



Does network board capital matter? A study of innovative performance in strategic SME networks

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ABSTRACT

This article examines the effects of network board capital (i.e., human capital and relational capital) on total, radical and incremental network innovative performance. Results from a five-year longitudinal study of network boards in 53 strategic networks suggest that a network board's diversity, education level, and interlocking directorates with other such networks affect network innovative performance. The degree of board diversity and interlocking directorates primarily influence incremental innovation, whereas education level influences radical innovation. The study finds that a network board's diversity of expertise and education level are important for improving all components of innovative performance (total, radical and incremental) in smaller networks. Managerial implications of these findings are discussed.

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1. Introduction

Today's business environment is challenging and competitive, and organizations require significant resources to face the challenges that such an environment poses. Therefore, small- and medium-sized enterprises (SMEs) may find themselves disadvantaged in comparison with larger, well-established corporations because of their much more limited resources and the fact that they depend on outside entities significantly more. Such a disadvantage may cause problems in the development and launch of innovations (Narula, 2004; Nooteboom, 1994). A popular recent response to such disadvantage is the participation in strategic SME networks (Chaston, 1995; Human and Provan, 2000), which are intentionally formed groups of partly independent, profit-oriented SMEs that cooperate to improve innovative performance both through multilateral, intranetwork technology and through know-how exchange and the development of new products or services (Human and Provan, 1997; Wincent, 2008). Although in general SMEs may be disadvantaged in terms of their ability to innovate on par with larger incumbents, participation in SME networks is believed to significantly improve SMEs' innovative positions. In fact, even for incumbent firms, links with other organizations and networks of collaborating organizations are known to affect the ability to develop and commercialize new products on the basis of novel forms of innovation (Tidd,

1995). For SMEs, then, such interorganizational links are of utmost importance: SME networks may facilitate participants' innovation, thus helping them stand out and outperform their competitors.

Many European governmental and private institutions and policy programs now willingly support strategic SME networks (Hanna and Walsh, 2002; Rosenfeld, 1996). Characterized by often-substantial governmental involvement, SME networks pool resources and undertake joint research and development (R&D) activities to provide individual SMEs with resources that they could not afford on their own. Not least, SME networks help individual firms handle and reduce risks, costs, and knowledge requirements associated with innovation, thereby enabling them to improve their innovative performance in terms of product or process development and improvement. In addition, such networks, which may include up to 50 or 100 member firms, provide a platform for collective lobbying and legitimacy in the launch of innovative initiatives. Through joint efforts and strength in numbers, participants can manage the many problematic situations that arise in the innovative process. Overall, cooperation in SME networks enables many SMEs to overcome innovative disadvantages. Therefore, governmental agencies support SME networks (Rosenfeld, 1996).

However, the previous arguments provide a limited picture of the many challenges involved in facilitating innovation in SME networks. Human and Provan (2000) found that individual firms sometimes seek to satisfy their own interest at the expense of other member firms, which challenges future cooperation. Furthermore, issues of resource shortages and network legitimacy may lead to failure to innovate. As such, effective governance is highly necessary (Human and Provan, 1997, 2000; Rosenfeld, 1996; Sherer, 2003; Wincent, 2008). One such governance device that SME networks use is network

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boards, which include individuals who are entrusted with supervisory power to make important decisions related to the network. The role of the board officers is to support the functionality and innovative effectiveness of the network, as well as to address the shortcomings of its members. The major task of the board is to account for the individual interests of all independent members and to implement and support the most suitable innovative projects for the network, thus protecting the long-term interests of network participants.

A review of the literature acknowledges a need to better understand the effects of boards on network innovative performance and to examine the effects of network board capital in strategic SME networks. Prior research has paid scant attention to the effects of network boards, and little knowledge is available on whether and how network board capital influences meso-level (i.e., network) innovation performance. In this article, the resource-dependence perspective and insights from the group decision literature is applied to elaborate on how the human and social (relational) capital of the board—which are particularly powerful in organizational contexts characterized by resource shortages (Pfeffer and Salancik, 1978)—influence the innovative performance of strategic SME networks.

This study makes several contributions. First, the extent to which individual firms strengthen their innovative positions by participating in strategic SME networks is ambiguous (Rosenfeld, 1996). Here, the interest is to explain why certain strategic SME networks display more or less innovative performance and how properties of network boards may explain this difference. Without such knowledge, policy makers and practitioners risk wasting resources. Second, prior research on board capital often focuses on the functionality of boards in different hierarchical organizational contexts and does not address the effects on networks of independent units (see Dalton et al., 1998; Dalton et al., 1999; Deutsch, 2005). However, acknowledging that boards exist at the meso-level, the study contributes to a discussion on the use of network boards in the innovative success (i.e., improved innovative performance) of structural arrangements such as networks. This study's key contribution is the articulation of how aspects of a network board's human capital (i.e., diversity of expertise and education level) and two aspects of social capital (i.e., ties to other organizations and interlocking directorates) influence network innovative performance. The study also explores the moderation of network board capital by network size and the frequency of board meetings. The underlying logic is that smaller networks and frequent board meetings more readily translate board capital into improvements in network innovative performance. This study employs a longitudinal design and analyses that enable the modeling of such relationships. The next part of the paper starts with a general discussion of board capital and subsequently turns to hypotheses development.

2. Conceptual development and hypotheses

Because organizations depend on resources, boards are useful in that they can provide access to resources through board capital. According to the resource-dependence theory (Pfeffer, 1972; Pfeffer and Salancik, 1978), organizations, however loosely defined, depend on external sources and environmental contingencies and must engage in exchanges with their environments to obtain resources. Consistent with this perspective, boards can be useful in facilitating and supporting innovation in networks of independent companies: outside sources of knowledge, which boards help connect to, and influential network ties across organizational boundaries they promote may function as critical conduits for exchanging ideas and fostering network innovation (Galaskiewicz and Wasserman, 1989). In fact, some researchers claim that most advanced sources of innovation are created within networks (Chang, 2003). Other researchers have also suggested that the locus of innovation may be found in networks rather than in individual firms (Powell et al., 1996).

Yet, the role of boards in facilitating innovation at the network level is rarely studied. This study suggests several mechanisms through

which boards may improve innovation in networks. The general belief is that boards help accessing strategically important resources and manage external dependencies by linking the organization to the outside environment and by providing resources that increase various aspects of performance (e.g., giving advice, increasing legitimacy, lending access to information channels, helping solicit commitments or support from important outside elements) (Pfeffer and Salancik, 1978). Although a network arrangement by itself may be conceptualized as a way to improve an individual firm's power and resource access, a board may still significantly advance the innovative performance of individual firms and of the entire network. A board's potential to acquire and provide resources largely hinges on what Hillman and Dalziel (2003) call "board capital," which includes human and social (relational) capital. The idea here is that each director brings different experiences and expertise as well as links and resources to a board. The resource provision function is primarily related to strategy and service, where the former deals with the board's active involvement in strategic issues through advice and counsel to the organization (analysis of the challenges and synthesis of alternative solutions) and the latter is concerned with improving firms' reputation, establishing contacts, and providing advice to the executives (Zahra and Pearce, 1989). Johnson et al. (1996) specify that a board could significantly assist with strategy formulation and implementation as well as support executives with administrative and other managerial issues. In addition to providing legitimacy for the innovative projects and improving the quality of business operations, these advices are the key components of the resource-dependence role of boards (Boyd, 1990; Hillman and Dalziel, 2003). Importantly, though, for organizations to use board members' resource acquisition potential fully, the board's composition should match the organization's dependencies so that needed resources are obtained. Although Pfeffer and Salancik (1978, p. 163) suggest that "when an organization appoints an individual to a board, it expects the individual will come to support the organization, will concern himself with its problems, will variably present it to others, and will try to aid it," empirical research shows that the value of the board's capital varies depending on contingencies and contextual particularities. Accordingly, research suggests reasons to acknowledge contingency perspectives in studies of boards' effectiveness (Huse, 2000).

For the joint innovation initiatives that strategic SME networks undertake, the resources they must obtain outside of the network determine the dependency between the network and outside entities, including suppliers, creditors, governmental agencies, customers, and other significant players. To successfully manage dependencies, a resource-dependence perspective posits that network member firms must acquire control over either critical resources or other resources that decrease dependence on outside entities. Although participation in strategic SME networks allows individual firms access critical resources and increases their bargaining power, the role of network boards can also be instrumental in supporting and coordinating member firms' joint innovative projects and activities and in further increasing the network's importance to the members. Here, a board can assist firms with perceived resource deficiency (Pfeffer, 1991), plug a skill or resource gap, or increase the member firms' ability to create and develop innovations together. Although SMEs in general have limited resources, network boards can provide special services, information, legal or technical advice, and collective lobbying to in-network firms that cooperate in innovation.

2.1. Network board capital

2.1.1. Human capital

Human capital refers to the full range of knowledge, skills, and abilities that produce a given set of outcomes (Becker, 1983; Hitt et al., 2001), which in the network context refers to the knowledge, skills, and abilities of network board officers that are productive for and valuable to

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