"THE MULTINATIONAL CORPORATION AS A NETWORK: PERSPECTIVES FROM INTERORGANIZATIONAL THEORY"

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Abstract

A multinational corporation consists of a group of geographically dispersed and goal disparate organizations that include its headquarters and the different national subsidiaries. Such an entity can be described as an interorganizational network that is embedded in an external network consisting of all the other organizations with which the different parts of the multinational have to interact. Based on this conceptualization, the paper develops a model of the multinational as an internally differentiated interorganizational network, and proposes some hypotheses that relate certain attributes of the multinational, such as resource configuration and centrality, to certain structural properties of its external network.
In a recent review of the literature on organizational aspects of multinational corporations (MNC's), Martinez and Jarillo (1987) presented a list of 82 research-based publications that, according to the authors, was merely an enumeration of "key studies" and did not constitute an exhaustive inventory of all academic work on this topic. Of these 82 publications, 53 have appeared within the last 10 years. In other words, this topic has received a significant amount of attention from researchers, and not surprisingly, given the increasing importance and visibility of multinationals both as key economic actors and as forces of social change (Stopford, 1983; Dymsza, 1984; Root, 1984), and the opportunity they provide to the social scientist for exploring one of the most complex organizational forms that currently exist.

A careful review of this literature may, however, generate some mixed feelings about its theoretical and normative contributions. On the one hand, a few studies and conceptualizations such as those by Perlmutter (1969), Stopford and Wells (1972), and Prahalad and Doz (1987) have contributed simple yet powerful frameworks that have helped both academics and managers develop a better understanding of environmental and organizational factors that influence choice of basic structures and decision making processes in MNC's. On the other hand, an overwhelming majority of the studies have focused on minor modifications to these frameworks that have had very limited theoretical or practical import. With very few exceptions (e.g., Bartlett, 1982; Leksell, 1981; Prahalad and Doz, 1981), most effort has been expended on building contingency frameworks for explaining differences in different structural attributes of MNC's, but such effort has been non-cumulative because of inconsistencies and contradictions in findings across studies: variables that have been found in one study to have positive correlations with particular structural aspects such as centralization, have been found to have no effect or even negative effect in others (Gates and Egelhoff, 1984). Besides, the overall theoretical apparatus that has been constructed has generally proven to be too static to deal with issues such as evolution, stability and change in MNC organizational structures and processes (Bartlett, 1982).
The objective of this paper is to propose that a new vitality can be infused into academic research on this topic if the underlying theoretical anchor is broadened from the current exclusive dependence on the intraorganizational approach and, more specifically, on the contingency models that dominate this approach, to greater openness toward another strand of organization theory, namely, the concepts of action-sets and networks that are more commonly used for exploring interorganizational phenomena (Evan, 1967; Aldrich and Whetten, 1981). We believe the interorganizational approach to be theoretically more appropriate because its constructs match more closely the nature and level of complexity of the phenomenon that is under investigation. Multinational companies are physically dispersed in environmental settings that represent very different economic, social, and cultural milieu (Robock et al, 1977; Fayerweather, 1978; Hofstede, 1980); are internally differentiated in complex ways to respond to both environmental and organizational differences in different businesses, functions, and geographic locations (Bartlett and Ghoshal, 1987; Prahalad and Doz, 1987); and, as a result of such dispersal and differentiation, possess internal linkages and coordination mechanisms that represent and respond to many different kinds and extents of dependency and interdependency in inter-unit exchange relationships (Ghoshal and Nohria, 1987). The concept of a network, both as a metaphor and in terms of the tools and techniques of analysis it provides, is better equipped to deal with such complexity in comparison to the corresponding constructs and tools that are available from more traditional approaches of organizational analysis.

As suggested by Aldrich and Whetten (1981), interorganizational groupings such as organization sets or networks are constructs created by an investigator and the relevant issue is not whether a multinational corporation indeed exists in the form of a network, but how might such a conceptualization be useful for analyzing different attributes of such organizations. Therefore, the main thrust of our arguments in this paper is directed at showing the potential advantages that the interorganizational approach can provide in investigating organizational characteristics of MNC's, illustrating some of the new concepts and hypotheses that can be imported into the process of inquiry by such a change in the underlying theoretical infrastructure, and highlighting the relevance and practical significance of those hypotheses.
Interorganizational Theories Applied to the Multinational Corporation

In defining the interorganizational field as a focus of investigation, Warren (1967) developed a typology of organizational contexts that distinguished between the ways in which organizational units interact. These were labeled unitary, federative, coalitional, and social choice. Instead of being discrete categories, these contexts were proposed to vary in ordinal fashion in the direction from one extreme - The unitary, to the other - social choice, along a number of dimensions such as relations of units to an inclusive goal, locus of decision making and authority, and prescribed collectivity orientation of units.

A number of theoretical perspectives have emerged in the discussion of interorganizational relations such as the exchange theoretic approach (Levine and White, 1961; Emerson, 1962, 1975; Aiken and Hage, 1968; Cook, 1977), a resource dependency model (Aldrich, 1976; Pfeffer and Salancik, 1978), a political economy perspective (Benson, 1975) and a Marxian dialectic approach (Zeitz, 1980). Despite the general theoretical scope of these perspectives, their empirical applications have largely been limited to contexts that range from federative to social choice. Thus, studies have focused on such linkages as among social service organizations (Van de Ven and Walker, 1984), federative structures such as the United Way (Provan, 1982), Universities (Pfeffer and Salancik, 1974), and local governments (Bacharach and Aiken, 1976). Interaction contexts that range from Unitary to federative have been excluded from the domain of interorganizational enquiry and placed in the domain of interorganizational analysis (Cook, 1977). As such, the relationships between different units of diversified business organizations such as the multidivisional or multinational corporation have rarely been examined from an interorganizational perspective.

One consequence of such a research approach has been that much of the existing analysis of such complex and often dispersed business organizations has been limited by a relatively narrow conceptualization of an "organization" and its relevant "environment". According to Nohria and Venkatraman, this limitation has stemmed mainly from the tendency of researchers toward "(i) general categorization of an organization in formal distributional (e.g., organization chart, division of responsibility, authority, etc) and categorial
(e.g., centralized versus decentralized, mechanistic versus organic, differentiated versus integrated, etc.) terms as opposed to relational terms (i.e., actual interaction patterns based on both internal and external flows of goods, information and authority) and (ii) their abstraction of the environment as a source of undefined uncertainties (e.g., volatility, turbulence, resource scarcity, etc) as opposed to a field of specific interacting organizations which locate the source of these contingencies" (1987:2).

In contrast to this limitation of traditional intraorganizational analysis, the dominant construct in most interorganizational theories is an exchange relation (e.g., Ax and By) which may be defined as consisting of "transactions involving the transfer of resources (x,y) between two or more actors (A, B, ..) for mutual benefit" (Cook, 1977:64). Furthermore, as Cook observes (1977:63), "The term actor in the theory refers not only to individuals but also to collective actors or corporate groups [thus making] it uniquely appropriate when organizations or subunits of organizations are used as the primary unit of analysis".

From this perspective of interorganizational theory, a multinational corporation can be conceptualized as a network of exchange relationships among different organizational units including the headquarters and the national subsidiaries that are collectively embedded in what Homans (1974) described as a structured context. Further, following Tichy, Tushman, and Fombrun (1979), we can also visualize this network as embedded in an "external network" consisting of all the organizations such as customers, suppliers, regulators, and competitors with which the different units of the multinational have to interact. And, as suggested by Benson (1975) and empirically supported by Provan, Beyer and Kruytbosch (1980), different attributes of the multinational network can then be related to selected attributes of this external network on which the company is dependent for its survival. A relatively clear exposition of this concept is the main agenda of this paper. However, before proceeding with such analysis, certain concepts and terms must be defined and related to their theoretical origins.
Terminology

Let us consider a multinational corporation $M$ with operating units in countries $A$, $B$, $C$, $D$, $E$, and $F$, and a focal organization in the corporate headquarters $HQ$. Note that $HQ$ serves as a coordinating agency and plays the role that Provan (1983) described as belonging to the "Federation Management Organization (FMO)" and must, therefore, be clearly distinguished from the organizational unit (say $A$) that is responsible for operations in the home country of $M$, even though the two may be located in the same premises. By the term "multinational network" we shall refer to all the relationships and linkages that exist among the different affiliated units of $M$, i.e., among $A$, $B$, $C$, $D$, $E$, $F$, and $HQ$.

Each of the affiliated units of $M$ is embedded in an unique context and, hence, has its unique action set (Aldrich and Whetten, 1981). For example, the unit $A$ has relationships with a specific set of suppliers $[s_A]$, buyers $[b_A]$, regulatory agencies $[r_A]$, and competes for resources with an identifiable set of competitors $[c_A]$. Collectively, the group consisting of $[s_A, b_A, r_A, c_A, \text{etc}]$ constitute what we shall call the "action set" of $A$ and refer to as $[ASA_A]$.

Different members of the action set $[ASA_A]$ may be connected by ties that may be strong or weak, resulting in different levels of cohesiveness within the group (O'Reilly and Roberts, 1977). By the term "connectedness within the action set" we shall refer to the extent of such cohesiveness among members within the different action sets such as $[ASA_A], [ASA_B], \text{etc}$.

These different action sets of the different affiliated units of $M$ may themselves be interconnected through different coercive, normative, or mimetic ties (Dimaggio and Powell, 1983). By the term "connectedness among the action sets" we shall refer to the extent of such interlinkages among the different action sets such as $[ASA_A], [ASA_B], \text{etc}$.

Because of such physical, cognitive, affective or other interlinkages among the different action sets, all members of all the action sets of the different affiliated units of $M$ collectively constitute what we shall describe
as the "external network" within which the multinational network is embedded (Tichy, Tushman, and Fombrun, 1979). The external network will therefore be the population of all organizations that enter into exchange relations with one or more affiliated units of the multinational. Some of the members of this external network may be connected directly, while some others may be connected indirectly.

Our main thesis in this paper is that different attributes of the multinational network can be explained in terms of selected attributes of the external network. As argued by Benson (1975), the interactions within a network are best explained at the level of resource exchange. This suggests two attributes of the multinational network as particularly relevant to our analysis: (1) The configuration of resources within the network, and (2) The structural characteristics that mediate internal exchange relations and continually restructure the resource configuration (Zeitz, 1980).

Resources such as production equipments, finance, technology, marketing skills, and strategic or management capabilities may be located in any one or more of the different affiliated units of M. By the term "resource configuration" we shall refer to the way in which the resources of M are distributed among A, B, C, D, E, F, and HQ. In particular, we will discuss two aspects of resource configuration, namely, dispersal and specialization. The former refers to the extent to which the company's resources are concentrated in one unit versus dispersed among the different affiliated units; the latter represents the extent to which the resources located in each unit is differentiated from those in others.

As for structural characteristics, prior research has identified a number of attributes that are relevant for analysis at nodal, dyadic, triadic or network levels (Fombrun, 1982; Pearce and David, 1983). We shall not attempt a comprehensive discussion of all these relevant attributes, but will limit our attention to only one, namely, centrality. By this term we shall refer to the degree to which relations within the multinational network are guided by the formal hierarchy (Tichy et al, 1979). We choose this attribute primarily because it corresponds to the structural characteristic of centralization that has been perhaps the most analyzed attribute of multinational organizations and therefore provides a basis for directly relating our analysis to a large body of empirical findings that are available in the existing literature.
Resource Configuration in MNCs

Resource configuration in MNC’s has traditionally been analyzed from an economic perspective, with the assumption that resource location decisions are primarily based on the desire to minimize costs (Hirsch, 1976) and risks (Lessard and Lightstone, 1986). Explanations of both dispersal and specialization have therefore focused on economic factors such as differences in the costs of inputs (e.g., Stevens, 1974), the potential benefits of portfolio diversification (e.g., Jacquillat and Solnik, 1978), and potential scale economies in different activities (e.g., Porter, 1985).

We present here an alternative analytical framework that relates dispersal and specialization of an MNC’s resources to the extents of connectedness within and among the action sets of its different affiliated units. While the constructs we use are not those that are typically used for economic analysis, we believe it might be possible to relate them. For example, structure of the domestic industries in different countries, including the extent of horizontal and vertical integration, has been proposed in the economic literature as an important determinant of a multinational’s resource configuration (Caves, 1982). High levels of connectedness in the local action sets can clearly lead to such integration, formal or tacit, and thereby provide a theoretical link between our arguments and the substantial body of economic literature Caves reviews. Similarly, imperfections in the world’s factors, goods, and intermediate product markets have been proposed in economic theory as a key determinant of foreign direct investment (see review in Calvet, 1981). Interconnections among the different action sets can reduce these imperfections, and our hypotheses on the consequences of high connectedness in the external network, derived largely from interorganization theory, are not inconsistent with the consequences of decreasing market imperfections suggested by economic theory. Kogut (1986) has already presented an well argued case, grounded principally in the economic literature, on how the inter-institutional set-up in different countries might affect the strategic actions of MNC’s. Our analysis is rooted in a view very similar to his, and has indeed been influenced strongly by his work.
As described by Westney and Sakakibara (1985), some countries such as Japan may be characterized by much stronger and denser linkages among the suppliers, producers, regulators, customers, etc. involved in a particular field of industrial activity compared to other countries where such linkages may be weaker due to economic, legal, sociological, cultural, or historical reasons. Such linkages among the different actors may be established and maintained through many different mechanisms such as interlocking boards of directors, cross-holding of equity, institutionalized systems of personnel flows, long term contracts and trust-based relationships, and mediating roles of gatekeeping organizations such as trade associations, banks, and consultants (see, for example, the collected essays in Evan, 1976).

In locations where the local action sets are strongly interconnected, the local units of the multinational would require all the complementary resources that are necessary to interface with all members of their action sets. If they have only one or the other kind of resources such as only research, or manufacturing, or marketing facilities, they will not be accepted within the action sets since strong and multiplexed ties among the other members will lead to exclusion from the sets of those who cannot establish equally strong and multiplexed ties with each member. This argument follows from the effects of strong ties in a network described by Granovetter (1973) while establishing his thesis about the strength of weak ties. The strength of ties within the local action set raises the entry barriers, and therefore requires greater resource commitments on the part of a company that wants to operate in the market (Caves, 1982). At a more practical level, Westney and Sakakibara’s (1985) study on the R&D activities of Japanese and American computer companies illustrates the proposed effects of connectedness in local action sets. According to these authors, the Japanese R&D centers of some of the American computer companies could not tap into local skills and technologies because the absence of associated manufacturing and marketing activities prevented the isolated research establishments from building linkages with the local "knowledge networks" that were embedded in the strong and dense connections among different members of the action set for the computer business in Japan.

Therefore, in locations where the local action sets have high connectedness, the MNC will locate a full range of resources at the appropriate level so that its local units can act as independent and
autonomous organizations that are fully paid-up members of the local action sets. As a result, high levels of internal connectedness within the different local action sets of the affiliated units of the multinational will lead to a high level of dispersal of the company's resources, but low levels of specialization since each unit must have all the resources that are necessary for carrying out all related activities. Hence,

H1: Connectedness within action sets will be positively associated with dispersal and negatively associated with specialization in the configuration of resources in a multinational.

Connectedness Among Different Action Sets

In a world that some authors have characterised as a global village (Levitt, 1983), the different action sets in different locations can themselves be mutually interlinked through physical or normative ties. For example, a particular customer of B may actually be an affiliated unit of another multinational company, and other units of M such as C, D, and E may also be serving that company's affiliated units that are part of their local action sets. These different affiliated units of a multinational customer may engage in such activities as comparative evaluation of prices and terms of supply offered by B, C, D, and E, and may also demand overall commonalities in the conditions of their exchange relationships with the different units of M (Terpstra, 1982).

Similarly the actions of regulatory agencies in one location (say, r_A) may influence the actions of their counterparts in other locations (say r_B). Such influence may be manifest in action such as retaliation by r_B to what is seen as protectionist actions of r_A, or deregulation by r_B to reciprocate or just emulate similar action by r_A (Mahini and Wells, 1986). Such physical or normative linkages may also exist among suppliers and competitors. In fact, much of the current literature on the strategic and organizational choices of multinationals considers such linkages among competitors as a key factor for explaining different aspects of MNC behaviors and performance (Hamel and Prahalad, 1983; Porter, 1986).

A low level of connectedness among the different external action sets
will typically be the consequence of factors such as lack of transportation and communication facilities or regulatory barriers and the same factors will also prevent internal flows of goods, people or information among the different units of the multinational (Chandler, 1986). In the extreme case of total absence of any connections, a multinational company might not exist in that business since it would have no advantages over separate domestic companies in each environment. In the more typical case of low connectedness when only a few members of the different action sets might share weak ties, a multinational might exist but its resources will tend to be highly fragmented and dispersed among the different units so that each can carry out all related activities more-or-less independently on a local-for-local basis. In the normative literature, this context and the resulting dispersed and unspecialized configuration of resources have been described as the multidomestic (Porter, 1986), or locally responsive (Prahalad and Doz, 1987) approach to multinational management.

A high level of connectedness among the different external action sets, on the other hand, will provide the MNC with greater discretion and choice on its resource configuration. Such choice can be exercised on the basis of different criteria. In some cases, even though the overall linkages among the action sets may be high, some specific members in the different action sets may only be weakly connected, or not connected at all. Such a situation typically exists in the input action sets because of regulations that selectively prohibit certain flows of people and products. Such situations will tend to protect the "resource niches" (Aldrich, 1979) that may have developed in some of the action sets because of traditional or non-traditional comparative advantages of countries (Kogut; 1986). In this case, the MNC might tend to concentrate specific activities in specific locations so as to maximize its access to these resource niches on a global basis, and also to benefit from such economies of scale as may be available for those activities. In other words, its resource configuration may follow the economic rationale proposed in location theories of foreign direct investment (see review in Caves, 1982) and be concentrated and specialized in a few locations instead of being dispersed among all the affiliated units.

When the connectedness among all the elements of the different action sets is high, such resource niches may be eliminated because of freer flows. If technologies developing in one location can be accessed instantaneously
from others, or if excess capital available in one environment can be borrowed in markets located in others, there is no longer any need to locate specific activities in specific locations to benefit from access to local resources. In this situation, the MNC can adopt a different set of criteria that emerge from the attributes of the complex external networks that are formed through the interconnections among the different local action sets.

Consider, for example, the situation when customers in locations A, B, D, and E are strongly influenced by the tastes and preferences of customers in C. Bartlett and Ghoshal (1986) and Prahalad and Doz (1987) have described the existence of such "lead markets" in many businesses and their existence is predicted by the "normative systems" that Laumann et al (1978) proposed as one of the modalities that influence the behaviors of members in a network. In such a situation, the MNC will tend to locate a significant amount of resources in C so as to be able to sense the demands of local customers and respond to them in a fashion that attracts their patronage. The level of resources in C will match not the resources and opportunities that are available in the local action set [AS_C] but the greater role of C as a nodal point in the broad external network that is created by the linkages among [AS_A], [AS_B], [AS_C], etc.

In either of these two cases, however, the following hypothesis will remain valid:

H2: Connectedness among action sets will be positively associated with specialization and negatively associated with dispersal in the configuration of resources in a multinational.

A General Model And Three Special Cases.

We can now consider these two hypotheses collectively to propose a general model of resource configuration in multinational companies, and also suggest some specific cases that emerge under particular conditions.

To consider the general case, let us recognize that for most worldwide businesses, the levels of connectedness within and across the action sets are different in different national environments. Connectedness among the
different action sets may be high in the developed countries of the west, or among regional groupings, but low in developing countries or countries that are relatively more regulated and autarcic. Similarly, connectedness within the local action sets may be high in homogeneous societies with strong inter-institutional linkages and low in countries where such linkages are discouraged through legislation, or impeded because of societal heterogeneity and the absence of linking institutions, or rendered ineffective because of poor local communication infrastructures.

Therefore, the configuration of resources in multinationals engaged in such businesses will be influenced by multiple criteria. In some locations internal connectedness within the local action sets may be high, but external connectedness with other action sets may be low. In such locations, the multinational may provide all required resources in appropriate measures so that its local units can be self-sufficient and can carry out all necessary tasks independently on a local-for-local basis. The action sets in some other countries may be weakly connected internally, but different elements of those action sets may be strongly connected across the different countries. For these locations, the multinational may create a resource structure that is concentrated and specialized, and in some cases the location of the specialized resources may reflect the desire to access special resource niches, while in other cases the location choice may be motivated by the modalities in the network that is created by the linkages among the action sets. Finally, the action sets in a third group of locations may be characterized by high connectedness both within and among themselves. In these locations, the multinational may establish all the complementary resources for integrated operations, but it may link these locations with others so as to leverage those resources and achieve the economies of concentration and specialization.

The overall resource configuration in the multinational's network of affiliated organizations then, will reflect a mix of some resources that are dispersed among some units on a purely local-for-local basis; some that are concentrated in some countries to access specialized local resource pools, or benefit from economies of scale, or in response to special roles that may be played by actors in those locations in the external network of interconnected action sets; and still others that are dispersed in certain locations, not for meeting the local needs alone, but for serving other locations to which
members of the local action sets might be connected. Thus, in this general case, the multinational's resource configuration will reflect both dispersal and specialization, and some parts of the dispersed and specialized resources will be interlinked with multiplexed ties to support the intense internal flows of products, people, and information that will be generated by such a complex and interdependent system. This general case may be represented by a model of multinationals as Differentiated Networks (DN): the word differentiated highlighting the differences in the levels and kinds of resources that are made available to the different units, and the word network emphasizing the communication and exchange contents of the flows that must internally link those differentiated, dispersed, and specialized resources.

From this general model, we can now derive three special cases that would be obtained under specific conditions of connectedness within and among the different local actions sets (see figure 1).

[Insert figure 1 about here]

If the connectedness within each of the local action sets is low, and if the connectedness among all the different action sets is high, the multinational can concentrate all its resources in any location of its choice. Under such a condition, it might choose to locate almost all its resources in one location, perhaps the home country because of the benefits of proximity (Dunning, 1980), and may locate minimal resources in the other operating units which may act merely as the local distributors of standardized products that are designed and manufactured centrally. The resulting configuration of its resources will match Perlmutter's (1969) model of the ethnocentric multinational and Bartlett's (1986) description of the centralized hub.

Second, consider a situation where all the local action sets are strongly connected internally but are not connected among themselves. In such a situation, most of the resources of the MNC will be dispersed among the operating units on a local-for-local basis, with little or no specialization, so as to make each unit fully autonomous and self-sufficient. The resulting configuration of resources will correspond to what Perlmutter described as the polycentric multinational and Bartlett called the decentralized federation.
Third, assume a situation when all the local action sets are highly connected internally and also highly connected among themselves. In this situation, the resources of the company will be dispersed among the various operating units, and each unit will have a broad range of complementary resources to facilitate integrative operations. However, each of these units will have broader responsibilities for certain tasks for either the whole or some part of the total network of all affiliated units. Such a configuration corresponds to Perlmutter's description of the geocentric multinational, Bartlett's proposal for the integrated network, and Hedlund's (1986) conceptualization of a holographic organizational form that he labelled the heterarchy.

The fourth situation of low connectedness both within and among the action sets typically represents highly fragmented businesses that are not international and often not even national in their structures. A multinational is not expected to operate in such a context (Caves, 1982).

Centrality in the MNC Network

Centrality of a network has been defined differently by different authors (Freeman, 1979, identifies three definitions) and has been typically operationalized in terms of the communication content of the network (Aldrich and Whetten, 1981). However, as suggested by Tichy et al (1979), it refers essentially to the degree to which relations within the network are guided by the formal hierarchy and is therefore determined by the distribution of power within the network (Cook, 1977). The greater the asymmetries in internal distribution of power, the greater the centrality in both the information and the exchange contents of the network (Mitchell, 1973).

Recent literature on the distribution of power in a social network reveals two main sources of power in such collectivities (Fombrun, 1983). First, power is an antipode of dependency in exchange relations (Emerson, 1962) and accrue to those members of the network who control critical resources required by others but do not depend on others for resources (Aldrich, 1979; Pfeffer and Salancik, 1978). Following Cook (1977), this might be called "exchange power" to distinguish it from the second source of
power which may arise from structural rather than exchange dependencies. "Structural power" can emanate from the position of a member within the network: as described by Fombrun, "it can accrue to a member who occupies a strategic position in a web of exchange relations" (1983:495).

Exchange-based distribution of power within a multinational would depend on the dispersal of resources among its members. The greater the dispersal of resources (controlling for specialization), the lesser is the dependency of any affiliated organizational unit on others for resources, and hence, the extent of asymmetry in internal exchange transactions. We can therefore formulate the following hypothesis which derives support from the well-established resource dependency perspective in organization theory (Pfeffer and Salancik, 1978).

**H3:** Centrality of a multinational network will be negatively associated with dispersal of resources within the network.

Similarly, structure or position based power within a multinational will depend on the specialization of resources among its members. The greater the specialization of resources (controlling for dispersal), the lesser is the extent of one-way dependencies within the network and the greater the extent of reciprocal dependencies (Thompson, 1967), and therefore, the frequency of "balanced" relations that reduce the role of exchange based power (Emerson, 1962). However, a network of mutual dependencies also enhances the need for coordination, and hence the power of "mediators" (Cook, 1977:72) who can provide such coordination by virtue of their position in the network that allows them to act as brokers in the flow of resources within the network.

The higher the specialization of resources in the network, the higher the vulnerability of the network to the removal of the mediating actor (Cook, 1977), and hence higher the centrality of the mediating actor even though the actor may not control any of the key resources directly. The following hypothesis summarizes this argument:

**H4:** Centrality of a multinational network will be positively associated with specialization of resources within the network.
H3 and H4, in conjunction with H1 and H2 lead to the following hypothesis that relates the centrality of the multinational network directly to the extents of connectedness within and among the different action sets of its affiliated members:

H5: Centrality of a multinational network will be negatively associated with connectedness within the action sets of its affiliated members and positively associated with connectedness among those action sets.

This derived hypothesis finds independent support from a different strand of interorganizational theory, namely, the political economy perspective developed by authors such as Benson (1975), and Provan et al (1980). Benson, for example, had suggested that power in intraorganizational relations may be influenced by the broader interorganizational linkages that are established by the members. Subsequently, Provan et al provided empirical support to this proposal when they demonstrated that power relations within the network of United Way organizations were significantly modified by the linkages between the individual agencies and other elements in their communities upon which the United Way organization depended for its survival.

The dependence of the United Way on the local communities of its different organizations is no different from the dependencies of the multinational on the local action sets of its affiliated units: just as strong linkages within the key elements of their communities enhanced the powers of the United Way organizations, high levels of connectedness within the local action sets enhance the powers of the individual members of the multinational network and thereby reduce the centrality of the overall network. And, as a direct corollary of this argument, the higher the connectedness among the different action sets, the lower the ability of individual members to accumulate power by virtue of their links with their local action sets, and, therefore, the potential centrality of the network.

Internal Coalitions and Multiple Centers

In the preceding analysis of centrality, we have retained the assumption that is pervasive in the existing literature on multinational organizations, namely, that there is one center in the MNC – the headquarter –
and that the subsidiaries' activities and influences are limited to their local jurisdictions. However, the very conceptualization of the MNC as an interorganizational network that is embedded in an external network suggests that this assumption might not be true. There is no reason for the external network to have a single focal point. Further, even if it does have just one node in the form of a single market that dominates all aspects of the business on a world-wide basis, there is no guarantee that the node will coincide with the location of the MNC's headquarters. Further, it is only for analytical simplicity that we have considered only one external network for the MNC. In reality, there will be multiple external networks, one each for the different ways in which its activities can be defined. Consequently, the MNC network can also have multiple centers, and different internal coalitions corresponding to the different coalitions and nodes that may exist in its multiple external networks (Burt, 1978).

Typically, these multiple external nodes have existed on a regional basis, leading to the regional structure that has been adopted by many MNC's (see the discussion on "regiocentric" MNCs in Heenan and Perlmutter, 1979). Increasingly, however, the pattern is becoming more complex. To cite an illustration, there is growing collaboration among the Post, Telegraph and Telephone authorities (PTT) in different countries that are characterized by thin population densities since their needs for public switching systems are similar. Therefore, while Finland is located in Europe, its PTT has stronger connections with the PTT in Australia than those in Germany or France. Such collaboration among these key members of their external networks are forcing multinationals supplying telecommunications switching equipment to redefine the communication and exchange structures of their internal networks: for example, Australia is emerging as a nodal point within Ericsson, the Swedish telecommunications equipment company, specifically for its rural switching business. Further, it is also leading to the formation of an internal coalition (Pearce and David, 1983) within Ericsson involving Australia, Finland, and Sweden with extensive flows of resources and information among these units of the company to coordinate their rural switching operations (see Bartlett and Ghoshal, forthcoming).

A detailed theoretical analysis of the formation of such multiple nodes and coalitions within a multinational network is beyond the scope of this paper and will be the topic of a forthcoming analysis. We mention the
issue, however, since the network approach predicts this phenomenon, the existence of which has been documented by many authors (e.g., Poynter and White, 1984; Bartlett and Ghoshal, 1986; Prahalad and Doz, 1987).

Conclusion

We have claimed that the main benefit of importing an interorganizational perspective into the analysis of multinational organizations is the better match between complexity of the phenomenon and the ability of the analytical concepts and tools to deal with such complexity. In this concluding section, we return to this initial assertion and suggest how the kind of analysis we have presented in this paper might provide the advantages we have claimed. In particular, we highlight two potential strengths of the network-theoretic approach. First, it provides an integrative framework for simultaneous analysis at multiple levels such as the dyadic relationship between any two organizational units of the multinational, overall attributes of the multinational organization, and even higher order aggregates such as the alliances that are increasingly being formed by different multinational companies. Such simultaneous investigation across different levels of analysis, we claim, is essential for the study of complex multi-unit organizations such as the multinational. Second, such a conceptualization also enables a single theoretical approach within which cross-sectional analysis of organizational attributes of a multinational can also lead to an understanding of the processes of its evolution, stability, and change.

Simultaneous Exploration at Different Levels of Analysis

Much of the existing literature on multinational organizations has tended to focus exclusively on explaining differences among companies and, therefore, to ignore differences within companies (see, for example, Daniels et al, 1984; Egelhoff, 1982; Stopford and Wells, 1972). Such an approach may be entirely appropriate for analysis of relatively small and simple organizations in which case internal differences within them may be dwarfed by the differences among them. In the case of complex multi-unit organizations such as the multinational, however, an assumption of internal homogeneity may be inappropriate and the analytical model may remain incomplete until differences within and among organizations are incorporated within a broader
Let us illustrate the issue with an example from the existing literature. Centralization is perhaps the most studied attribute of multinational organizations and much effort has been expended by scholars to explain the level of centralization in MNCs as a function of a range of organizational and environmental attributes such as foreign product diversity, size of foreign operations, size of parent company, experience in international operations, ownership of subsidiaries, technology complexity of industry, age of subsidiary, intercompany transfers of products, dynamism in competitive climate, and so on. Table 1 shows the authors who found positive, negative, and no associations between centralization and each of these different variables. The differences in the findings have typically been ascribed to differences in samples and measurement procedures but, as is manifest from the table, each new study has only provided an additional set of data points without resolving the ambiguity in any way.

The network concept, on the other hand, suggests that the problem with these studies may well lie not in the samples or measurements, but in their focus on differences among MNC's in isolation of the differences within them. By ignoring the potentially significant differences in centralization for different organizational units of the multinational, these studies may well have been victims of what Fisher (1970:172) called the "reductive fallacy" -- the fallacy of reducing complexity to simplicity, or diversity to uniformity.

The network formulation would provide the tools for simultaneous analysis of each dyadic linkage within the multinational, and the overall attributes of the network that are not mere aggregates of the dyadic relationships but are independently influenced by the structure of the network. The individual linkages, for example, can be operationalized as mixed-motive dyads and the governance structure for each linkage can be analyzed on the basis of mutual resource dependencies (Schmidt and Kochan, 1977). A recent empirical study by Ghoshal and Nohria (1987) illustrates such
an approach and shows how internal differences in structural attributes such as centralization, formalization, and socialization can be related to the resource structures of MNC’s. At the same time, information of the different dyadic links can be analyzed through partitioning and blockmodelling techniques for studying different network level attributes and for explaining aggregate level differences among MNC’s (for review and references, see Nohria and Venketraman, 1987).

Further, the traditional approaches of organizational analysis requires a clear definition of the organization’s boundary. As suggested by Powell (1987), the proliferation of "hybrid organizations" is making such a distinction between the organization and its environment increasingly difficult and arbitrary. Nowhere is the problem more acute than in the analysis of MNCs who are increasingly forming alliances of different kinds with their suppliers, customers, and competitors (see Horwitch, forthcoming). As a recent collection of work on such alliances (Contractor and Lorange, 1987) demonstrates clearly, it is proving to be difficult to incorporate this phenomenon within traditional analytical frameworks. By focusing on relations among actors, the network analytic approach provides greater flexibility with regard to the definition of boundaries, and can therefore be applied for analyzing the complex structures that are formed by such alliances. Recent methodological developments of network partitioning have now created the opportunity for incorporating a level of rigour in the analysis of such relationships - for example, the definition of the "roles" of different partners as revealed through blockmodelling algorithms - that has been lacking in most existing studies (see Walker, 1987 for suggestions on how network methodologies can be applied to the analysis of inter-firm cooperative relationships).

Linking cross-sectional analysis with evolution and change

Observers of evolution and change in multinational organizations have repeatedly lamented that the traditional tools of structural analysis provide little help in explaining the dynamics of such organizations (see, for example, Bartlett, 1982 and Leksell, 1981). As suggested by Bartlett, evolution and change in multinationals are driven by changing patterns of relationships among organizational units that participate in different
decision processes. Traditional cross-sectional analysis, on the other hand, has typically focused on structural artifacts such as the choice between area, product, and matrix structures (Stopford and Wells, 1972) which provide little information on the nature of internal relationships and actual management processes. Consequently, the literature has developed along two parallel paths of increasingly sophisticated cross-sectional and dynamic analysis but without developing a bridge between the two.

Network analysis, by its very focus on relationships and flows, can provide such a bridge. For example, based on the concepts presented in this paper, we can formulate the change process as arising from the sequential influences of the external network of the internal resource configuration, and of resource configuration on governance and coordination mechanisms. Changing levels of connectedness within and across the external action sets can be proposed as the exogenous elements that would determine the nature and direction of change. The strength of internal ties (Granovetter, 1973) and the perceived fairness of internal exchange relationships (Zeitz, 1980) - both attributes being influenced directly by the nature of the external network but also by what Bartlett (1986) describes as the administrative heritage of the company - can be seen as the mediating factors that determine the rate and pace of change. Through such a formulation, different constructs of which are relatively well developed in the literature, an overall theory can be developed for linking cross-sectional analysis with the study of evolution, stability, and change in MNC's.

As a concluding point, it needs to be noted that our proposal to conceptualize multinational organizations as interorganizational networks is not an altogether new research approach but an effort to build on some concepts that exist in the international management literature but that, to our view, have not been sufficiently developed because of inadequate research attention. We have referred earlier to the seminal work of Perlmutter (1969), and his scheme of categorizing multinationals as ethnocentric, polycentric, and geocentric organizations is clearly a network theoretic view. His work and the subsequent refinements and elaborations of his models (e.g., Rutenberg, 1970) both motivate and influence our analysis. Similarly, the stylized models of MNC organizations developed by Bartlett (1986) and Hedlund (1986) are grounded in the same concepts and constructs of network theory that
we have utilized in our formulation of the differentiated network model presented in this paper. Further, if the interorganizational approach is implicit in the work of these authors, it is explicit in Herbert's (1984) analysis which shows the relevance of the resource dependency model in explaining strategy-structure configurations in MNC's. It is unfortunate that these proposals have not been pursued more vigourously by empirical researchers, perhaps because the conceptual models were not adequately related to the relevant strands of theory. Our objective in this paper was to take a step, albeit small, in the direction of building a bridge between these rich and inductively derived models of multinational organizations and some recent perspectives from interorganizational theory and network analysis.
Connectedness among the different local action sets

<table>
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<tr>
<th>LOW</th>
<th>HIGH</th>
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<tr>
<td>Multinational organizations not expected to exist in this context</td>
<td>The ethnocentric multinational (Perlmutter)</td>
</tr>
<tr>
<td>The centralized hub (Bartlett)</td>
<td>The Polycentric multinational (Perlmutter)</td>
</tr>
<tr>
<td>The decentralized federation (Bartlett)</td>
<td>The geocentric multinational (Perlmutter)</td>
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<td>The integrated network (Bartlett)</td>
<td>The heterarchy (Hedlund)</td>
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Figure 1

Multinational organizational forms under different conditions of external action sets
Table 1
Research on Centralization in MNC's: Summary of Findings

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<th>Contingency variables</th>
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<td>Positive Correlation</td>
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<tr>
<td></td>
<td>No correlation/ Mixed Results</td>
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<tr>
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<td>Negative Correlation</td>
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Sumantra Ghoshal (Ph.D, MIT and DBA, Harvard) is Assistant Professor of Management at the European Institute of Business Administration (INSEAD), Fontainebleau, France. Christopher A. Bartlett (DBA, Harvard) is Associate Professor at the Harvard Business School. The authors thank Nitin Nohria who was an active and equal partner during the idea development phase, and would have been a co-author of this paper but for the temporary distraction of having to write a doctoral dissertation.
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