type clusters.

<table>
<thead>
<tr>
<th>Entry objective</th>
<th>Greenfield</th>
<th>Acquisition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competence-exploiting</td>
<td>Forward linkage creation</td>
<td>Forward linkages leveraged and enhanced</td>
</tr>
<tr>
<td></td>
<td>Investment in marketing, logistics, distribution</td>
<td>R&amp;D intensity decreases</td>
</tr>
<tr>
<td>Competence-creating</td>
<td>Backward linkage creation</td>
<td>Backward linkages leveraged and enhanced</td>
</tr>
<tr>
<td></td>
<td>Investment in in-house R&amp;D, alliances, university partnerships</td>
<td>R&amp;D intensity increases</td>
</tr>
</tbody>
</table>

Table 4.1: Entry objectives and entry modes.
Secondly, in the Porter model, the critical geographical dimension over which any such (information) competitive advantage is assumed to operate is never specified. This is problematic, because there is much empirical evidence to suggest that information spillovers in the dynamic MNE sectors extend well beyond the dimensions of the individual metropolitan areas (Audretsch & Feldman, 1996; Suarez-Villa & Walrod, 1997) and may well extend beyond a state, regional (Arita & McCann, 2000) or even national scale (Cantwell & Iammarino, 2000, 2002).

Thirdly, while certain combinations of resources and features may tend to perpetuate locational advantage, it is not clear which firms this might be relevant for. In particular, it is not clear from the Porter logic, from an MNE viewpoint, what the balance is between the costs of locating in a cluster and the opportunity costs of not doing so.

In order to consider these issues, we must first consider the assumptions implicit in the various notions of industrial clusters that are evident in the regional economics and economic geography literatures. Whereas the central rationale for the MNE is to internalize information transactions costs within the individual firm, a key rationale for industrial clustering is to internalize information transactions costs within the group of clustered firms, rather than within an individual firm. By adopting a transactions-costs approach to understanding the types of inter-firm relations, which exist within a cluster, it becomes clear that there are many conditions under which it is not advantageous for an MNE or an MPF firm to locate facilities within a cluster.

5. Analytical Typologies of Clusters

If we adopt a transactions-costs perspective, we can define three distinct types of industrial clusters, according to the nature of firms in the clusters, and the nature of their relations and transactions within the cluster (McCann & Gordon, 2000; McCann et al., 2002; McCann & Sheppard, 2003; Simmie & Sennet, 1999). These three distinct types of industrial clusters are the pure agglomeration, the industrial complex and the social network. The key feature which distinguishes each of these different ideal types of spatial industrial cluster, is the nature of the relations between the firms within the cluster. The characteristics of each of the cluster types are listed in Table 4.2, and as we see, the three ideal types of clusters are all quite different.

In the model of pure agglomeration, inter-firm relations are inherently transient. Firms are essentially monopolistically atomistic, in the sense of having almost no market power, and they will continuously change their relations with other firms and customers in response to market arbitrage opportunities, thereby leading to intense local competition. As such, there is no loyalty between firms, nor are any
particular relations long-term. The external benefits of clustering accrue to all local firms simply by reason of their local presence. The cost of membership of this cluster is simply the local real estate market rent. There are no free riders, access to the cluster is open and consequently, it is the growth in the local real estate rents which is the indicator of the cluster’s performance. This idealized type is best represented by the notion of clustering underlying models of new economic geography (Krugman 1991; Fujita et al., 1999). The notion of space in these models is essentially urban space, in that this type of clustering only exists within individual cities.

### Table 4.2. Industrial clusters: A transactions cost perspective.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Pure agglomeration</th>
<th>Industrial complex</th>
<th>Social network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm size</td>
<td>Atomistic</td>
<td>Some firms are large</td>
<td>Variable</td>
</tr>
<tr>
<td>Characteristics of relations</td>
<td>Non-identifiable, fragmented, unstable</td>
<td>Identifiable, stable trading</td>
<td>Trust, loyalty, joint lobbying, joint ventures, non-opportunistic</td>
</tr>
<tr>
<td>Membership</td>
<td>Open</td>
<td>Closed</td>
<td>Partially open</td>
</tr>
<tr>
<td>Access to cluster</td>
<td>Rental payments location necessary</td>
<td>Internal investment location necessary</td>
<td>History experience location necessary, but not sufficient</td>
</tr>
<tr>
<td>Space outcomes</td>
<td>Rent appreciation</td>
<td>No effect on rents</td>
<td>Partial rental capitalization</td>
</tr>
<tr>
<td>Notion of space</td>
<td>Urban</td>
<td>Local, but not urban</td>
<td>Local, but not urban</td>
</tr>
<tr>
<td>Example of cluster</td>
<td>Competitive urban economy</td>
<td>Steel or chemicals production complex</td>
<td>New industrial areas</td>
</tr>
<tr>
<td>Analytical approaches</td>
<td>Models of pure agglomeration</td>
<td>Location-production theory, input-output analysis</td>
<td>Social network theory (Granovetter, 1973)</td>
</tr>
<tr>
<td>Dynamics</td>
<td>Stochastic</td>
<td>Strategic</td>
<td>Mixed</td>
</tr>
</tbody>
</table>
The industrial complex is characterized primarily by long-term stable and predictable relations between the firms in the cluster. This type of cluster is most commonly observed in industries such as steel and chemicals, and is the type of spatial cluster typically discussed by classical (Weber, 1909) and neo-classical (Moses, 1958) location-production models, representing a fusion of locational analysis with input–output analysis (Isard & Kuenne, 1953). Component firms within the spatial grouping, each undertake significant long-term investments, particularly in terms of physical capital and local real estate, in order to become part of the grouping. Access to the group is therefore severely restricted both by high entry and exit costs, and the rationale for spatial clustering in these types of industries is that proximity is required primarily in order to minimize inter-firm transport transactions costs. Rental appreciation is not a feature of the cluster, because the land which has already been purchased by the firms is not for sale. The notion of space in the industrial complex is local, but not necessarily urban, in that these types of complexes can exist either within or outside of an individual city. This complex model is actually the single explicitly spatial element in the transactions costs approach of Williamson (1979), where the focus is on the types of flow-process scale economies which firms can realize by being part of vertically-integrated production complexes.

The third type of spatial industrial cluster is the social network model. This is associated primarily with the work of Granovetter (1973), and is a response to the hierarchies’ model of Williamson (1975). The social network model argues that mutual trust relations between key decision-making agents in different organizations may be at least as important as decision-making hierarchies within individual organizations. These trust relations will be manifested by a variety of features, such as joint lobbying, joint ventures, informal alliances and reciprocal arrangements regarding trading relationships. However, the key feature of such trust relations is an absence of opportunism, in that individual firms will not fear reprisals after any reorganization of inter-firm relations. Inter-firm cooperative relations may therefore differ significantly from the organizational boundaries associated with individual firms, and these relations may be continually reconstituted. All of these behavioural features rely on a common culture of mutual trust, the development of which depends largely on a shared history and experience of the decision-making agents and is likely to extend beyond business firms to include employee unions and other stakeholders. Firms emerging from such clusters are likely to attempt to re-create this environment when they set up operations in foreign locations (Tüselmann et al., 2003).

This social network model is essentially aspatial, but from the point of view of geography, it can be argued that spatial proximity will tend to foster such trust relations, thereby leading to a local business environment of confidence, risk-taking
and cooperation. Spatial proximity is necessary but not sufficient to acquire access to the network. As such, membership of the network is only partially open, in that local rental payments will not guarantee access, although they will improve the chances of access. The geographical manifestation of the social network is the so-called ‘new industrial areas’ model (Scott, 1988), which has been used to describe the characteristics and performance of areas such as Silicon Valley and the Emilia-Romagna region of Italy (Piore & Sabel, 1984; Scott, 1988; Storper, 1997; Castells & Hall, 1995). In this model space is once again local, but not necessarily urban.

In reality, all spatial clusters will contain characteristics of one or more of these ideal types, although one type will tend to be dominant in each cluster. Yet, as we see there are some elements of each of these particular cluster frameworks which are mutually exclusive of the other cluster typologies. Therefore, in order to understand the advantages to the firm of being located in any particular cluster, it is first necessary to determine which of the ideal types of industrial cluster, described in Table 4.2, most accurately reflects the overall characteristics and behaviour of the firms in the cluster. Clearly, the major problem with the simple Porter clusters model is that in addition to the Porter emphasis on the role played by local information in acting as a spur to competitiveness, the various elements of all three of the above cluster typologies are all repeated in the Porter framework without any particular ordering, ranking or discrimination. Unfortunately, this lack of discrimination fundamentally weakens the whole basis of the Porter cluster argument.

A key distinguishing feature of our typology of clusters relates to the underly-
ing inter-temporal dynamics. In pure agglomeration clusters, the dynamics are purely stochastic, driven by the open membership and consequent low entry barriers. Entry is based on the munificence of factor availability (supply side factors) and perceived industry profitability (demand side factors). Intra-cluster competition ensures that this dynamic process aids cluster survival. Failure and exit weed out weaker ideas and firms. This is the Porter argument in favour of encouraging competitive forces to promote competitiveness.

In industrial complex clusters, on the other hand, membership is virtually closed. Entry and exit is closely regulated by the major cluster participants. In many cases (e.g., Toyota City — Aichi Prefecture, BASF-city — Ludwigshafen) the cluster is controlled by a ‘flagship firm’. The dynamic evolution of the cluster

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4The work of Scott (1988) also draws on the transactions cost institutional economics framework of Williamson. Our inclusion of Scott’s work in this third category reflects the fact that the new industrial spaces model generates a semi-fragmented grouping of firms with semi-flexible inter-firm transactions, rather than a system of tightly integrated, hierarchically organized, stable, predictable and identifiable inter-firm transactions, of the sort which exists in the industrial complex model.
is therefore controlled by the strategic goals and objectives of the dominant firm or firms. Cluster survival is closely connected to the survival of the major cluster participants. Thus, intra-cluster competition is virtually absent, while inter-cluster competition provides the dynamic of survival.

Social network clusters contain elements of both stochastic and strategic dynamics. Given the dependence on trust and shared history, entry processes are slower than that in pure agglomeration clusters. However, intra-cluster variation can be quite significant, so that over time such a cluster is likely to evolve more flexibly than an industry complex cluster that must always serve the interests of at the most a few major players.

For our purposes, it is important to understand how transactions cost descriptions of clusters inform our discussion of the attractiveness of clusters for MNEs. As we have already seen, the central rationale for the MNE is as a means of internalizing information transactions costs within the individual firm, whereas the rationale for industrial clustering is to internalize information transactions costs within the group of clustered firms. It is thus necessary to consider how the organizational characteristics and objectives of the MNE and the MPF relate to the costs and benefits of the information spillover characteristics and inter-firm behaviour of the other clustered firms.

6. Information Spillovers and MNE Location Behaviour

There is some evidence to suggest that beneficial information spillovers may operate in certain locations. For example, it is well known that R&D-intensive industries tend to be highly spatially concentrated (Almeida & Kogut, 1997; Castells & Hall, 1994; Saxenian, 1994), and this spatial concentration has tended to persist even in the face of rising local labour, land and other local input costs. However, the involvement of the MNEs in clusters is not ubiquitous. There is evidence that this involvement is very sensitive to the nature of the industry structure in which the firm operates (Cantwell & Kosmopoulou, 2002). This finding can be shown to be consistent with the arguments outlined in the previous section, but in order to see this we must reconsider the firm’s perceptions of the benefits of information spillovers. In particular, we must distinguish between information spillovers which result in knowledge inflows from those which result in knowledge outflows, and also we must distinguish between unintentional and intentional knowledge flows.

While we may safely assume that all firms regard knowledge inflows positively, irrespective of whether they are intentional or unintentional, a firm’s perceptions of the benefits of knowledge outflows will depend on the structure of the
industry in which the firm competes. This is because unintentional knowledge out-
flows have both a positive and a negative effect on the individual firm. The private
effect of an unintentional knowledge outflow on the owner-originator firm is a
leakage of its valuable intellectual capital, which would be viewed negatively
by the firm (Grindley & Teece, 1997). The potential positive effect of an uninten-
tional knowledge outflow, however, is the public good aspect of knowledge
d’Aspremont et al., 1998), contributing to a virtuous cycle by strengthening the
knowledge base of the region and making it a more attractive location for other
knowledge-bearing firms. This, in turn, should generate larger future knowledge
inflows to all the firms in the group.

In a competitive market structure characterized by a large number of firms,
each with a relatively small market share and profits, such firms probably have
little to lose from unintentional knowledge outflows and more to gain from
inflows stemming from a strong clustered location. The public good aspect of
knowledge would appear to dominate here, with the local knowledge outflows
being viewed as generally positive both for the firms themselves and for the local
region (Jaffe et al., 1993; Saxenian, 1994).

In an oligopolistic industrial structure, firms realize that unintentional knowl-
edge outflows to industry rivals can be extremely costly in terms of lost compet-
itive advantage, because the private good aspect of knowledge is their dominant
consideration. Any unintentional information outflows from a firm are more
valuable to its competitors than any potential information outflows from these
competitors to the firm, so the overall effect of the knowledge outflows is per-
ceived to be negative.

If the clustering of oligopolistic firms appears to jeopardize their proprietary
knowledge assets by exposing themselves to the possibility of unintentional out-
ward knowledge spillovers, such firms will decide not to locate in clusters, unless
they can find a way of avoiding unintentional knowledge outflows. These prob-
lems of information revelation and opportunism, and the impacts on location
behaviour, are similar in nature to the moral hazard issues in the contracting-
versus-FDI dilemmas faced by the MNEs (Markusen, 2002). We can therefore
use this argument concerning the avoidance of unintentional knowledge out-
flows, to reconsider the attractiveness of a cluster for an MNE firm, most of
which are oligopolistic.

In terms of our cluster typologies in the previous section, the possibility of
unintentional knowledge outflows is associated most obviously with the model
of pure agglomeration. Tacit knowledge can be shared between two parties, but
if there is little or no inter-firm loyalty within the system, this knowledge can also
be passed on to third parties who are beyond the control of the originator of the
information. As such, pure agglomerations will create information problems for
an oligopolistic MNE establishment. Similarly, in the case of a social network, where non-opportunistic relations between the firms are built upon longstanding mutual trust and shared experience, an immigrant oligopoly MNE firm will benefit little, as these trust systems are based primarily on networks of small firms aiming to help one another. It is very difficult to conceive of such two-way relations developing between a major MNE source of the FDI and local small firms, because the dominance in any such relationships will be skewed according to the size of the firms. Although our knowledge of the relationship between business networks and the FDI is currently very limited (Rauch, 2001), it is very difficult to conceive of a large MNE investor benefiting in any way from locating within a region characterized by such social network features, wherever they may exist.

Applying Akerlof’s (1970) market-for-lemons model, many industrial clusters which include large oligopolistic competitors will generally be plagued by adverse selection and should either fail to form, or become concentrations of mediocrity. This will be particularly so in the case of clusters characterized by pure agglomeration or social network relations. The information internalization logic favouring the MNE is largely inconsistent with either the externality argument, favouring the pure agglomeration, or the inter-personal relations of the social network. Similarly, the clear organizational boundaries of large firms of an oligopoly are inconsistent with the organizational forms assumed by either pure agglomeration or social networks.

This provides a powerful counter-argument to the simple Porter or Saxenian (1994) logic of industrial clustering, and appears to explain the empirical observation that many of the largest firms do not co-locate their knowledge creation activities with those of their competitive rivals (Cantwell & Santangelo, 2002; Simmie, 1998). Moreover, in situations where they do so, the organizational aspects of the firms are designed specifically to avoid the sharing of knowledge (Arita & McCann, 2002; McCann et al., 1993). As yet, the Porter school has failed to address or even acknowledge these counter-arguments (Martin & Sunley, 2003).

On the other hand, the industrial clusters form of industrial organization is consistent with oligopolistic MNEs. In some situations, inward investing MNE firms will find it optimal to locate facilities close to similar firms, in order to effect particular types of long-term inter-firm transactions. In these cases, the intentional sharing of information between the firms is a mutually planned process with knowledge inflows and outflows being carefully managed within a system of bilateral monopoly frameworks. This type of clustering is commonly observed in industries such as chemicals and automobile manufacturing, as well as in high technology manufacturing sectors, such as the Scottish Electronics industry (McCann, 1997). Yet, the inter-firm relations embedded within thus type
of system are entirely different from the types of relations assumed to operate in
the clusters models based on information spillovers.

A further analytical problem raised by this issue is that these industrial com-
plex-types of organizational arrangements can exist across much wider geographical
scales than individual metropolitan areas. Given the lack of geographical
specificity and definition in the simple Porter clusters literature, observations
of MNE clustering of a type consistent with an industrial complex model may
often be misinterpreted as a cluster, based on an agglomeration-information
spillovers model. Recent apparently more sophisticated work (Devereux &
Griffiths, 1998; Barrell & Pain, 1999) has fallen into this trap, by simply assum-
ing that groupings of FDI investments by the MNEs within an individual country
must be clear evidence of agglomeration economies, irrespective of the geo-
graphical location and spatial scale of either the country or its internal urban
system. It appears we are repeating many of the mistakes of the original interna-
tional business literature.

7. Conclusions

The reasons why MNE firms locate particular facilities in other countries can be
analysed initially by employing orthodox international business methodologies
and international trade theories. However, at the more disaggregated spatial scale
of the sub-national regional level, the location of the individual plant must be
analysed by discussing more explicitly spatial and organizational issues, while
taking account of the characteristics of the region itself (Hood & Young, 1979;
Phelps, 1997). Our analysis here has not been on issues of location and labour
supply, but rather on the question of the importance of inter-firm knowledge
spillovers. In terms of our clustering typologies described in Table 4.2, the spatial
organization of many MNEs is primarily characterized by the ‘industrial com-
plex’ model. In other words, although social networks exist within the firm
(Rauch, 2001), primarily stable and predictable relations exist between both the
various parent and subsidiary plants of the MNE group, and also between the sub-
sidiary and local suppliers and customers. Informal and external information
spillovers between local firms are not the primary rationale for such clustering
behaviour. Although it may be argued that trust relations of the ‘social network’
type may be enhanced by proximity between plants, the clustering logic of many
MNEs is primarily a function of hierarchy organization and information internal-
ization. The observed information internalization behaviour of the MNEs across
a range of locations (McCann, 1997) and sectors (Simmie, 1998) implies that the
geographical behaviour of these vertically-integrated MNE firms often has much
more in common with the industrial complex model of organization and location than with a pure agglomeration or social network type of cluster. Our observations therefore suggest that the opportunities for MNE firms to benefit from inter-firm local information spillovers are also rather more limited than many other authors assume (Saxenian, 1994). The reason is that the ability to benefit from such spillovers also depends on organizational issues. Unless the MNE is willing and is able to decentralize its organizational structures, almost to the point of complete hierarchy fragmentation, the MNE will neither benefit from, nor contribute to, such local externalities. The hierarchical MNE and the pure agglomeration or social network, are to a large extent mutually exclusive phenomena.

References


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