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Searching for sources and success by SMEs: Network effects in the discovery and realisation of innovations

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Our study involves an analysis of whether social and economic networks influence innovation processes, or in the words of Oerlemans, Meeus & Boekema (1998), 'Do networks matter for innovation?' This study is confined to the creation and implementation of new ideas, processes and products within and by small- and medium-sized firms. According to Dosi (1988: 1132) innovation is primarily a process built on the activation of the specific internal capabilities of firms, cumulative routines and implicit or tacit knowledge: 'one needs to have substantial in-house capacity in order to recognise, evaluate, negotiate, and finally adapt the technology potentially available from others'. The driving forces for innovation are internal employees and inputs from R&D, manufacturing or sales units, etc.). Others have stressed the mobilisation of external resources from their environment, such as direct or indirect links with knowledge institutions, suppliers, customers etc. Oerlemans, Meeus and Boekema (1998) have argued that in order to explain innovative performance both internal and external resources need to be included.

It could be the case that entrepreneurial firms suffering from strong internal resource constraints or competency gaps, may benefit from external linkages with technology partners, investors and/or service providers, acting as real complementors. Lee, Lee and Pennings (2001) argued similarly that networking with external resource holders providing complementary resources contributes to a further accumulation of internal capabilities. This research follows up their advice and seeks to answer the following question: which ties and network position matter to complement internal competences in order to be innovative? Or in other words what role do networks play to find external knowledge which can be combined with internal competences to realize new combinations?

The starting point in our study is that networks matter in the innovation processes of SMEs, since 'innovation does not exist in a vacuum (Van De Ven, 1986: 601).' The contacts a firm has could both generate advantages for further innovation and growth, and disadvantages leading to inertia and stagnation, for instance by being locked out from where the action is, having taken the wrong advice or chosen the wrong partner, or being locked into a leading firm, or a sector in decline. In the first case the existing social network or the new business contact provides opportunities furthering eventual success, in the second case, the existing network or the new business contacts turns out to have a constraining or even detrimental effect on performance. The search and use of social capital is driven by goal-specificity: it only includes those ties that help the actor in the attainment of particular goals. Most of the research so far has been deliberately or unwillingly one-sided, by for instance only looking at dynamic firms in the high-tech industries. Or selective attention has been paid to either the internal sources or the external contacts to trigger innovation. And when a conclusive study has been conducted into investigating both the effect of internal and external ties on innovation, the sample often includes large and established firms and managers (instead of entrepreneurs and smaller companies, as what we are interested in).

The central aim of this paper is to analyse the various dimensions of networks and how these different network dimensions may contribute to innovation. Although we can draw some conclusions about

particular network benefits, many issues about the most 'optimal' network contribution to innovation remain unsolved. Contingencies play an important role, as most researchers have agreed that the purpose and circumstances have a large impact on the particular role network ties can play. What do we know? The larger the uncertainty and search for the exact nature of an innovation the more important new information is. Thus, weak ties and structural holes will play a crucial beneficial role in such circumstances. These circumstances are most likely to be relevant for radical innovations and in the discovery phase (see also table 1). The opposite situation of limited uncertainty, as is true for incremental innovations and when it boils down to realizing the designed innovation, strong ties and a dense network appear to be more beneficial. In both of these cases it is not exclusively strong or weak ties, there will always be some mixture, but in these more clearcut circumstances we refer to the dominant network effect. In the other cases of the matrix, it is not entirely clear from the literature what mixture is most beneficial.

The empirical contribution of our paper contains a survey on the networking activities of SMEs to explore and exploit innovations. Our cross-industry sample included about 500 entrepreneurs and small business owners in the Netherlands who were asked by telephone about their usage of all kinds of ties to seize opportunities, obtain resources and acquire legitimacy for their new ideas, products, services and processes. The data findings were collected in Sept/Oct 2004 and have been analysed. The results from the telephone questionnaire shed a light how the network ties of the entrepreneur/small business owner, in combination with his/her internal competences, play a vital role in the discovery and realization of particular innovations. The sources for new ideas and novel products/services of small and medium-sized companies are often found in social networks.

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