

Social Capital in Technology-Based Firms

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INTRODUCTION

The study of technology entrepreneurship has become an important research area. *Technology entrepreneurship* is the ability to respond to a set of technological opportunities and create new technologies (Almeida, Dokko, & Rosenkopf, 2003). Several issues related to the environmental conditions that affect the creation of new technology firms have been examined (Di Gregorio & Shane, 2003; Stuart & Sorenson, 2003) including the relationship between institutional change and entrepreneurial opportunity (Sine & David, 2003) and the role of firm size for explaining different access to external knowledge opportunities (Almeida et al., 2003).

This chapter focuses on the influence of the senior management team for fostering innovation in technology based firms. *Top management team theory* suggests that senior managers influence firm performance (Hambrick & Mason, 1984) based on their tenure (Herrmann & Datta, 2005), experience (Kor, 2003), age (Datta & Rajagopalan, 1998; Tihanyi, Ellstrand, Daily, & Dalton, 2000), and education (Jensen & Zajac, 2004). This research theme draws on the social capital literature and points to the importance of the social capital of top management for understanding the innovation processes of technology-based firms. In this chapter I adopt an approach to measuring social capital (the position generator technique) and discuss the effects of the senior management team's social capital on technology-based firms' innovation. I try to shed more light on this aspect by highlighting the link between top management team theory and the social capital literature. This is a unique approach and contributes to the

development of social capital and technology entrepreneurship theory.

BACKGROUND

To improve their innovation capacity, *technology-based firms* search constantly for new ideas and unexploited opportunities. The innovation literature argues that firms can benefit from the knowledge possessed by external actors such as users, suppliers, universities, and competitors (Arora, Fosfuri, & Gambardella, 2001; Rosenkopf & Nerkar, 2001; Shan, Walker, & Kogut, 1994; von Hippel, 1988).

This chapter adopts a social capital perspective to explore the interactions among the actors involved in the innovation process, to analyze the assets that inform those interactions such as trust, social norms, obligations, and shared communication codes. Following Lin (1999), I build on the concept of *individual social capital* defined as the product of individual investment in a network of relationships, which allows access to heterogeneous knowledge domains. Lin (1999:9) adopts a private-good view of social capital, and highlights that social capital is the 'investment in social relations by individuals through which they gain access to embedded resources to enhance expected returns of instrumental or expressive actions'. *Individual social capital* therefore, is a resource linked to social networks and group membership. More specifically, as suggested by Bourdieu (1986:p. 249) 'the volume of social capital possessed by a given agent depends on the size of the network of connections that he can effectively mobilize'. Bourdieu (1980) claims that the relationships one individual has with others

represent a specific form of capital: the social resources inherent in these relationships may be used by the individual to pursue economic ends. Nahapiet and Ghoshal (1998) identify three dimensions of social capital: the structural dimension, i.e. the social ties and connections between actors; the relational dimension, i.e. the nature and the quality of these connections (social interactions); and the cognitive dimension, i.e. the representations, interpretations, and systems that actors share and which result in durable connections.

It is argued in the literature that social capital affects firm performance by promoting firms' acquisition of external resources and knowledge. Knowledge and resource sharing can be more effective if the individuals know, trust, and understand one another. Several studies illustrate how firms can benefit from social capital. Uzzi (1997) shows that firms capitalize on social ties to obtain bank loans, Shane and Cable (2002) relate social ties to private equity, Aldrich et al. (1996) emphasize the importance of founders' social ties in the setting up of new ventures. Laursen et al. (2012a) provide evidence that geographically localized social capital influences the firm's ability to introduce new products, is complementary to the firm's investment in internal research and development (R&D), and positively moderates the effectiveness of externally acquired R&D on product innovation. They show that social capital increases firms' awareness of international business opportunities and consequently their involvement in foreign markets (Laursen, Masciarelli, & Prencipe, 2012b).

The entrepreneurship literature includes many important contributions that investigate individual investments in social relations: entrepreneurs generally consult within their own networks of relations to obtain resources and knowledge (Larson & Starr, 1993; Stuart & Sorenson, 2003). This literature strand investigates the role of social capital focusing on the benefits that the firm derives from the entrepreneur's investment in a network of relationships (Larson & Starr, 1993; Stuart & Sorenson, 2003). The present chapter

complements this literature by clarifying the contribution of the top management team's social capital to innovation in technology-based firms.

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THE ROLE OF SOCIAL CAPITAL

It is suggested that individual social capital impacts on firm innovation. The idea is that individual social capital fosters innovation by providing conduits for knowledge sharing (Nahapiet & Ghoshal, 1998; Nonaka, 1994). I would suggest that, in technology-based firms, social capital assumes a central role in the innovation process by facilitating the acquisition of external knowledge and the recognition of external opportunities (Keck, 1997; Knight et al., 1999; Pitcher & Smith, 2001). Through their social ties top managers can gain access to a set of actual and potential resources, external knowledge, and new ideas (Adler & Kwon, 2002). Social capital encourages knowledge sharing and guarantees access to expertise and to knowledge domains that otherwise would be unavailable. I suggest that higher levels of social capital allow top management access to a wider range of knowledge sources, and argue that there is a positive association between higher levels of social capital and the firm's better technological performance. Therefore, it is likely that, for technology-based firms, high levels of social capital may facilitate the definition of technological opportunities, and speed up the creation of innovation and new technologies.

The role of social capital is particularly important during the first years of a firm's life when high levels of social capital can define the interplay between technology-based ventures and established firms and institutions (i.e. competitors, clients, suppliers, universities). Social capital can provide access to heterogeneous sources of information and avoid myopic searching for new knowledge. This benefit reduces the liability of newness and can increase the firm's probability of survival.

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