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Disparate association between alliance social capital and the global pharmaceutical firm's performance

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ABSTRACT

Some literature suggests that three dimensions of social capital—such as information volume, diversity and richness—have positive association with the firm's performance. However, these constructs and their implications cannot be taken for granted because they may not produce similar results in all contextual settings. The article develops and tests associations between dimensions of social capital and organizational performance in a multidimensional network system. This study provides an analysis on 252 pharmaceutical firms. The analysis shows disparate but insightful results. First, there is a positive association between information volume and the firm's performance. Second, there is a negative association between information diversity and the firm's performance. Third, there is no significant association between information richness and the firm's performance. Therefore, different dimensions of social capital had different links with the firm's performance. The paper provides some explanation and implications of these findings.

1. Introduction

Research on inter-firm strategic alliance and organizational networks has profoundly diffused in management and organizational literature in recent decades (Anderson, Hakansson, & Johanson, 1994; Contractor & Lorange, 2002a; Gulati, 1998; Ritter, Wilkinson, & Johnston, 2004). Like other technical resources, inter-firm alliance social capital is a strategic resource of the firm that can render a unique value to the firm (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). A value rendering resource of the firm need to be rare, valuable, inimitable and non-substitutable (Barney, 2001; Wernerfelt, 1984). Alliance social capital reflects these dynamics by providing access to stock and flow of information for functional advantages and strategic opportunities recognition (Podolny, 2001). In this sense, alliance social capital is a resource that can differentiate the firm from its competitors. The difference in the resource can lead to different levels of performance of firms in an industry. Naturally, business organizations are seeking network resources to increase their social capita.

There is a fair amount of consensus that there is an increasing trend in the inter-organizational alliance formation and related research (Gulati, 1998). Some literature suggests that there is a positive association between organizational alliance social capital and organizational competence (Ritter, 1999). It implies that the firm's social capital and its performance should be positively correlated.

The debate emerges at the relational and structural levels in the organizational network system. Some of the empirical literature on alliance social capital claims that current research social network has some limitations (Koka & Prescott, 2002: 812). Some studies limit their focus to a structural dimension of social capital (Burt, 1992; Powell & Koput, 1996; Walker,

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Kogut, & Shan, 1997). Other studies limit their focus to a relational dimension of the alliance social capital (Anderson et al., 1994; Gulati, 1995; Wilkinson, 2008). Since the structural and relational dimensions constitute the firm's alliance social capital, both need to be included in an analysis (Rowley, Behrens, & Krackhardt, 2000). Because alliance social capital is a multidimensional phenomenon, the relational and structural dimensions may influence its complexity and implications in business enterprises (Ritter, 1999; Wilkinson, 2008; Young, Wiley, & Wilkinson, 2009). The multidimensional perspective suggests the antecedents to alliance social capital can lead to different outcomes (Håkansson & Snehota, 1995).

However, multidimensional alliance social capital is also limited in scope. First, the models proposed are not universal in their business implications (Kilduff & Tsai, 2003). Second, qualitative and quantitative results may interact but not reflect each other (Anderson et al., 1994). Third, empirical studies from the steel industry (Koka & Prescott, 2002) and engineering sectors capture a cross-country analysis on outsourcing from developed to developing economies (Young et al., 2009). However, this evidence may not be relevant to the emerging technologies and their contexts. Conventional industries such as the steel industry tend to have a low degree of uncertainty because their technologies are well defined. These sectors depend on primary functions more than secondary functions (Anderson et al., 1994). For instance, the steel industry or mechanical and electrical engineering functions (Ritter, 1999) are less dynamic than the biopharmaceutical industry. The latter kind is highly information intensive (Madhok, 2000). Biopharmaceutical industry needs continuous flow of knowledge from the upstream to the downstream in the value chain (Arora & Gambardella, 1994; Stuart, Ozdemir, & Ding, 2007). Related institutions govern this flow of the technology (Bartholomew, 1997; Casper & Whitley, 2004). Fourth, the alliance social capital is a complex phenomenon. On one hand, it requires diversity of partners. On the other hand, it requires interdependence between partners (Håkansson & Snehota, 1995). Therefore, the nature of complexity resulting from multiple links merits for a multidimensional alliance social capital be developed and used in the emerging knowledge intensive sector.

Some studies have used alliance social capital in international contexts (Arregle, Hitt, Sirmon, & Very, 2007; Goerzen & Beamish, 2005; Gulati, Lavie, & Singh, 2009; Leana & Pil, 2006; Lee, 2007; Oxley & Sampson, 2004; Subramaniam & Youndt, 2005; Wu, 2008). None has explored its implication for the firm's performance in sectors like the biopharmaceutical industry. More recently, Young et al. (2009) find a correlation between inter-organizational alliance and the manager's perceived functional importance. Thus, the research question seeks answers to whether the alliance social capital of the firm contributes to its performance in the biopharmaceutical industry, and if so, how does it matter from multiple relations and functions.

This article uses biopharmaceutical industry as its research context. In a theoretical context, this industry differs from others in two aspects: knowledge and institutions. In the former case, technical pressure induces inter-organizational ties (Podolny & Page, 1998; Zimmerman & Zeitz, 2002), and in the latter case, institutional pressure induces the need and opportunities for inter-organizational networks (Suchman, 1995). Firms in the biopharmaceutical industry are induced by both types of pressures (Scott, 2001). Thus, there is a theoretical rationale for using this industry to develop and test the implication of a complex alliance social capital of the firm and its actual performance.

There is also an empirical reason for using the biopharmaceutical industry for this study. Firstly, biopharmaceutical sector is a dual market structure in the alliance social capital, comprising a large number of SME (small and medium enterprises) and a small number of large pharmaceutical firms. The evidence is drawn on the large focal firm. Secondly, since most inter-firm alliances in this sector began to emerge in the early 1990s, the evidence is drawn from this relatively recent period (1994–2005). Thirdly, unlike established industries such as the steel industry and other conventional sectors that exist globally (Ghauri & Buckley, 2006; Koka & Prescott, 2002; Young et al., 2009), biopharmaceutical firms are based in North America, Western Europe, and Japan. Finally, this pharmaceutical industry follows stringent institutional rules. The manipulation of the data and information by the firm is fairly limited. Hence, the findings can provide some useful for the future implications.

The following section develops theory and hypotheses. The third section describes methods. The fourth section reports the findings. The final section provides discussion, followed by a conclusion and some implications.

2. Theory and hypotheses

I define social capital as the ''sum of resources that accrue to a firm by virtue of possessing a durable network of inter-firm relationships' (Bourdieu & Wacquant, 1992: 119). For the definition of social capital of the firm as a strategic resource (Nahapiet & Ghoshal, 1998), I review multiple streams of literatures on the alliance social capital of the firm.

2.1. Strategic alliance

Strategic alliance has many names. For instance, 'the swollen middle' (Hennart, 1993), 'strategic alliances' (e.g. Gulati, 1998), 'cooperative strategies' (Child, Faulkner, & Tallman, 2005: 15) and 'strategic technology partnering' (Hagedoorn, 1993; Teece, 1989). Following the literature (Gulati & Singh, 1998: 781), I define dyadic alliance as a voluntary collaboration between two organizations for the exchange of resources (Ring & Van de Ven, 1992). It is a direct link aimed for the flow of primary functional knowledge and technology to the organization (Anderson et al., 1994; Doz & Hamel, 1998). This dyadic social capital can be a source for the organizational competitive advantage (Nahapiet & Ghoshal, 1998). However, its scope is narrower than the network.