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## WHEN NETWORKS MATTER: NETWORK CONTENT AND INNOVATION OUTPUT (SUMMARY)

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## SUMMARY

### WHEN NETWORKS MATTER: NETWORK CONTENT AND INNOVATION OUTPUT

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#### Principal Topic

From a network theory perspective (Granovetter 1973, 1985; Burt, 1992) it has been argued that firms are embedded in social networks, which play a critical role in individual firm performance. Existing literature has paid considerable attention to understanding the role of network relationships on firm performance in the form of innovation. A firm's innovativeness is critical to its performance (Zaheer & Bell, 2005) and may arise not only from the firm's internal characteristics, but also from its external organizational relationships. Despite the popular scholarly interest in the relationship between social networks and firm innovation, the existing literature is lacking in two important respects. First, in these studies network content has rarely been a variable (Burt, 1997; Hoang & Antoncic, 2003). In other words, network theory is mostly silent on issues regarding the network content - the characteristics of the actors and/or the qualitative nature of the relationships and the innovation outcomes of such networking interactions are still unclear. Second, of all the studies that focused on network content, very few have examined it from an inter-organizational perspective. How does inter-firm network content affect the innovation performance of individual firms? This question has been left unexplored. In this paper, we seek to explore the above issues from an inter-organizational view. We look into which types of network, and what type of relationships matter most for the firm's innovative performance, specifically in the biotechnology industry. We will address the following questions: What is the nature of knowledge shared in firm's ego networks? What are the characteristics of network members? How do these qualitative assessments of the network affect firms' performance outcome?

#### Method

We tested the above hypotheses by examining the U.S. biotechnology industry. We identified a sample of publicly-traded biotechnology firms listed in Recombinant Capital (ReCap). The panel used for the analysis includes specific variables for the period 1990-2005. Due to some missing variables as well as two-year lagged independent variables an observation number of 3349 remained in the sample with 482 firms.

#### Results and Implications

Our study contributes to the literature by arguing that network content encompasses both the quality of relationships and the characteristics of members within a network, and then empirically demonstrating the significance of key network content variables in driving a firm's innovation in the biotechnology industry. A major contribution of this study is to demonstrate the importance of the *nature* of the ties in a firm's ego network. Our study supports the view that in addition to the effects of network structure, the quality of one's relationships in a network matters in innovation output.

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