EXTERNAL NETWORKS AND GEOGRAPHIC CLUSTERING AS SOURCES OF MNE ADVANTAGES: FOREIGN AND INDIGENOUS PROFESSIONAL SERVICE FIRMS IN CENTRAL LONDON

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Abstract

This study combines the theories of international business and management with network theory in order to examines the networking activities of foreign affiliates. It focuses on a specific kind of network, which is taking place between firms based in geographic proximity. A comparative analysis between foreign and indigenous firms in selected professional service industries located in Central London is used as the analytical tool to isolate the networking attributes of firms in general from those that are unique to foreign affiliates and emerge as a result of their specific characteristics. The findings suggest considerable differences between foreign and indigenous firms in terms of their network behaviour. MNE internal networks appear partially to replace the advantages provided by external networks, acting both to diminish the MNE's need for external linkages and channel it into somewhat different directions.

JEL Codes: L22, L84, L14, L21

Keywords: networking, Multinational Enterprises, geographic clustering, Professional service firms, London

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INTRODUCTION

International business and management theories provide several grounds for assuming that the competitive advantages of foreign and indigenous firms will differ. First, multinational enterprises (MNEs) doing business overseas suffer additional costs, arising from their operation in foreign countries, which are not incurred by indigenous firms (Hymer 1960, Kindleberger 1969, Dunning 1993), what Zaheer has named 'the liability of foreignness' (Zaheer 1995, Zaheer and Mosakowski 1997). They offset these additional costs by their firm-specific advantages, and hence develop a somewhat different set of advantages. Second, to a certain extent firms base their advantages on the resources and conditions abundant in their home countries (Dunning 1979, Porter 1990, Hu 1992, Nachum 1999), to which they usually enjoy favourable access (Nachum 2000). Originating from different home countries, foreign and indigenous firms are likely to differ in terms of their advantages. Third, foreign affiliates are part of an international network and they draw some of their advantages from the scope of this network (Bartlett and Ghoshal 1989, Nohria and Ghoshal, 1997). Indigenous independent firms do not have similar access to such advantages and thus need to develop different mechanisms to acquire competitive advantages.

Empirical research, contrasting the strategic behaviour and economic performance of foreign and indigenous firms operating in the same geographic and industrial context, has indeed found considerable differences between them. International business scholars have found such differences in terms of productivity and innovative capabilities (for example, Willmore 1986), employment practices (UNCTAD-DTCI, 1994), financial performance (Michel and Shaked 1986), and operating efficiency (Miller and Phrake 2000, Miller 2000) among

others. International management scholars have paid considerable attention to the differences between foreign and indigenous firms in terms of their managerial and organisational practices (for example Rosenzweig and Singh 1991, Rosenzweig and Nohria 1994, Zaheer 1995, Zaheer and Mosakowski 1997). These studies have shown that the unique characteristics of foreign firms, that distinguish them from their indigenous counterparts, result in considerably different strategic behaviour and economic performance.

For the most part, however, this research has focused on comparison of the resources and capabilities internal to firms. This approach has its origin in the traditional focus of international management and business theories on such resources, which are firms' proprietary attributes and are defined by their ownership, as the major sources of their competitive advantages (Dunning 1993, Porter 1985). Only relatively limited research attention has so far been given to the ability of MNEs to sustain their existing advantages and acquire new ones via external links and interaction with other firms.

It can be argued that in this particular area, certain unique attributes of MNEs are likely to introduce considerable differences between them and indigenous firms. The large size and wide product and market scope of MNEs, and their embeddedness in wider international networks seem likely to affect their need for complementary assets derived from interaction with other firms and the competitive advantages they may gain from such interaction. One study, which has tested for such variation, has indeed documented considerable differences between foreign and indigenous firms in terms of the linkages they establish with other firms and the value of such linkages for the competitive performance of the firms concerned (Nachum and Keeble 2000). This research has also suggested that the external linkages of foreign and indigenous firms differ not only in degree but also in kind (Ghoshal and Westney 1992), that is, that foreign affiliates establish linkages with other firms for reasons different from those that drive the external linkages of indigenous firms. The present

study builds on Nachum and Keeble's study to some extent and extends and enriches its theoretical and empirical basis.

Recent changes in the internal organisation of MNEs have acted to increase their reliance on external linkages (see e.g., Dunning 1997, Castell 1996, Hagedoorn 1993 for documentation). In recent decades, MNEs have become increasingly more decentralised through new forms of subcontracting and outsourcing, and other networked forms of organisation, with fuzzy boundaries and growing dependence upon complementary capabilities controlled by other firms for their competitive position (Dunning 1997, Nohria and Ghoshal 1997). Many no longer rely solely on advantages generated internally, from their own resources and capabilities, but also depend on those created via the interaction with other firms. These changes suggest a need for a better understanding of these external linkages established by MNEs and their implications for the competitive performance of these MNEs.

This research seeks to contribute to such an understanding by examining how foreign ownership affects the need for and ability of firms to create formal and informal linkages with other firms. It is designed to study whether and to what extent the unique attributes of MNEs affect their needs for network interaction[1] and the advantages they gain from them. Indigenous firms are used as the yardstick for comparison, to isolate those factors that characterise all firms, regardless of the geographic scope of their activity, from those specific to MNEs. In so doing, the research brings together two bodies of theory which have thus far developed in separation – international business and management theory and network theory as this has been developed in the strategic management literature. The former provides the basis for theorising the nature of MNEs and the expected differences between them and indigenous firms. The latter provides the ground for the conceptualisation of network characteristics of firms.

The study incorporates assessment of one particular type of network which has hitherto been largely ignored by researchers in these fields, namely that taking place in close geographic proximity. For the most part, network theory, as developed in the strategic management literature, makes no explicit reference to the geographic location of the network (see e.g., some of the papers in Nohria and Eccles 1992 for a representative approach). Studies in the tradition of geographic clustering have shown that interaction taking place in a geographically confined locality has many unique attributes, resulting from the proximity of the parties involved (Keeble and Wilkinson 2000, Storper 1997, Scott 1998, among others), and hence requires specific attention.

Better understanding of the networking activities of foreign affiliates and the differences between them and indigenous firms has important implications for theory and practice. From a theoretical point of view, it would add to the understanding of the advantages that MNE draw from sources external to them. While the recognition of the importance of such advantages has been growing rapidly in the strategic management literature with reference to firms in general, it has been only partially applied to MNEs. The comparative approach adopted in this study would help identify whether there is a need to study the networking activities of foreign firms separately from those of firms in general. It would indicate the extent to which knowledge of these activities accumulating in the strategic management literature with reference to firms in general is applicable to foreign firms. Only if networking by foreign firms has characteristics that make existing theoretical models or paradigms inappropriate or inapplicable, may the pursuit of separate studies of MNEs be justified (Ghoshal and Westney 1992).

For the MNEs themselves, the research would provide insights into the implications of their growing participation in networks for the way they develop and maintain their competitive advantages. Such participation has made the competitive position of MNEs more dependent on coordination with other firms through exchange

relations, and more sensitive to their ability to establish such linkages efficiently. The way MNEs manage their network relations also affects the competitive behaviour and performance of the network as a whole. As a result, the performance of each firm comes to depend not only on its own capabilities and strategies but also on those of its network partners and its relationships with them. Competitive advantage is derived from conditions at the level of both the individual firm and its network (Gomes-Casseres 1996).

The arguments of the paper proceed in the following fashion. In the next section we generate a set of research hypotheses related to the characteristics of network activities of firms, and the expected differences between foreign and indigenous firms. These hypotheses are put forward for empirical test in the following sections, based on a sample of foreign and indigenous firms in management consultancy, legal services and advertising located in Central London. The presence of a large number of foreign firms in these three industries provides an appropriate context for comparison between foreign and indigenous firms competing in the same environment. The study concludes by drawing the implications of the findings for theory and practice.

THEORY AND HYPOTHESES

The traditional emphasis in international business and management theories was on the unique and internally-generated capabilities of individual firms (see Dunning 1993 for a representative approach). In this view, which follows from the classical approach to firms, the external linkages of firms were regarded as an exogenous variable that is structured by economic constraints, such as markets and competition. Recent conceptualisations have recognised that new forms of external collaboration among unaffiliated firms supplement the internally generated advantages (Forsgren and Johanson 1992, Colombo 1998, Kogut et al 1993, Gulati 1999). They suggest that the competitive advantages of firms are based not only on their internal assets, such as financial capabilities, product and process technology,

marketing expertise, organisational knowledge, proprietary rights and brand names, but also on the resources controlled by other firms with whom the firms concerned have various linkages. The firm obtains access to these external resources through its network relations.

Capabilities developed via interaction with other firms differ fundamentally from those developed internally. While the latter reside securely within a firm's boundaries, network resources emerge from firm participation in interfirm relationships, and the informational advantages that such relationships provide. The strategic management literature conceptualises a firm's network of relationships as a source of both opportunities and constraints. Strategic networks potentially provide a firm with access to information, resources, markets and technologies; generate advantages from learning, scale and scope economies; and allow firms to achieve strategic objectives, such as sharing risks and outsourcing value-chain stages and organisational functions. Networks also have a potentially dark side as they may lock firms into unproductive relationships or preclude partnering with other viable firms (Gulati, Nohria, and Zaheer 2000).

In this study we examine a specific type of network, which is geographically confined. With few exceptions (notably McEvily and Zaheer 1999, Pouder and St. John 1996) the conceptualisation of networks in the strategic management literature does not consider the territorial dimension, and pays no attention to the location of the network. Research in several disciplines suggests that networks established in close geographic proximity differ from networks in general and deserve specific attention. Economic geographers have shown that location is a powerful influence on the propensity of firms to interact and may greatly facilitate the processes of interaction and collective learning between firms (see for example Scott 1998, Keeble and Wilkinson 2000). Sociologists have also emphasised the impact of spatial distribution on the nature and intensity of social relations, and the limitations faced by geographically dispersed actors in accessing one another (e.g., Blau 1977, Marsden 1983), and have stressed the need to acknowledge this factor in analysing social

relations. This research shows that geographic proximity facilitates the development of a tightly knit set of connections that represent economic, institutional and personal interdependencies. These connections, which become part of the daily business of the locality, differ fundamentally from those developed over distance (see e.g., Lincoln, Gerlach and Takahashi (1992) for evidence based on linkages among Japanese Keiretsu networks).

The strategic management literature has acknowledged that firms differ systematically in their inherent propensities to cooperate, with some firms tending to network more than others, and has sought to identify the characteristics of firms that explain this variation. These include firm size and position in the value chain and prior experience with alliances (Powell and Kenneth 1996, Kogut, Shan, and Walker 1992, Walker, Kogut and Shan 1997). The culture and social background of the participants have also been argued to shape the evolution of network structure and the choice of ties within the network by individual firms (DiMaggio 1992, Gulati 1999).) Here we focus on the ownership of firms as another possible determinant of the intensity and nature of their networking activities.

Several characteristics of foreign affiliates, which distinguish them from indigenous firms, suggest that their network activities might differ from those of indigenous firms. First, foreign affiliates are part of an international network and as such are able to draw some of their advantages from this network, thus reducing their need for external interaction. They can often obtain within the MNE particular resources which indigenous firms have to obtain externally, and which often drive their search for relationships with other firms. Second, foreign affiliates competing in foreign countries are likely to possess different bundles of resources and capabilities, and their need for complementary assets sought in external network linkages might differ from those sought by indigenous firms. Such differences are particularly associated with the unfamiliarity of foreign affiliates with the foreign environment and difficulties they may face in accessing resources in foreign countries. Third, the wider geographic scope of

MNE activities implies that they have a greater need to gain access to sources of knowledge and information on a global level. The type of knowledge they are likely to seek in networking is likely to differ from that sought by indigenous firms. Unlike indigenous, independent firms, MNEs have a position in many networks and their strategic actions in each are much influenced by international dependencies (Mattsson 1998). Linkages in one network should thus be regarded in the overall international context and not in isolation in specific markets.

Transaction cost economics views the option of acquiring resources externally rather than implementing internally certain activities as being based on the logic of the make-or-buy decision, based largely on transaction costs economics (Williamson 1975). Transaction cost economics has sought to determine organisational boundaries by comparing the costs of internal production to the costs of relying on the market for production. In response to the criticism that the markets and hierarchies polarity neglects network options (Granovetter 1985, Powell 1990), the transaction cost paradigm has been modified to accommodate 'hybrid forms' (Williamson 1985), which represent a middle ground between arms-length transactions and hierarchical control. The decision to collaborate is thus conceptualised as a variant of the make-or-buy decision, based on the relative costs of transaction of the two alternatives. These conceptualisations have also acknowledged the effect of relationships with potential collaborators and the position of the firm within a network as affecting the costs of transactions (e.g., Kogut, Shan and Walker 1992).

If we extend this logic to the examination of the differences between foreign and indigenous firms, there are two reasons to expect foreign firms to rely on external network relations of suppliers to a lesser degree than their indigenous counterparts. First, indigenous firms are likely to have lower costs of transactions, a result of their greater familiarity with the environment and the often longer duration of activity within a network, two factors which are likely to reduce the costs of transactions within a particular network. Second, as part of an

international network, foreign affiliates have the option of reliance on this network for obtaining certain complementary resources. Internal costs of transactions may often be lower than external ones, favouring this option.

Formally:

H1: Foreign affiliates rely on an external network of suppliers for the provision of particular resources to a lesser extent than their indigenous counterparts, ceteris paribus.

Network relationships are central to the concept of local embeddedness of economic action (Granovetter 1985), and were traditionally regarded as being locationally bound. Proximity leads to lower search costs for a member of a networked organisation (Lorenzoni and Lipparini 1999). Issues of uncertainty, ambiguity and risk are difficult to address from distance, even through well-developed electronically mediated exchange. Effective interaction often requires the rich, multidimensional, robust relationships that can be developed only through face-to-face interaction (Nohria and Eccles 1992a).

The wider geographic scope of operations of foreign affiliates implies that they have greater needs for linkages with broader geographic scope, which link them with global levels of operations. Furthermore, the internal MNE network links foreign affiliates to sources of activity based elsewhere, and facilitate their global linkages. Hence, foreign affiliates are likely to have more global linkages, compared with their indigenous counterparts, which are often heavily dependent upon external network linkages in their near locality**.**

Formally:

H2: The geographic scope of the external networks of foreign affiliates is more global than that of their indigenous counterparts, ceteris paribus.

Research in network theory has acknowledged the existence of different types of network linkages and different forms in which they take place (see e.g., Brass and Burkhardt 1992). Here we focus on one aspect of this variation – formality of linkages. External network linkages can be more or less formal. At one extreme is the administration of linkages via formal market mechanisms; at the other, basing them entirely on informal mechanisms such as friendship. In reality there are all types of variations between these extremes. By their very nature, formal linkages are easier and faster to establish. They do not require the close interaction, typically over a long period of time, which leads to the development of trust necessary for the creation of successful informal links.

There are several reasons to expect that foreign affiliates will tend to rely on formal linkages to a greater degree than their indigenous counterparts. First, foreign affiliates are often newcomers to the networks that host them (Saver 1998). As such they are likely to have weaker ties within the network compared with indigenous firms who have a more established position and stronger ties developed over many years of interaction. Prior research in strategic management has suggested that inter-firm networks have a natural tendency to develop among entities already familiar with each other (Gulati 1995, 1999; Walker, Kogut and Shan 1997) and outsiders have only restricted access (Marsden 1983). Familiarity provides several valuable advantages in establishing network ties: search costs are lower, trustworthiness is established, and given prior knowledge and mutual understanding, these relationships can be managed more efficiently. Researchers in the Uppsala tradition of industrial networks have made it explicit that a firm's position in a network is a result of cumulative processes in which relationships are continually established, maintained and developed over time (Johanson and Mattsson 1988). There is a 'liability of newness' in such relations, which is likely to limit the ability of foreign affiliates to integrate in the network. Second, due to the liability of foreignness (Zaheer 1995) faced by foreign affiliates, and their lack of familiarity with the environment and local norms, there is likely to be variation related to ownership in

communication capabilities of firms within a network. This would diminish the ability of foreign affiliates to create informal linkages. Foreign affiliates are thus likely to rely on formal mechanisms to a greater degree than indigenous firms are.

Formally:

H3: Foreign affiliates would tend to rely on formal (rather than informal) linkages to a greater degree than their indigenous counterparts, ceteris paribus.

Firms are often unable to internalise all the resources necessary for production, and hence develop various forms of collaboration with other firms in their own and in closely related industries in order to get access to certain specific tangible and intangible resources (Powell and Kenneth 1996). The increasing complexity and multi-disciplinarity of resources required for the production of many products, particularly those based on advanced technology, and of the stock of relevant knowledge itself, facilitate interactions and cooperation among firms commanding complementary resources, thus sharing the various value-creating activities in the production of particular output (Arora and Gambardella 1990, 1994).

Foreign affiliates are likely to have less need for such collaboration agreements and be less able to establish them. Accessing resources via network relations is conceptualised in strategic management theory as a balance between external and internal resources. Firms cooperate because of potential synergies between external and internal sources of advantages and knowledge (Rosenberg 1990, Colombo and Garrone 1998). Since the emphasis is on the complementarity with capabilities they already have, one can expect foreign and indigenous firms to vary in their linkages, since the capabilities they possess initially differ. Hence, their needs for complementary assets differ. Nachum and Keeble (2000) have shown that MNE internal networks substitute for many of the advantages sought by indigenous firms through collaborations with other firms, notably those established to

reduce risks and share resources. Foreign affiliates can gain internally many of the advantages that indigenous firms seek in collaboration with other firms.

Foreign affiliates are also likely to be less capable of establishing collaboration relationships with other firms. Sociologists studying network relationships have acknowledged the existence of mechanisms limiting access to networks, and the consequent variation in the number of alternative exchange relations available for different actors (Marsden 1983). The main rationale for such access restrictions is the fact that mutual trust is a precondition for exchange relations in networks, replacing the role of formal rules in other exchange relations. Trust is built more easily in the presence of some shared characteristics and pre-existing network relationships. As newcomers to the network, with limited, if any, existing network relations, and with differences which may inhibit the creation of trust with other actors, foreign affiliates are likely to be less involved in network relations with other firms.

Formally:

H4: Foreign affiliates are less likely to engage in collaboration in production with other firms than indigenous firms would, ceteris paribus.

The strategic management literature has examined the potential advantages gained by firms from formal and informal relationships with clients, suppliers, employees, other firms and institutions, and has strongly emphasised the value of such linkages for performance (e.g., Burt 1992, Rowley, Behrens and Krackhardt 2000). Access to external resources through network relations and position can generate value for the firm and hence facilitate or impede a firm's performance (Granovetter 1985, Nohria and Eccles 1992).

Network theorists have suggested three key potential economic benefits that accrue to firms from taking part in network relations

(Burt 1992). The first is that of access to information that an individual firm lacks but can obtain externally through its network linkages. The second is the speed at which information is provided. The third is that of referrals to a third party. Network interaction thus promotes economic performance through interfirm resource pooling, cooperation, and coordination adaptation. A firm's network position and network structure thus shapes performance (Uzzi 1996). Rowley, Behrens and Krackhardt (2000) show that the manner in which firms shape and form their networks influences their performance. Powell and Kenneth (1996) found suggestive points of commonality between network involvement and various measures of success. They conclude that there appears to be a 'liability of unconnectedness' (Baum and Oliver 1992). Uzzi (1996) found that firms organised in networks have higher survival chances than do firms that maintain arm's length market relationships. The positive effect of network linkages on performance and survival reaches a threshold after which point the positive effect reverses itself.

The application of these theoretical arguments to the comparison between foreign and indigenous firms suggests that the network linkages of the latter are likely to be more valuable for their performance. In line with the hypotheses advanced above, indigenous firms are likely to be better able to establish external linkages and to engage in more intense network relations. Hence, they are likely to be more dependent on their external linkages (Forsgren and Johanson 1992), and these linkages in turn are likely to have greater impact on their performance.

Formally:

H5: External network relations are less valuable for the performance of foreign affiliates than for that of their indigenous counterparts, ceteris paribus.

PROFESSIONAL SERVICE FIRMS IN CENTRAL LONDON

The networking activity of professional service firms has traditionally received surprisingly little research attention, given that networking is significantly more frequent amongst such firms, compared for example with manufacturing firms (Bryson et al 1997; see also Bryson et al 1993). Moreover, the particular characteristics of these industries are likely to result in distinctive inter-firm relationships, providing an opportunity to examine existing theories in a different industrial context and to attempt to extend these theories to take account of the particular characteristics of professional services.

A major reason stated in the strategic management literature for networking and its benefits is related to the acquisition of knowledge not available internally in industries characterised by high knowledge intensity and rapid technological change (e.g., Powell and Kennedy 1996, Arora and Garmabelde 1990, 1994). The dependence of professional service firms on knowledge and information for their competitive success (Keeble et al 1992, Maister 1993, Nachum 1999), and rapid changes in this knowledge, makes linkages with other firms highly valuable, as some of the knowledge needed to compete successfully may only be obtained via interaction with other individuals and firms (Czerniawska 1999).

However, professional service firms differ from those in other knowledge-intensive sectors, such as 'high technology' industries, in terms of the type of knowledge they seek in such collaboration. Networking and collaboration by high-technology firms is driven by the need to obtain access to external technological and innovation-related knowledge, since innovation often requires the bringing together of different types of knowledge, which may not be available internally for a single firm (Arora and Gambardella 1990, 1994, Longhi and Keeble 2000). Knowledge-intensive professional service firms in contrast, exist to manipulate existing knowledge to provide one-time solutions to clients' unique problems (Lowendhal 2000). Their activities depend on the creative solutions of individuals within

the firm, and a single person or a small group often implements the entire value added chain. Networking and external interaction is important for such firms as a vital source of inspiration and creativity (e.g., advertising), or of complementary professional expertise (e.g., management consultancy), rather than of specific technological knowledge. This explains why networking in these industries seldom involves formal collaborations of any type (i.e., joint ventures, strategic alliances) (Nachum 1999), but rather looser relationships, driven by a search for informal opportunities to interact with other firms (Nachum and Keeble 2000, Czerniawska 1999).

Other explanations proposed for the upsurge in collaboration and networking among firms in other industries, such as risk reduction, may also not apply to professional services, since the provision of such services generally involves relatively low risk (Maister 1993). Unlike firms in other knowledge-based industries, notably high-technology industries, professional service firms do not invest huge sums in innovation that might prove uncommercial and unmarketable. Hence, risk sharing is seldom a reason for any form of collaboration. Also the nature of the ties and the resources transferred between the firms involved may differ from those observed in some other industries. Due to their sole reliance on intangible sources of competitive advantages, collaboration in professional service firms involves exchange only of intangibles, such as information and intangible assets, rather than goods, as often in the manufacturing case.

This study focuses on three professional service industries - management consultancy (UK92 SIC 74.14), legal services (UK92 SIC 74.11) and advertising (UK92 SIC 74.40). It is confined geographically to firms in these three industries located in Central London. For two reasons, these industries provide a particularly appropriate context to this study. First, unlike some other professional service industries (e.g., engineering consultancy), they exhibit patterns of strong geographic concentration within the UK and London (Figure 1), providing a suitable context for the examination of

the networking of firms located in geographic proximity. Research on agglomeration processes in urban centres suggests that the closer interaction between firms in these locations tends to increase the flow of information and strengthens the interaction between them (Glaeser 1997). Theory predicts that in a geographic cluster of this type local networking and inter-firm linkages will play a strong role in influencing the competitive advantage of individual firms and their economic performance (McEviley and Zaheer, 1999; Pouder and St. John, 1996; Scott, 1998; Uzzi 1997).

Second, the major flows of foreign investment to London which have taken place over the past half-century in these three professional service industries provides a large pool of foreign firms for the study and a suitable context for the comparison between them and indigenous firms. Britain (London) has attracted considerable foreign investment, overwhelmingly of US origin, in these three industries for decades and even centuries (see Nachum 1999 on advertising; Kipping 1996 on management consulting; Flood 1999 on legal services). These foreign firms have played a critical role in the development of the British industries and have often developed a dominant position in their respective London markets.

METHODOLOGY

The study takes a comparative approach, contrasting the networking activities of foreign firms with those of indigenous firms competing in the same industrial and geographical context. Comparative research is analytically more rigorous than a single group study, as it provides measurable counterfactuals (Buckley and Chapman 1996). Comparisons with indigenous firms enable identification of those networking characteristics which appear to be particularly distinctive of foreign affiliates.

One of the challenges in studying network activities is adequately specifying the boundaries of the network (Gulati 1995). There is no formal solution to this problem, because a basic feature of networks is

that they have no objective boundaries (Forsgren and Johanson 1992). Boundaries may need to be drawn for analytical or managerial purposes, but they are not inherent in the network structure. They are a result of perspectives, intention, and interpretations, a consideration which needs to be remembered when interpreting the findings.

Different criteria have been used to draw network boundaries, such as technology, country, product type or attributes of the actors and the types of relations between them (see e.g., Mattsson 1998, Rowley et al 2000). Here we adopt two criteria, the first of which is based on the geographical context in which the network operates and is thus defined by its spatial boundaries. We study only firms operating in Central London[2], the area which contains by far Britain's leading cluster of business in our selected professional service industries, and focus particular attention on their linkages within London, as compared with linkages elsewhere in Britain and globally. The second criterion is industry boundaries (that is, all firms whose main activity is in advertising, management consultancy or law). We chose these two criteria because we wish to control for these contextual factors in order to be able to focus on linkages of firms competing, at least potentially, in the same economic environment.

A second challenge is defining the content of the linkages, or what is regarded as network relations. Here we take a broad view of this matter, defining network relations to include the dense network of cooperation and affiliation by which firms are inter-related. We refer both to networks of market transactions and to networks of formal cooperative relationships.

The sampling frame was drawn from industry directories and included *Chambers & Partners: A Guide to the Legal Profession* for legal firms; *Account List File* for advertising; and *AP's Directory of Management Consultants in the UK* for management consultancy. Industry experts we consulted regarded these as the most authoritative and comprehensive sources of information on London's firms in these three industries.

The sample was stratified (by nationality) and was random within these categories. This procedure was selected to ensure similar representation of indigenous and foreign firms[3] in the sample (Singletton et al, 1988). After excluding for firms that no longer exist or do not regard themselves as competing in one of the three industries studied, the response rate was 41%. t-tests found no significant differences between respondents and non-respondents in terms of size (number of employees) and growth (changes in number of employees) at the 0.01 and 0.05 levels respectively. Table 1 presents some characteristics of the sample. The differences in sample size between the industries and by nationality[4] reflect variation in concentration levels and the total number of players, and in response rates.

The data in table 1 show large, mostly statistically significant, differences between foreign and indigenous firms in terms of their size and age. These differences could mean that some of the variation in networking characteristics between foreign and indigenous firms is due to the fact that the former are larger and older[5] rather than to the existence or non-existence of foreign ownership by itself. In order to test for this possibility, we constructed an index of networking intensity, calculated as the simple average for any given firm between external purchases (measured as shares of external purchases to sales) and number of collaborations with other firms and organisations undertaken during the last three years. The higher the index's value, the greater is the external network interaction. Though a crude measure, this index provides some indication of the extent of interaction within the network. The index was used to conduct one-way Candall Tau ANOVA tests, with the network linkages index as the dependent variable, ownership (British- or foreign-owned) as the independent variable and size and age as the covariates. Size and age were not significant (F= 1.034, Sig. F= 0.527; F=1.895, Sig. F = 0.781 for size and age respectively). These findings imply that despite the differences, size and age do not account for variation by ownership in the intensity of network linkages.

Data were collected by personal interviews administered via telephone during 1997 and 1998. Firms were asked for information about their clients and markets, the nature of their interaction with labour and supplier markets and other firms and organisations within their own industry, and the advantages they gain from such interaction. Telephone interviewing was selected as the method for the data collection as it has a number of benefits, notably the provision of direct contact with firms and a first-hand impression of their activities, objectivity of findings, and efficiency of data gathering. It thus provides many of the benefits of personal interviews at lower costs, which enabled us to reach a relatively large number of firms.

The purpose of the research was explained prior to the interview itself and confidentiality was guaranteed (in writing when requested) in order to establish confidence that the research would not undermine the firm's competitive edge. In each case, an attempt was made to approach the CEO, as the individual with the broadest knowledge of the overall operation and responsibility for the strategic decisions in which we are interested. However, approaching CEOs often proves difficult (Herz and Imber 1995), and in few cases, other senior executives were interviewed instead.

Operation of the constructs

Variables relating to each hypothesis were defined in the following ways:

H1: Reliance on external networks for the provision of resources

External purchases as share of revenues and their growth (% change) over the last three years.

H2: Geographic scope of the network

Estimated based on the location of clients and suppliers, distinguishing between three geographic levels: London, the rest of the UK and overseas. Shares of activity at each geographic level were calculated in the respective totals. The α Cronbach test was used to determine whether these separate measures add individually to the overall measure, using the recommended .70 (Nunnally 1978) as the threshold for their inclusion. All the individual variables exceeded this threshold. An index of local embeddedness was calculated as the geometric average of the % shares of London's clients and suppliers[6].

H3: Nature of linkages (Formality)

Firms were given a comprehensive list of means of obtaining business from clients, recruiting employees and appointing service providers, and were asked to report which of them they have used during the last three years. These various means were classified into formal and informal communication methods as follows:

Formal methods – approved lists, tendering, business directories, advertising, trade association/professional bodies, chamber of commerce, Department of Trade and Industry, local press, job centres, recruitment consultants, employment agencies

Informal methods – direct approach, referral from others, personal contacts, networks of associates. An index of formality was calculated based on the relative frequency of formal and informal methods, as follows:

$$LINK_i = \sum_{j=1}^{m} F_i \,/\, \sum_{j=1}^{m} InF_i$$

Where:
LINK = index of linkages formality
F = formal linkages
InF = informal linkages
i = firms
j = linkages (j=1…m)

The index can attain any value between 0 and infinity. The higher the value, the greater the tendency for formal linkages.

H4: Collaboration with other firms

a. The total number of the following linkages with other firms or organisations within their own industry during the last three years:
- joint ventures
- number of associates
- subcontracting of a whole project to another firm.

b. Firms were asked to report the methods used to deal with increased workload. These were classified into internal and external methods as follows:
internal methods – use of staff based elsewhere within the organisation, recruitment of permanent or part-time staff, use of temporary staff, more over-time by existing employees
external methods – use of associates, subcontracting work to another firm. An index of collaboration intensity was calculated based on the number of times each method was used in a given period, as follows:

$$COLL_i = \sum_{j=1}^{m} In_i \,/\, \sum_{j=1}^{m} Ex_i$$

Where:
COLL = index of collaboration intensity
In = internal methods
Ex = external methods
i = firms
j – methods (j=1…m)
The index can attain any value between 0 and infinity. The higher the value, the greater the tendency for reliance on internal resources.

H5: Value of network linkages for performance

Self-reporting evaluation of the importance of network linkages for the performance of the firm is used to measure the perceived value of

network linkages from the perspective of the firms. A distinction was made between three categories: highly important, moderately important, unimportant.

Table 2 presents the descriptive statistics and correlation coefficients of these variables.

STATISTICAL ANALYSIS

To test the hypotheses, we construct a model, linking nationality of ownership as the dependent variable with the network characteristics hypothesised above as the independent variables. The model is of the following form:

Oi = ƒ(NETi; Ii) + Ei

Where:

O – Ownership – a dummy variable that is given the value 0 for British, 1 for foreign

NET – a vector of characteristics of network linkages (summarised in table 2)

I – industry, dummy variable for industrial affiliation

E - residual

i - firms, i=1….n, n=211

Independent sample t-tests suggested that the missing value patterns are not random, and therefore they were estimated based on existing observations. The model constructed above was estimated for all observations for which the dataset was complete, and was then used to estimate missing values.

The model was estimated by means of binary logistic regression analysis. We estimate the model in two different ways – based on the Wald statistics and the log likelihood. The Wald statistics is the common method of estimation of binary logistic regression. However, when the absolute values of the regression coefficients are large, the estimated standard error generated by the Wald statistics is too large.

This produces Wald statistics that are too small, leading to a failure to reject the null hypothesis that the coefficient is 0 when in fact it should be rejected. To prevent a possible bias by relying on the Wald statistics alone, we base our hypothesis test on the change in the log likelihood result from estimating the model with and without each of the explanatory variables (Hauck and Donner 1977) (Table 3).

We also calculate the R statistics, which are used to examine the partial correlation between the dependent variable and each of the independent variables. R can range from –1 to +1. A positive value indicates that as the variable increases in value, so does the likelihood of the event occurring. If R is negative the opposite is true. Small values for R indicate that the variable has a small partial contribution to the model.

The findings reported in Table 3 reveal that the great majority of our hypotheses are supported by the analysis. Only two of the network characteristics are not significant, while the rest distinguish strongly and significantly between foreign and indigenous firms in terms of their networking intensity and attributes. Specifically, the analysis demonstrates that MNEs are significantly less reliant on external networks for the provision of resources (H1), are less geographically embedded in terms of their orientation to London suppliers and clients (H2), rely on market mechanisms for their external linkages to a greater degree than indigenous firms do (H3), and regard external linkages as less valuable for their performance (H5). These findings suggest that, in line with our hypotheses, the MNEs unique characteristics and their ability to draw on the MNEs internal network indeed limit their reliance on local resources. The global scope of their activities further diminish their local embeddedness and link them, in part, to networks operating at more remote geographic levels. The significance of the industry dummy indicates that industrial affiliation affects network behaviour, and that the three industries studied here differ in some significant ways in terms of the network linkages of firms. The overall high explanatory power of the model

suggests how important is the set of network attributes in distinguishing between foreign and indigenous firms.

These findings also raise the question as to whether the differences found here are a matter of kind or of degree, that is, do MNEs establish stronger/weaker network linkages, or do they instead establish different ones, because they are seeking to achieve different goals via these linkages. In a comparative analysis of international and domestic firms in the New Zealand wine industry, Chetty and Wilson (2000) found that the linkages of these firms with other firms in their own and in closely related industries were established for different reasons. International firms were found to focus on networks with firms in their own industry (horizontal networks) while domestic firms had a tendency to network more with firms in industries different from their own (vertical networks). The former networks provided access to a significant amount of external resources, especially organisational and human resources, and were found to play a significant role in acquiring resources and developing capabilities as firms internationalised. By contrast, the latter were established primarily for social reasons and were a source of more general market knowledge.

Although our survey data does not permit any detailed consideration of this question, anecdotal knowledge of the activities of the firms studied here suggests that the differences between them and their indigenous counterparts are a matter of both kind and degree. That is, foreign firms rely to a lesser extent on external network linkages, as some of their needs are met internally, by accessing resources available within the MNE's internal networks. But they also have somewhat different goals in their external network relationships. Notable is their reliance on these networks to acquire local market knowledge, and in this way to overcome some of the liabilities associated with their operation in a foreign country. Because of their foreignness, their need to acquire this type of knowledge from external network resources is greater than that of indigenous firms.

These findings are in line with those reported by Nachum and Keeble (2000) based on their study of the media cluster of Central London.

The findings reported here should also be considered in the context of the duration of foreign investment in the industries studied. Research has consistently shown that some of the differences between foreign and indigenous firms tend to dissipate over time (e.g., Zaheer and Mosakowski 1997), as foreign firms acquire local knowledge and become more familiar with local norms and routines of operations. Foreign investment in the industries studied here is relatively longstanding, with some of it having its origins in the early decades of the 20th century. The average duration of operation in London of foreign firms in our sample is nearly 20 years (see table 1). Furthermore, other studies have found an experience effect in international network relationships (Madhok 1997), suggesting that over time firms tend to strengthen their network linkages in foreign countries. Our findings thus suggest that although duration of operation is certainly a factor affecting the differences between foreign and indigenous firms, it does not eliminate all of them.

Our model results (table 3) reveal that there are no significant differences between foreign and indigenous professional service firms in Central London with regard to external suppliers and collaboration intensity. The non-significance of external suppliers might be attributed to two operation routines of professional service firms, which act to diminish the differences between foreign and indigenous firms. First, compared with other industries, there is relatively limited use of external suppliers by professional service firms, as concepts such as ‘inputs’ and ‘intermediaries’ are alien to the operation of these industries. There is limited ability to break down the production processes. Outsourcing is thus confined only to a certain kinds of activities, most typically not the core ones (Maister 1993, Lowendahl 2000). As our findings show, this relatively marginal role played by external suppliers is not associated with ownership differences. Second, professional service firms seldom establish linkages with external suppliers over distance. This follows from the non-

standardised nature of these activities, which favours on-going interaction between the partnering firms. Such interaction is hard to establish over distance. Hence, foreign affiliates rely on MNE internal linkages only to a limited degree, and tend to operate in a manner similar to that of indigenous firms.

The non-significance of collaboration is likely to be related to the nature of collaboration in professional services. As discussed above, the linkages of professional service firms with other firms in their own and related industries are driven primarily by the need to get access to non-codified professional and market knowledge and to sources of creativity and innovation. Such linkages cannot be implemented over distance, limiting the ability of foreign affiliates to rely on the MNEs of which they are part for their provision, and rendering their behaviour in this respect similar to that of indigenous firms.

In order to assess how well the models classify the observed data, we compare the predictions of the model to the observed outcomes (table 4). Both analyses yield very high fits between the predicted and observed values, with a slight improvement in the log-likelihood analysis, which is in line with expectations. Additional information on the goodness of fit of the model is obtained by calculating the –2LL, which examines how 'likely' the sample results actually are, given the parameter estimates, known as the likelihood (-2LL). This measure also suggests a high likelihood of the observed results.

In order to test the robustness of the estimation results, we calculated for each case the difference between the observed probability of being classified as British or foreign and the predicted probability based on the model. Standard Diagnostic Plots of these values showed that the residuals came from a normal distribution, with several outliers. Estimation of the model without these observations did not change the conclusion drawn from analysis of the whole sample. The findings were confirmed at a similar significance level for the reduced sample.

CONCLUDING REMARKS

In this study we have sought to examine the network activities of MNEs and the way they affect their internal linkages and the generation of their competitive advantages. A comparative analysis between foreign and indigenous firms competing within the same industrial (selected professional service industries) and geographical (Central London) context was used to isolate those attributes that characterise the networking of firms in general from those that are specific to foreign affiliates. The findings show that the network relations of foreign affiliates differ considerably from those of indigenous firms. A set of network attributes possesses strong and statistically significant power in discriminating between them. The unique attributes of MNEs seem to create a specific type of networking relations, which differ from those characterising indigenous firms. The findings support the view that internal linkages within the MNE seem to limit the reliance of foreign affiliates on some aspects of networking and collaboration with other firms located in geographic proximity. The liability of foreignness may also limit their ability to create networks similar to those of indigenous firms. Access to the global network of the MNE of which they are part, and the more global scope of their clients, also widens the geographic scope of the networks of foreign affiliates.

These findings throw considerable light on the extent and direction of differences and similarities in the network characteristics of foreign and indigenous professional service firms. Our previous discussion also provides some explanations as to why the differences we have identified occur. It stresses differences arising from foreign affiliates being part of an international network, through which they gain some of the advantages sought by indigenous firms in external networks. This discussion also emphasises differences arising from the different nature of operation of foreign and indigenous firms, and hence the needs for different complementary assets sought in networks. The nature of our study design and survey data, however, does not allow us to identify in what specific ways foreign firms actually compensate

for the 'liability of foreignness' at the individual firm level. How such compensation is occurring is an important area for future research, given the clear findings of the nature of differences identified by our study.

The findings reported here contribute to several bodies of theory. For international business and management theories they suggest a need to modify the implicit assumptions according to which MNEs' capabilities are generated internally, based on the assets owned by them (e.g., Dunning 1993). Rather, sources of competitive capabilities are often embedded externally in firms' network resources, and they arise from interaction with other firms. Hence, the ability of firms to create external linkages is an important source of advantage that should receive specific attention. The findings also contribute to the emerging stream of research on the nature of the differences between foreign and indigenous firms (Zaheer 1995, Zaheer and Mosakowski 1997, Miller 2000, Nachum 2000), by extending the notion of the liability of foreignness to sources of advantages which are external to firms. They show that the unique attributes of MNEs, which result in them operating differently than their indigenous counterparts, also affect their need and ability to become embedded in external networks of linkages.

The findings contribute also to network research in strategic management literature in two ways. First, they highlight the nationality of ownership of firms as an additional firm-specific attribute which affects the nature of their network linkages. Our findings show that this attribute is indeed a significant determinant of the nature and intensity of the networking activities of firms, and should be added to the firm attributes recognised in this literature as determining these activities. Second, by limiting the scope of the analysis to firms located in geographical proximity, the study provides a starting point to assessing the impact of geographic proximity on the networking of firms.

For managers of MNEs these findings imply that the ability to create external linkages is a source of competitive advantage on its own right. In addition to efforts to improve the quality and efficiency of the resources and capabilities which reside securely within the firm, managerial resources should also be given to a firm's ability to interact with the outside world as a major source of advantage, as a capability that should be developed and maintained. Several related issues should receive specific managerial attention in this context. These include questions such as how to build and use networks; how to maximise their benefits for the firm; how to secure a position within the network which will maximise the access to the network resources; how a firm's network linkages compare with one another and with those of their main competitors.

The findings have different implications for managers of foreign or indigenous firms. External network linkages would be more critical for indigenous firms than for their foreign-owned counterparts, and their management thus creates a greater challenge for the managers of the former than for those of the latter.

Several specific characteristics of the context studied here should be examined by future research in order to establish the validity of the findings. First, due to the non-tradability of professional services and the need for high levels of local adaptation, foreign investment in these industries is overwhelmingly in the form of horizontal investment (Nachum 1999). Such investment modes are characterised by limited control of the headquarters over the affiliates and high amount of autonomy for the affiliates (e.g., Rosenzweig and Nohria, 1994, Nohria and Ghoshal 1997). These autonomous affiliates are likely to develop network linkages independently of the headquarters, similarly to indigenous firms. The findings reported here may not be valid for vertical investment, where the affiliates are controlled by the headquarters more closely and interact externally to a lesser degree.

Second, a notable characteristic of professional services is that the entire value added chain is implemented within a single firm, and

sometimes by a single person or a small group (Maister 1993, Lowendhal 2000). Under such circumstances, the external linkages of firms are not established in order to share value-adding activities, as is common in many other industries, but rather are directed more towards the acquisition of certain types of non-codified knowledge. It is likely that the nature of the external linkages which firms establish would differ when production is organised at high levels of vertical disintegration and intense sub-contracting relations, where each firm performs a series of specialised tasks, towards the common goal of joint production of outputs.

Third, our study focused on a sample of firms located in a geographically bounded area. This is one of its main contributions, but yet the validity of the findings to broader geographic levels cannot be taken for granted. These geographical boundaries may obscure important exchange relations with firms located elsewhere. A failure to examine a sufficiently broad range of relationships may generate a distorted view of how influence is structured on a broader geographic scope. Such a scope allows one to grasp the complexity of the network and the role commonly played by particular types of firms. There is a need to examine how global, space-less linkages change the conclusions of the present study. Furthermore, linkages at different geographic levels may vary in kind, not only in degree, and may fulfil different needs (Nohria and Eccles 1992, Nachum and Keeble 2001).

Another important task for future research is testing the issues addressed here in a dynamic context. Networks are constantly evolving entities, entailing indefinite, sequential transactions within the context of a general pattern of reciprocity. A static study like the present one thus provides a snap shot of the situation in one specific point of time, but it cannot convey a sense of the on-going changes, so fundamental to network relationships.

Notes

[1] There is no accepted definition of network relationships and the term is often used to describe considerably different phenomena (Nohria and Ghoshal 1992). In this paper we use this term to refer to the structuring of business relations among firms that leads to stable and recurring patterns of interaction (Kogut et al 1993). Network relations differ from both markets and hierarchy in that unlike the former, firms' linkages are based on exchange relationships and their needs and capabilities are mediated through the interaction taking place in the relationship, rather than through the market mechanisms that transform the demands and supply of the different actors into market prices. Networks differ from hierarchy insofar as the actors are autonomous and handle their interdependencies bilaterally rather than via a co-ordinating unit on a higher level (e.g., Powell 1987, Forsgren and Johanson 1992).
When referring to business networks, we use the phrase 'external networks', to distinguish from the internal networks within MNEs, that is, the exchange relationships among the MNE's different units.

[2] Central London is defined as including the following boroughs: City of London, City of Westminster, Hackney, Tower Hamlets, Southwark, Lambeth, Wandsworth, Hammersmith & Fulham, Kensington & Chelsea, Camden and Islington.

[3] The commonly used threshold of 10% for foreign ownership (e.g., UNCTAD 2000) was adopted here, making a dichotomous distinction between foreign and indigenous firms, with no judgement regarding the degree of foreignness.

[4] The notion of a firm's nationality, which is so critical in this study, is somewhat obscure in industries where partnerships are the dominant ownership form (as is the case in law and to a lesser extent management consultancy). The nationality of these

partnerships cannot be identified in a manner similar to that of corporations, where the location of the parent is used as a proxy for the nationality of the whole firm, because it is usually the centre of the firm's activities. The common practice used in this regard by industry analysts, which is adopted here, is to link firms to the country in which the dominant partnership is located.

[5] With the interesting exception of law firms, where indigenous British firms are larger and older.

[6] We use the geometric average rather than a factor or component analysis to calculate this index because we wish to impose a structure on the index, in which each of its individual components gets equal weight.

TABLES AND FIGURE

Table 1. Some characteristics of the sample

Sample averages (standard deviation)

	Foreign			British			All		
	N	Size	Age	N	Size	Age	N	Size	Age
Advertising	28	152.22 (171.54)	26.86 (24.52)	69	34.02 (65.28) ****	23.37 (7.63) **	97	66.37 (128.94)	15.02 (12.93)
Law	40	48.64 (67.81)	14.63 (12.19)	22	137.54 (319.27) **	24.04 (13.82)	62	61.91 (187.10)	14.22 (11.06)
Consulting	22	186.63 (185.26)	22.76 (16.62)	30	80.43 (363.21)	13.96 (6.60) ***	52	125.36 (303.24)	15.09 (12.73)
All	90	111.97 (157.53)	18.60 (16.60)	121	56.00 (224.36) *	13.62 (7.40) ***	211	78.80 (201.35)	14.77 (12.25)

t-test (2-tailed) for equality of means significance levels (equal variances assumed, based on Levene test of homogeneity of variance):

* $p<0.1$

** $p<0.05$

*** $p<0.01$

**** $p<0.001$

Size is measured by employment at the time of the survey, age by years since establishment.

Table 2. Descriptive statistics and correlation coefficients of the variables analysed

Constructs	Operation measures	Mean	Std. Deviation	Spearman correlation coefficients						
				Growth	External suppliers	Embedded	Formality	Collabor	External linkages	Value of linkages
Reliance on external networks (H1)	Growth	.343	.193	1.000	.103	-.130	.177*	.068	.129	-.021
	External purchases	0.215	.820		1.000	-.021	-.092	-.017	.048	-.036
Geographic scope of network (H2)	Local embedded.	0.366	0.515			1.000	-.152	-.012	-.236**	-.296**
Nature of linkages (H3)	Formality	7.315	12.379				1.000	.044	.260**	.155
Intensity of linkages with other firms (H4)	Collabora-tion	14.180	35.728					1.000	-.089	-.030
	External linkages	11.259	23.570						1.000	.115
Performance (H5)	Value of linkages	1.830	.850							1.000

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table 3. Estimation of a model of network linkages – Binary Logistic Regression

Constructs	Operation measures	Wald statistics				Log likelihood function		
		Coefficients	Wald	Sig.	R	Coefficients	Log likelihood	Sig.
Constant		8.063	21.699	.000		8.014		
Reliance on external networks (H1)	Growth	-10.236	22.696	.000	-.266	-10.349	-70.679	.000
	External suppliers	-.193	.282	.595	.000			
Geographic scope of network (H2)	Local embedded.	61.362	6.622	.010	.126	62.958	-54.427	.001
Nature of linkages (H3)	Formality	-4.152	18.011	.000	-.234	-4.115	-62.677	.000
Intensity of linkages with other firms (H45)	Collabora-tion	.000	.059	.807	.000			
	External linkages	-2.780	19.547	.000	-.245	-2.844	-65.846	.000
Performance (H5)	Value of linkages	-1.905	22.805	.000	-.267	-1.913	-67.228	.000
Industry	Dummy	.709	4.061	.043	.084	.683	-51.418	.045
-2 Log Likelihood		98.469				98.830		
Goodness of Fit		161.688				161.597		
Model chi-square		192.752				192.391		
Significance		.000				.000		

Table 4. Classification of the model

4.1 Wald statistics

		Predicted		
		British	Foreign	% Correct
Observed	British	114	10	91.23
	Foreign	11	76	87.36
			Overall	88.95

4.2 Log-Likelihood

		Predicted		
		British	Foreign	% Correct
Observed	British	117	7	94.02
	Foreign	9	78	89.66
			Overall	91.80

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