Asian Academy of Management Journal, Vol. 8, No. 2, 45–66, July 2003

A DUAL NETWORK MODEL OF INTERLOCKING DIRECTORATES

Humphry Hung
Hong Kong Polytechnic University
Hong Kong, China

ABSTRACT

The article proposes an integrative framework for the study of interlocking directorates by using an approach that encompasses the concepts of multiple networks and resource endowment. This serves to integrate the traditional views of interorganizational linkages and intra-class cohesion. Through appropriate strategic analysis of relevant resource endowment of internal environment and external networks of organizations and corporate elites, this article argues that the selection of directors, if used effectively, can be adopted as a strategic device to enhance the corporation's overall performance.

INTRODUCTION

Mainstream management literature distinguishes at least two different approaches in studying interlocking directorates: interorganizational coordination (Podolny & Baron, 1997; Gulati & Singh, 1998; Rowley, Behrens, & Krackhardt, 2000) and intraclass cooperation (Useem, 1984; Walker, Kogut & Shan, 1997; Zaheer, McEvily & Perrone, 1997). Although attempts have been made to integrate these two distinct areas of studies into one (Palmer, 1983; Ornstein, 1984; Belliveau, O'Reilly & James, 1996; Westphal, 1998; Dyer & Noboeka, 2000), an all-inclusive theory or model is yet to be developed.

The difficulty of integrating these two approaches may be attributable to the fact that interorganizational coordination focuses on organizations while intraclass co-operation uses people, especially corporate elites, as the unit of analysis (Fligstein, 1995; David, Rahul & Levitas, 1998; Gulati & Garguilo, 1999). The former is basically an economic explication emphasizing the exchanges of resources among organizations while the latter is primarily a social concern of the domination of the elite class. A valid theory of interlocking directorates should be able to explicate both the economic and social aspects of how and why directors interlock (Bian, 1997; Dyer & Noboeka, 2000).

This article attempts to propose a new perspective for the study of interlocking directorates. It is argued that a board of directors can be regarded as a strategic institutional device of an organization to extend and consolidate the business as well as interpersonal networks of the top management of the organization. The resource endowment of interlocking directors, rather than the organizations or the directors themselves as members of the elite class, will be the unit of analysis in this article. The resource endowment, which is partly explained in terms of resource-based theory, will be used to rationalize the network process as well as dyadic relationship of organizations through interlocking directorates. Personal resources of directors, expressed in terms of the relative position within their interpersonal networks, are also regarded as significant in addition to the roles of directors as agents for maintaining interorganizational linkages or class rationality (Lane & Lubatkin, 1998; Gulati & Garguilo, 1999).

This article focuses on two most important networks: interorganizational networks and corporate elite's interpersonal networks. Directors' relative positions in these two networks, which may give rise to their influence on other members in the networks, will enhance their resource endowment. This will further consolidate the power and influence of the directors concerned. Using these two networks to describe the structure (how directors interlock) and directors' resource endowment to analyze the process (why directors interlock), a new dual network model of interlocking directorates is proposed. Propositions and implications on theory development and research, as well as strategic management will also be presented.

Terminology

A few terms will need to be clarified before we proceed with the discussion of the proposed interlocking model. The corporations which the directors own or are employed as full-time executive directors are termed in this article as directors' *primary corporations*. Those directors sitting on the governing boards of other corporations are referred to as *interlocking corporations* (Westphal, 1999). Directors' *organizational resource endowment* refers to those resources that are possessed by the directors' primary organizations and may be managed or controlled by these directors. Directors' *personal resource endowment* includes those tangible and intangible resources that are possessed by individual directors (Khanna, Gulati & Nohria, 1998). An example of tangible resources are shareholdings, through which a person endowed with capital becomes a director of the company (Fligstein, 1995; Westphal, 1998). Intangible resources are professional expertise or experience, social status or political influence of directors. *Outbound directors* are the CEOs, executive directors or members of the management team of a corporation, who serve as non-executive directors of interlocking corporations other than affiliated companies or subsidiaries of their primary corporations. *Inbound directors* are outside directors who have no direct relationship with the incumbent organizations.

THE DUAL NETWORK MODEL

In simplest words, when a person sits on the boards of directors of two or more corporations, these corporations are said to have interlocking directorates (Mariolis & Jones, 1982; Walker, Kogut & Shan, 1997; Rowley, Behrens & Krackhardt, 2000). As discussed earlier, interlocking directorates have been studied with respect to two major perspectives: interorganizational coordination and intraclass cooperation.

The interorganizational approach uses interlocks as indicators of corporate control, intercorporate cohesion or community of interest, and interorganizational resource dependency (Mizruchi, 1982). Interlocks therefore function as a form of co-optation mechanism, a device for intercorporate power and influence, and channels of communication among corporations (Pfeffer & Salancik, 1978; Zaheer, McEvily & Perrone, 1997; Dyer & Noboeka, 2000). An organization will interlock with other organizations through its directors as long as the interlocks are economically viable and beneficial to the organization. The unit of analysis is organizations and their networks. The focus of study is the structure of the networks and dyadic interaction between two interlocking organizations. The degree to which a corporation is interlocked may be seemed as the magnitude of its interdependence with other corporations (Mizruchi, 1982; Belliveau, O'Reilly & James, 1996; Zaheer, McEvily & Perrone, 1997; Gulati & Singh, 1998).

The second approach treats the interlocking directorates as a social phenomenon of expressing and maintaining class solidarity (Ornstein, 1984; Doz, 1996). It is a means of social, political and ideological coordination of corporate elite (Useem, 1984; Zaheer, McEvily & Perrone, 1997). The unit of analysis is the elites in modern capitalist societies and the study focuses on the extent class cohesion and class-wide coordinated action is upheld by interlocking directorates (Useem, 1984; Dyer & Noboeka, 2000).

The fundamental diversity between these two approaches to the study of interlocking directorates originates from the differences in terms of their units of analysis and degree of institutionalization and socialization of directors. The interorganizational coordination approach focuses on economic exchanges of resources among organizations (Fligstein, 1995; David, Rahul & Levitas, 1998; Gulati & Singh, 1998). Directors, according to this approach, are acting mainly as agents that initiate and facilitate the dyadic exchanges of economic resources between one organization and another. They are sometimes described as "co-optive corporate actors" (Burt, 1980: 582). Socialization of the directors and institutionalization of their organizations is unlikely to fall within the scope of the study. The structure of interlocking directorates will be expressed in terms of institutional networks that organizations participate in order to obtain valuable organization-based resources.

The intraclass cooperation approach uses corporate elites as the unit of analysis. Its primary concern is the extent to which the socialization of this group of elite may have effect on the society at large and the policy in general. Organizations are media through which the corporate elite obtains social status and political power (Bian, 1997; Hargadon & Sutton, 1997; Khanna, Gulati & Nohria, 1998). The personal attributes of directors, expressed in terms of their social status in the elite class, are prerequisite conditions for participating in the interlocking directorate networks (Bian, 1997; David, Rahul & Levitas, 1998). These networks are institutional channels and means to socialize the corporate directors in favor of the elite class. The directors, in return for their acceptance into the elite class, act as agents to preserve the class interests through director interlocks (Westphal, 1999).

Table 1 shows a comparison between the interorganizational coordination approach and the intraclass cooperation approach to the study of interlocking directorates. The comparative analysis may cast some insights into the possibility of integrating these two approaches into a unified framework for theory development. This is in fact the theme of this article and will be done by adopting a resource-based view with a focus on the resource endowment of directors as the unit of analysis.

TABLE 1
A COMPARISON BETWEEN THE INTERORGANIZATIONAL COORDINATION APPROACH AND THE INTRACLASS COOPERATION APPROACH TO INTERLOCKING DIRECTORATES

	Interorganizational coordination approach	Intraclass cooperation approach
Unit of analysis	Organizations	Corporate elite
Directors' major role	Control, obtain resources and exchange information	Preserve class interests
Analytical framework	Economic analysis	Social analysis
Socialization of directors	Less concern	Much concern
Director networks	Exchanges of resources	For socialization
Emphasis of directors' attributes	Organizational	Personal and social

Significance of Resources

The proposed model in this article emphasizes two important elements: resources and networks. Organizations cannot survive without the availability of appropriate resources. The strategies by which organizations seek resources from various sources have become a major area of organizational research (Mizruchi & Stearns, 1988; Burt, 1997; Hargadon & Sutton, 1997). Resources, in this context, refer to something more than the traditional economic meaning of factors of production, which comprise land, capital and labor. They also include financial resources (e.g. cash flow, debts), physical resources (e.g. plant and equipment), human resources (e.g. workers, management team), organizational resources (e.g. corporate culture and routines), technological resources (e.g. quality, state-of-the-art skills) and intangible resources (e.g. reputation, goodwill) (Mahoney & Pandian, 1992; Khanna, Gulati & Nohria, 1998; Podolny & Baron, 1997; Gulati, 1999). These resources are imperative for sustaining competitive advantages. Resource-based theory, according to Porter (1991: 107), argues that "the origins of competitive advantage are valuable resources that firms possess". It is portrayed as a theory of strategy (Prahalad & Hamel, 1991; Powell, Koput & Smith-Doerr, 1996) and many major strategic reasoning may have been interpreted in light of a resource-based perspective (Wernerfelt, 1995). According to the theory, the uniqueness of a firm is defined by its bundle of resources which account for its success, rather than the products it offers (Wernerfelt, 1995; Porter, 1991). What makes resources valuable will be their superiority for internal use, and relative difficulty in imitating and substituting (Wernerfelt, 1984; Porter, 1991). There is therefore an implied fundamental causal relationship between resources possessed or endowed by a firm, and its activities as well as performance. A firm can only grow and diversify successively by striking a balance between exploitation of existing resources and development of new resources (Wernerfelt, 1984). That is why the resource-based view is said to contribute significantly to the studies on diversification strategy (Mahoney & Pandian, 1992) and motivation for growth (Penrose, 1959). It also presents an opportunity for possible communication and integration among various research perspectives (Mahoney & Pandian, 1992).

For the study of interlocking directorates, a special application of the resource-based view which focuses on the interdependency of organizational resources has been used quite frequently (Pfeffer & Salancik, 1978; Mizruchi & Stearns, 1988; Rowley, Behrens & Krackhardt, 2000). This resource dependency approach proposes that interlocking directorates are "one form of a more general tendency to manage the environment by appointing significant external representatives to positions in the organization" (Pfeffer & Salancik, 1978). The process is commonly known as "co-optation", which is a strategy for securing resources, exchanging information, and establishing intercorporate cooperation (Pfeffer & Salancik, 1978; Mariolis & Jones, 1982; Fligstein, 1995; Zaheer, McEvily & Perrone, 1997). Such a resource dependency view suggests that directors sit inside the boardroom to act merely as agents to facilitate exchanges of organizational resources and information. They do not necessarily have real power in making strategic decisions of their corporations and an effective co-optation strategy means that an organization should ensure that these directors do not have real decision-making power (Selznick, 1957). A resource dependency view of interlocking directorates has given rise to propositions that had been empirically tested and verified (Pfeffer & Salancik, 1978; Mariolis & Jones, 1982; Hargadon & Sutton, 1997). The performance of organizations is believed to be associated with the appointment of representatives from financial institutions as directors (Mizruchi & Stearns, 1988). Within director networks, the centrality of banks is therefore more stable than the centrality of non-banks because of the dependency on financial resources for most organizations (Mariolis & Jones, 1982; Gulati, 1999; David, Rahul & Levitas, 1998).

A pure resource dependency view of interlocking directorates has raised some concerns. The connotation of interorganizational linkages as a unique and exhaustive function of directors' interlocks is challenged by many researchers. Studies on the reconstitution of broken ties of interlocking directorates do not support the assumptions about the need to maintain the connective and directional continuity of interlock ties to facilitate formal coordination among organizations (Palmer, 1983; Powell, Koput & Smith-Doerr, 1996; Lane & Lubatkin, 1998). Zajac (1988: 428) observes that "it is not obvious that board members with two or more directorships actually function as interorganizational linkages". Ornstein (1984) reported that at least half the interlocking directorates from 1946 to 1977 in Canada reflected class solidarity. Interorganizational resource dependency seems to provide only a partial solution for the comprehension of the complexity of interlocking directorates.

Directors' Resource Endowment

This article proposes to use directors' resource endowment to extend as well as improve the arguments of the resource dependency theory of interlocking directorates. The resource dependency view suggests that directors are invited to sit inside the boardroom of an organization because they represent external organizations which possess valuable resources that can make significant contributions to the performance of the organization. For the interorganizational coordination to be effective, these directors must have notable influences on the allocation of resources of the organizations that are in possession of these resources (Burt, 1997; Walker, Kogut & Shan, 1997; Gulati & Garguilo, 1999). From a resource-based perspective, these organizational resources as represented by directors can be expressed in terms of organizational resource endowment possessed by these directors. It means that these directors do not actually or necessarily *own* these resources but they may have a certain degree of discretion to control or influence the use of these resources by virtue of their management position. According to the resource dependency theory, the *organizational resource endowment* may be the most important consideration for the selection and appointment of directors (Pfeffer & Salancik, 1978).

Building upon and extending the resource dependency view of interlocking directorates, this article argues that the contributions of directors to a corporation are not necessarily attributable solely to their organizational resource endowment but may in many cases be associated with the personal attributes of these directors in addition to their shareholdings (Fligstein, 1995; Westphal, 1999). The professional and business expertise, social status and political influence of directors as individuals instead of organizational representatives can have significant benefit to an organization. These attributes may very often contribute a lot to the quality of decisions made by the board of directors. In addition, their positions in the corporate elites' interpersonal networks also contribute toward their influence over other members in the networks. This type of power and influence can add value to the resources endowed with the individuals. Following the line of argument of a resource-based view, the personal attributes of directors, which may be valuable to an organization, can be expressed in terms of their *personal resource endowment*. This type of endowment is specific to the individual directors and is not transferable. This additional dimension will supplement the resource dependency view by proposing that the consideration of the appointment of directors also relies on their personal resource endowment in addition to their organizational resource endowment. The directors can contribute toward the achievement of objectives of an organization not merely by virtue of the resources of corporations they represent, but also their personal resources such as skills, knowledge or social status.

Furthermore, it is posited that valuable resources are endowed by organizations as well as individuals and are intertwined in complex economic and social networks (cf.: Rowley, Behrens & Krackhardt, 2000). It will be necessary to assess in the first place what resources, organizational or personal, are actually required by a corporation. This resource specificity requirement enables the organization to evaluate the need of and thus search for directors with relevant resource endowment. An appropriate selection of directors to the boardroom with particular reference to their resource endowment can therefore ensure that the organization can have a greater likelihood of accessing to and utilizing these valuable resources. A board of directors can then be used strategically to achieve the objectives of a corporation by placing itself appropriately within the networks of interlocking directorates (Fligstein, 1995; Bian, 1997). Network analysis of directors' resource endowment therefore offers valuable insights for a more thorough understanding of how and why directors interlock.

Significance of Networks

Networks are commonly perceived as a coordination process among individuals in addition to markets and hierarchies (Powell, 1990). The essence of the network theory is that the behavior and performance of a single firm could be understood only in terms of its relational setting (Benassi, 1995; Dyer, 1996; Dyer & Noboeka, 2000). Individual action is defined as being generated within a knitted set of relational opportunities and constraints, rather than as being attached to individual attributes. The theory is used to describe the structure, process and governance mechanism of the exchanges which occurs in networks. Network analysis focuses on the interdependence of actors and how their positions in networks influence their opportunities, constraints and behavior (Wasserman & Galaskiewicz, 1994; Gulati, 1999). The structure of the network and the actor's position in the network, which determines its action and behavior, has become the focus of many researches (Mizruchi, 1984; Scott & Griff, 1984; Dyer, 1996).

Organizations are believed to link to each other in the form of corporate networks through interlocking directorates. Within the networks, organizations are linked in two major ways: direct and indirect interlocking (Burt, 1980; Daily, 1996). Direct interlocking occurs when full-time senior executives or executive directors of a corporation act as directors of external organizations. Indirect interlocking refers to the situation when the common directors of two interlocking corporations are not full-time executives of both organizations (Burt, 1980). Organizational networks of interlocking directorates are traditionally perceived as a unitary type of networks. The main focus of studies is either the dyadic relationship between organizations or the structure of the interorganizational networks. Personal attributes or power, and thus person-related contributions of directors, rather than being representatives of corporations, are seldom included in the studies. This undersocialized approach to the study of interlocking directorates fails to take into account the influence of the corporate elites' networks.

Dual Network Model

The assertion of a single corporate network in a certain society may only be valid under a very broad generalization and assumption (Mizruchi, 1982). The complexity of interorganizational networks in America or any other economies is far beyond the limits of the explanatory power of the single corporate network assumption (Daily, 1996; Dyer & Noboeka, 2000). However, there is no intention whatsoever to say here that a single network approach is theoretically invalid. To do that requires extensive empirical studies which are yet to be carried out. This article proposes to use two networks rather than a single network approach to the study of interlocking directorates based on the justification that multiple networks can have more explanatory power and propositions. Thus a dual network approach is more convincing than a single network approach.

It is argued that there are in fact two, not one, major categories of networks that need to be considered: interorganizational networks and corporate elites' interpersonal networks. Each category of networks comprises many different types of smaller networks. There are interorganizational networks among banks, industry-specific or not-for-profit organizations (Gulati, 1998). At the same time there are specialized interpersonal networks for businessmen, professionals or directors of larger corporations (Walker, Kogut & Shan, 1997; Zaheer, McEvily & Perrone, 1997; Gulati & Singh, 1998). This approach stipulates that organizations are not directly tied to each other but are linked through interlocking directorates to form various types of interorganizational networks. At the same time these directors, being corporate elite, form different types of interpersonal networks among themselves. These networks link together groups of corporate elite who are described by Useem (1984) as being the "inner circle". Both interorganizational networks and corporate elites' interpersonal networks are parameters that need to be looked into.

PROPOSITIONS

We use a network and resource endowment approach to the study of interlocking directorates. Propositions are made with reference to three aspects. First, the most fundamental proposition is the assertion that corporations appoint directors based on their resource endowment that may be of value to the corporations. Second, the interorganizational linkages are analyzed by using international economic perspectives. The concept of comparative advantage is adopted and organizational resource endowment is used as the determinant of the pattern and direction of interlocking. The effect of competition on interlocking organizations is also studied to highlight the significance of resource endowment. Finally, the correlation between interpersonal networks and interorganizational networks is investigated by concentrating on the centrality of, as well as the level of competition between these networks.

Fundamental Proposition

Attempts have been made in this article to incorporate a resource endowment view into the network theory of interorganizational and interpersonal linkages and thus facilitate the analysis of the origin and dynamics of interlocking directorates. The use of directors' resource endowment within the interorganizational networks and corporate elites' interpersonal networks provides a framework for the analysis (Zaheer, McEvily & Perrone, 1997). Corporations will appoint inbound directors with resource endowment that is relatively deficient in these corporations. Contrary to a resource dependency view, the concerned resource endowment of the directors will include personal resources in addition to organizational resources. These resources should be perceived by corporations to be able to add value to the competitive advantages of the corporations or to the advantages of their senior managers or executive directors personally. This provides the basis for the first and most fundamental proposition of the dual network model of interlocking directorates.

Proposition 1: *Inbound directors of a corporation will be likely in possession of at least one resource that is relatively less endowed by the corporation or its senior executives.*

Interorganizational Linkages

The dyadic relationship between organizations in interorganizational networks are analyzed by adopting an international economic approach (Walker, Kogut & Shan, 1997). There are certain similarities between a country and a corporation in terms of their interactions with other countries and corporations respectively. Theories and models of international trade have helped a lot in understanding the dyadic trading relationship between two nations. An attempt is made here to adopt an international economic approach for the comprehension of the interaction of resource endowment and interorganizational networks. This will make possible the construction of empirically testable propositions which may be the subject of possible further research. Using an analogy between a country and a corporation, as well as international trade and interlocking directorates, it is observed that there are certain notable similarities between the imports and exports of a country and inbound and outbound directors of a corporation (although the latter is slightly more complicated by the intertwining of personal and organizational resource endowment). According to international economics, factor endowment determines the type of imports and exports of a country. The Heckscher-Ohlin theorem of trade states that countries will export those goods whose production is relatively intensive in the factors which they are well endowed (Ohlin, 1933). Putting into the context of interlocking directorates, organizations will "export" those outbound directors who represent the resources that are relatively better endowed by the organizations. These resources are not solely organizational but in many cases personal. This gives rise to the second proposition.

Proposition 2: The demand for outbound directors of a corporation by other interlocking corporations is positively associated with the relative abundance of organizational resources endowed with the primary corporation as well as personal resources of its management teams as compared with that of the other interlocking corporations.

Centrality

A larger number of outbound directors with more number of directorship in external organizations will mean that the primary organization concerned has a relatively central position in the interorganizational network (Pennings, 1980; Gulati, 1998). Proposition 2 suggests that with more resource endowment, more outbound directors are likely to be demanded by other corporations. The density and centrality of a network is thus directly associated with the degree of resource asymmetry within the network. Hopkins (1964) reported that centrality could be regarded as a strong predictor of influence and leadership. Directors endowed with abundant organizational or personal resources are likely to be more influential than others (Gulati, 1999; Dyer & Noboeka, 2000).

Proposition 3: An organization will have a greater likelihood to achieve a higher level of centrality in the interlocking directorates networks if it has a relatively higher level of resources.

The resources concerned include both organizational and personal. This proposition suggests that banks and insurance companies with more financial resource endowment are more likely to have a higher level of centrality in the interlocking directorate networks. This is in line with the empirical studies performed by Mizruchi (1982), and Scott and Griff (1984).

Interpersonal Networks

Corporate directors are described as corporate elites and are in favor of class-wide benefits which involve "considerations that lead to company decisions beneficial to all large companies, even when there is no discernible, direct gain for the individual firm", in addition to business decisions (Useem, 1984). A corporation cannot operate entirely on its own. In selecting inbound directors, the persons' standing within the broader corporate community is increasingly a factor of concern (Useem, 1984; Belliveau, O'Reilly & James, 1996; Gulati & Singh, 1998). Since organizational resource endowment is an important attribute of corporate elites, senior managers and executive directors of corporations with more organizational resource endowment will be relatively more in demand to become outbound directors (Bian, 1997). Accordingly their social status within the corporate elites' networks will very likely be enhanced. They will therefore more likely have a higher level of centrality in the elites' networks.

Proposition 4: A corporation with a relatively high level of centrality in its interorganizational network due to more abundant organizational resource endowment will have a greater likelihood of having outbound directors with a relatively high level of centrality in their interpersonal networks.

Competing Organizations

Organizations tend to maintain its autonomy in the same way as a country striving for national independence. Those organizations with relatively more resource endowment will be more eager to protect their interests than those with less resource endowment. This explains why in certain cases supposedly competing corporations are willing to cooperate in industries such as the tobacco industry to protect their common interests. The dual networks model however argues that, unless there are statutory provisions or restrictions, corporations will have interlocking directorates irrespective of whether they are competitors or not. This is supported by Galaskiewicz and his colleagues (1985) who observe that there is no significant interlocking among competing firms based on the locale of sales. Firms interlock because of the need to obtain comparative advantages through the coordination of inbound and outbound directorship. This leads to the fifth proposition:

Proposition 5: Other than the consideration of resource endowment and legal restrictions, directly competing corporations will have no more and no less likelihood to interlock through their directors as compared to non-competing corporations.

IMPLICATIONS AND CONCLUSION

The implications of the dual network model are presented in two aspects: implications on further studies and impacts on strategic management. Implications for further studies will be discussed with reference to the ability to integrate existing theories of interorganizational coordination and intraclass cooperation. Development of theories and researches arising from the proposed model will also be presented. The dual network model provides a framework for strategic management of boards of directors. The analysis of resource endowment is important and consequential because only by understanding the internal strength and weakness of an organization can strategies be formulated meaningfully. The model proposes that a board of directors can be regarded as a strategic device of a corporation to influence and obtain resources through the business and interpersonal networks of directors. The choice of networks is therefore critical for the interlocking to be effective. The selection of inbound directors and external corporations for outbound directors can be used to achieve the strategic goals of the organizations.

Implications for Further Studies

The dual network model proposed in this article may serve to reconcile a resource dependency view and a class cohesion perspective of interlocking directorates. Directors' resource endowment, both organizational and personal, is used in the dual network model as a factor to rationalize why directors can be used as a means to facilitate interorganizational linkages. Interorganizational networks and corporate elites' interpersonal networks are intertwined in a complex way with the former accounting for interorganizational coordination and the latter explaining the class rationality of corporate elites (Walker, Kogut & Shan, 1997; Rowley, Behrens & Krackhardt, 2000). This paves a way for integrating the two common approaches to the study of interlocking directorates. As a start, this article highlights one major factor or medium, directors' resource endowment, as a common thread for understanding how the interorganizational networks and corporate elites' interpersonal networks interact with each other. The integration process can be further enhanced and intensified by analyzing the significance of the various types of resources endowed.

It is proposed that a dual network approach taking into consideration of directors' resource endowment can convincingly explain the phenomenon of interlocking directorates. The approach thus refutes the idea of a single network of directors' interlocking as a medium for either interorganizational linkages or intraclass cooperation. This theoretical idea can be more fine-tuned and extended to other levels of organizations, such as internal informal groups, supplier-customer relationship etc. A resource endowment view is used in this article to elucidate the causes and motivation of members to participate in networks. Attempts have been made by some scholars to include resource-based theory as a fifth branch of organizational economic theory, along with agency theory, transaction cost economics, property rights and evolutionary economics (Mahoney & Pandian, 1992; Belliveau, O'Reilly & James, 1996; Doz, 1996; Dyer & Noboeka, 2000). For the study of interlocking directorates, resources-based theory has shown its explanatory power (Gulati & Singh, 1998). It may be time for an overall evaluation of the theory with a view to strengthening its theoretical stance and recognition in management literature.

Several empirically testable propositions have been proposed in this article. These propositions reflect the principal arguments and deduction of the dual network model of interlocking directorates. Research may be designed and formatted to verify these propositions and it is hoped that other studies may also be carried out. While the structure of interorganizational networks have been studied quite extensively (Pennings, 1980; Useem, 1984; Powell, Koput & Smith-Doerr, 1996), corporate elites' interpersonal networks are still awaiting for exploration. Network analysis may be used for the purpose of understanding the pattern and content of the interaction that may take place among corporate elites as social units (Nelson, 1989; Stuart, 1998). This will facilitate the comprehension of the scope, dimension, extent of influence of these networks. The importance of individual resources, both organizational and personal, to the consideration of appointing inbound directors to organizations may be another area for further study. A factor analysis of specific resources endowed by directors, if carefully planned and structured will give some insight into the extent of influence of the resources concerned.

Strategic Management of Boards of Directors

The dual network model proposed in this article suggests that the resource endowment of an organization and its senior executives should be carefully and extensively analyzed. This should be done with special reference to the interorganizational networks in which the organization embeds and corporate elites' interpersonal networks that may affect the senior executives of the organization

(Belliveau, O'Reilly & James, 1996; Bian, 1997; Stuart, 1998). With a thorough understanding of the level of its resource endowment, an organization can then make use of the competitive advantage which arise from such endowment. Surplus or deficiency in resources may to some extent be utilized, balanced or compensated through participating in dual networks of interorganizational linkages as well as corporate elites ties. Strategic analysis can help define which networks the organization should participate. An appropriate selection of networks and directors are therefore an important and challenging task for the organization to strategically manage its environment (Gulati & Singh, 1998).

Strategic Use of Boards of Directors

A board of directors can be a powerful tool in the strategic management process. Hung (1998) identified six roles of board of directors: link, coordinate, control, strategise, maintain and support. These roles serve to assist the organizations to achieve their corporate objectives. Directors' resource endowment will be imperative for their governing boards to fulfill their roles effectively (Burt, 1997; Stuart, 1998; Gulati & Garguilo, 1999). With an appropriate mix of directors, an organization can maximize the utilization of the networks it embeds or intends to penetrate. Board composition can be used as a device to enhance competitive advantages through acquiring comparative advantages of resource endowment by interlocking directorates. A board of director is actually a low-cost reservoir of resources and also channels for the corporation to gain access to relevant organizational networks and senior executives of the organization to reach appropriate corporate elites' networks.

Strategic Use of Networks

The dual network model posits that both interorganizational and corporate elites networks are channels for organizations to acquire valuable resources through interlocking directorates. The choice of networks for an organization should reflect its demand for resources. Appropriate interorganizational networks can facilitate exchange of tangible resources such as finance, raw material, supplies and equipment, and intangible resources such as technology and skills (Uzzi, 1997; Gulati & Singh, 1998; Gulati, 1999). Relevant corporate elites' networks can help the organization build up its reputation, fame as well as legitimacy. According to the proposed model, appropriate choices and uses of the two important networks of interlocking directorates can improve chances of organizational performance and thus its survival.

Strategic Use of Inbound Directors: Interlocked by Whom

A resource dependency view suggests that inbound directors can be used as a means to obtain valuable organizational resources and co-opt potential threats of external organizations (Pfeffer & Salancik, 1978; Doz, 1996; Uzzi, 1997). This article extends the meaning of the resources to include personal reputation and expertise of directors. Through inbound directors, not only can an organization make use of the resource endowment of these directors, but it can also gain access to the corporate elite networks which these directors belong. The opportunity of obtaining the resources and reaching networks of inbound directors depends on how an organization can strategically manage these directors. Board meeting take place only a few times each year and interaction between senior executives of an organization and its inbound directors is occasional. Measures should be taken to ensure these board meetings will be held more frequently and more fruitful discussion may be made by the provision of more relevant information by the management of the organization (Daily, 1996; Belliveau, O'Reilly & James, 1996; Dyer & Noboeka, 2000). The use of committees such as management committees, audit committees or finance committees can maximize the utilization of inbound directors by involving them more in the decision-making process as well as socializing them (Dyer, 1996; Walker, Kogut & Shan, 1997). These inbound directors should preferably be invited to participate in the social activities of the senior executives of the organization to foster more intimate informal linkages.

Strategic Use of Outbound Directors: Whom to Interlock

Resource endowment may serve to explain why corporations appoint relevant inbound directors in order to obtain valuable resources endowed by these directors. It can also account for the motivation of organizations and their senior managers to become directors of other organizations (Bian, 1997). Outbound directors may serve a number of purposes in favor of their primary corporations. According to a resource endowment perspective, these outbound directors may serve the objectives of protecting, sustaining and enhancing their organizational resource endowment by controlling the interlocking corporations, and at the same time consolidating their personal resource endowment within the corporate elite networks by being the director of a sufficient number of corporations. More specifically, it can be used as a means to control or monitor the behavior of external companies by influencing the decisions made in the boardroom of these organizations (Daily, 1996; Burt, 1997). Second, outbound directors can serve the purpose of exchanging information among organizations. Technologies, skills and expertise can be solicited from interlocking corporations through outbound directors (Uzzi, 1997; Gulati & Singh, 1998). Third, these directors can assist in upholding the interests of their primary organizations. This accounts for the phenomenon that representatives of financial institutions very often take up some seats in the boardrooms of corporations which they have granted substantial amount of loans.

Concluding Comments

This article contributes to theories and researches on interlocking directorates by providing a framework for studying the influence of directors' resource endowment on interorganizational networks and corporate elites' interpersonal networks. Traditional studies on interlocking directorates focus on the structure of either the interorganizational linkages through directors' interlocks or the phenomenon of class-wide rationality through cooperation among corporate elites (Burt, 1997; Walker, Kogut & Shan, 1997; Gulati, 1999). The organizational networks and corporate elites' interpersonal networks are considered incompatible in terms of theory development and empirical research. The proposed dual networks model moves beyond this type of traditional analysis and integrates the influence of these two major types of networks to account for interlocking directorates.

Strategic management of board of directors is also suggested. The need for strategic analysis of the resource endowment of the incumbent organization is a prerequisite condition for a strategic use of boards. A careful selection of both organizational and corporate elites' interpersonal networks may pave the way for an appropriate choice of inbound directors. Based on the model, board effectiveness should be measured by the extent the governing board has contributed toward the response of the organization in meeting the challenge of the environment. An appropriate board composition can provide considerable contributions to the performance of the organization.

REFERENCES

Aram, J. D. & Cowen, S. C. (1986). The directors' role in planning: what information do they need? *Long Range Planning*, 19 (3): 20–26.

Baysinger, B. & Hoskisson, R. E. (1990). The composition of boards of directors and strategic control: effects on corporate strategy. *Academy of Management Review*, 15: 72–87.

Belliveau, M. A., Charles, A. O'Reilly, Ill. & James, B. W. (1996). Social capital at the top: effects of social similarity and status on CEO compensation. *Academy of Management Journal*, 39: 1568–1593.

Benassi, M. (1995). Governance factors in a network process approach. *Scandinavian Journal of Management*, 11: 269–281.

Bian, Y. (1997). Bringing strong ties back in: indirect ties, network bridges, and job searches in China. *American Sociological Review*, 62: 366–385.

Burt, R. S. (1980). Cooptive corporate actor networks: a reconsideration of interlocking directorates involving American manufacturing. *Administrative Science Quarterly*, 25: 557–582.

_______. (1997). The contingent value of social capital. *Administrative Science Quarterly*, 42: 339–365.

Daily, C. M. (1996). Governance patterns in bankruptcy reorganizations. *Strategic Management Journal*, 17: 355–375.

Daily, C. M. & Dalton, D. R. (1993). Board of directors leadership and structure: control and performance implications. *Entrepreneurship: Theory and Practice*, 17 (3): 65–82.

_______. (1994). Corporate governance and the bankrupt firm: an empirical assessment. *Strategic Management Journal*, 15: 643–654.

David, P., Rahul, K. & Levitas, E. (1998). The effect of institutional investors on the level and mix of CEO compensation. *Academy of Management Journal*, 41: 200–208.

Demb, A. & Neubauer, F. F. (1992). *The corporate board: confronting the paradoxes.* New York: Oxford University Press.

Doz, Yves. (1996). The evolution of cooperation in strategic alliances: initial conditions or learning processes? *Strategic Management Journal*, 17: 55–83.

Dyer, J. H. & Noboeka, K. (2000). Creating and managing a high performance knowledgesharing network: the Toyota case. *Strategic Management Journal*, 21: 345–368.

Dyer, Jeff H. (1996). Specialized supplier networks as a source of competitive advantage: evidence from the auto industry. *Strategic Management Journal*, 12: 271–291.

Fligstein, Neil. (1995). Networks of power or the finance conception of control? Comment on Palmer, Barber, Zhou, and Soysal. *American Sociological Review*, 60: 500–503.

Galaskiewicz, J., Wasserman, S., Rauschenbach, B., Bielefeld, W. & Mullaney, P. (1985). The influence of corporate power, social status, and market position on corporate in a regional network. *Social Forces*, 64 (2): 401–431.

Goodstein, J. & Boeker, W. (1991). Turbulence at the top: a new perspective on governance structure changes and strategic change. *Academy of Management Journal*, 34: 306–330.

Gulati, R. (1998). Alliances and networks. *Strategic Management Journal*, Special Issue 19 (4): 293–317.

_______. (1999). Network location and learning: the influence of network resources and firm capabilities on alliance formation. *Strategic Management Journal*, 20: 397–420.

Gulati, R. & Singh, H. (1998). The architecture of cooperation: managing coordination uncertainty and interdependence in strategic alliances, *Administrative Science Quarterly*, 43: 781–814.

Gulati, R. & Garguilo, M. (1999). Where do networks come from? *American Journal of Sociology*, 104: 1439–1493.

Hargadon, A. & Sutton, R. I. (1997). Technology brokering and innovation in a product development firm. *Administrative Science Quarterly*, 42: 716–749.

Hill, C. W. L. & Snell, S. A. (1988). External control, corporate strategy, and firm performance in research intensive industries. *Strategic Management Journal*, 9: 577–590.

Hill, S. (1995). The social organization of boards of directors. *British Journal of Sociology*, 46 (2): 245–278.

Hopkins, T. K. (1964). *The exercise of influence in small groups.* Totawa, NJ: Bedminister Press.

Hung, H. (1998). A typology of the theories of the roles of governing boards. *Corporate Governance: An International Review*, 6 (2): 101–111.

Johnson, R. A., Hoskisson, R. E. & Hitt, M. A. (1993). Board of directors' involvement in restructuring: the effects of board versus managerial controls and characteristics. *Strategic Management Journal*, 14: 33–50.

Johnson, R. A., Hoskisson, R. E. & Moesel, D. D. (1994). Corporate divestiture intensity in restructuring firms: effects of governance, strategy and performance. *Academy of Management Journal*, 37: 1207–1251.

Kacmar, Michelle, K. & Matthew Valle. (1997). Dimensionality of the measurement of ingratiatory behaviors in organizational settings. *Educational and Psychological Measurement*, 57: 314–328.

Kesner, I. F. (1988). Directors characteristics and committeeship: an investigation of type, occupation, tenure and gender. *Academy of Management Journal*, 30: 66–84.

Khanna, T., Gulati, R. & Nohria, N. (1998). The dynamics of learning alliances: competition, cooperation, and relative scope. *Strategic Management Journal*, 19: 193–210.

Lane, R J. & Lubatkin, M. (1998). Relative absorptive capacity and interorganizational learning. *Strategic Management Journal*, 19: 461–477.

Mace, M. L. (1971). *Directors: myths and reality.* Cambridge, Mass.: Harvard University Press.

Mahoney, J. T. & Pandian, J. R. (1992). The resource-based view within the conversation of strategic management. *Strategic Management Journal*, 13: 363–380.

Mallette, P. & Fowler, K. L. (1992). Effects of board composition and stock ownership of the adoption of "poison pills". *Academy of Management Journal*, 35: 1010–1035.

Mariolis, P. & Jones, M. H. (1982). Centrality in corporate interlock networks: reliability and stability. *Administrative Science Quarterly*, 27: 571–585.

Mizruchi, M. (1982). *The American corporate network: 1904–1974.* Beverly Hills: Sage Publications.

Mizruchi, M. S. & Stearns, L. B. (1988). A longitudinal study of the formation of interlocking directorates. *Administrative Science Quarterly*, 33: 194–210.

Mizruchi, M. S. & Bunting, D. (1981). Influence in corporate networks: an examination of four measures. *Administrative Science Quarterly*, 26: 475–489.

Nelson, R. E. (1989). The strength of strong ties: social networks and intergroup conflict in organisations. *Organization Studies*, 10 (2): 207–224.

O'Neal, D. & Thomas, H. (1995). Directors networks/director selection: the board's strategic role. *European Management Journal*, 13 (1): 79–90.

Ohlin, B. (1933). *Interregional and international trade.* Cambridge, Mass.: Harvard University Press.

Ornstein, M. (1984). Interlocking directorates in Canada: intercorporate or class alliance. *Administrative Science Quarterly*, 29: 210–231.

Palmer, D. (1983). Broken ties: interlocking directorates and intercorporate coordination. *Administrative Science Quarterly*, 28: 40–55.

Pearce II, J. A. & Zahra, S. A. (1992). Board composition from a strategic contingency perspective. *Journal of Management Studies*, 29: 411–438.

Pennings, J. M. (1980). *Interlocking Directorates.* San Francisco: Jossey-Bass.

Penrose, E. T. (1959). *The theory of the growth of the firm.* New York: John Wiley.

Perrow, C. (1986). *Complex organizations.* New York: Random House.

Pfeffer, J. (1981). *Power in organizations.* Marshfield, MA.: Pitman.

Pfeffer, J. & Salancik, G. R. (1978). *The external control of organizations: a resource-dependency perspective.* New York: Harper & Row.

Podolny, J. M. & Baron, J. N. (1997). Resources and relationships: social networks and mobility in the workplace. *American Sociological Review*, 62: 673–693.

Porter, M. (1991). Toward a dynamic theory of strategy. *Strategic Management Journal*, 12: 95–117.

Powell, W. (1990). Neither market nor hierarchy: networks form of organizations. *Research in Organizational Behavior*, 12: 295–336.

Powell, W. W., Koput, K. W. & Smith-Doerr, L. (1996). Interorganizational collaboration and the locus of innovation: networks of learning in biotechnology. *Administrative Science Quarterly*, 41: 116–145.

Rowley, T. J. (1997). Moving beyond dyadic ties: a network theory of stakeholder influences. *Academy of Management Review*, 22 (4): 887–910.

Rowley, T., Behrens, D. & Krackhardt, D. (2000). Redundant governance structures: an analysis of structural and relational embeddedness in the steel and semiconductor industries. *Strategic Management Journal*, 21: 369–386.

Rue, L. W. & Holland, P. G. (1989). *Strategic management: concepts and experiences.* 2nd edition. Singapore: McGraw-Hill; Sage: Beverly Hills.

Scott, J. & Griff, C. (1984). *Directors of industry: the British corporate networks 1904–76*. Cambridge: Polity Press.

Selznick, P. (1949). *TVA and the grass roots*. Los Angeles: University of California Press.

Singh, H. & Harianto, F. (1989). Management-board relationships, takeover risk, and the adoption of golden parachutes. *Academy of Management Journal*, 32: 7–24.

Stuart, T. E. (1998). Network positions and propensities to collaborate: an investigation of strategic alliance formation in a hightechnology industry. *Administrative Science Quarterly*, 43: 668–698.

Tricker, R. I. (1994). *International corporate governance: text, readings and cases*. Singapore: Prentice-Hall.

Useem, M. (1984). *The inner circle.* New York: Oxford University Press.

Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly*, 42: 35–67.

Walker, G., Kogut, B. & Shan, W. (1997). Social capital, structural holes and the formation of an industry network. *Organization Science*, 8: 109–125.

Wasserman, S. & Galaskiewicz, J. (1994). *Advances in social network analysis: research in the social and behavioral sciences.* Sage, CA: Thousand Oaks.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5: 171–180.

Wernerfelt, B. (1995). The resource-based view of the firm: ten years after. *Strategic Management Journal*, 16: 171–174.

Westphal, J. D. (1998). Board games: how CEOs adapt to increases in structural board independence from management. *Administrative Science Quarterly*, 43: 511–537.

Westphal, J. D. (1999). Collaboration in the boardroom: the consequences of social ties in the CEO/board relationship. *Academy of Management Journal*, 42: 7–24.

Williamson, O. (1985). *Economic institutions of capitalism.* New York: Free Press.

Zaheer, Akbar, William McEvily & Perrone, V. (1997). Does trust matter? Exploring the effects of interorganizational and interpersonal trust on performance. *Organization Science*, 9: 141–159.

Zahra, S. A. & Pearce, J. A. (1989). Boards of directors and corporate financial performance: A review and integrative model. *Journal of Management*, 15: 291–344.

Zajac, E. J. (1988). Interlocking directorates as an interorganizational strategy: a test of critical assumptions. *Academy of Management Journal*, 31: 428–438.