Available online at www.sciencedirect.com
SCIENCE DIRECT®
ELSEVIER
Technovation 26 (2006) 955–968
technovation
www.elsevier.com/locate/technovation

Corporate governance and performance of small high-tech firms in Sweden

Lise Aaboen[a,*], Peter Lindelöf[b], Christopher von Koch[c], Hans Löfsten[d]

[a] *Department of Industrial Dynamics, Chalmers University of Technology, SE-412 96 Göteborg, Sweden*
[b] *The University of Nottingham, Business School, Wollaton Road, Nottingham NG8 1BB, UK*
[c] *School of Economics and Commercial Law, Department of Business Administration, Vasagatan 1, 405 30 Göteborg, Sweden*
[d] *Department of Technology Management and Economics, Chalmers University of Technology, SE-412 96 Göteborg, Sweden*

Abstract

The approach uses data from a sample of 183 small high-tech firms, *new technology-based firms* (*small high-tech firms*) in Sweden (54 variables under the headings of work experience, board and advice, financing, motivation—performance priorities, technological innovation and strategy). This study identifies some core areas of importance in corporate governance. Few managers in this study had a strong background and experience of finance and the preparation of business. Only 64 per cent of the managers have had previous work experience before starting the firm. The survey makes it clear that the small high-tech firms are likely to have a strong link with banking institutions. The consequence of these links is that most of the firm's capital supply is from banks, and that there are strong ownership links between banks and industry. The background of the founder does seem to have had an effect on the problem of financing and ownership issues. It is private sector organizations (banks) and families that are most frequently consulted by small high-tech firms (However, low means). It is also the private and public sector organizations, in connection with external board membership, regional development agencies and banks that are most frequently consulted. In the future, it is reasonable to search for *factor patterns* that can begin to explain and predict the direction of corporate governance in small new technology-based firms.

Keywords: Corporate governance; New technology-based firms; Resources; Financing; Technological innovation

1. Introduction

This research is about management, control and the ability to finance small growth and innovation-oriented high-tech firms (*new technology-based firms, small high-tech firms*) in Sweden. This paper will examine the relationship between corporate governance, and the process of innovation and entrepreneurship with a focus on those in the high-technology industry. *Entrepreneurial firms as new start-up businesses formed individually or by a group of founding entrepreneurs* will be defined. There are many problems that are common to new businesses, i.e. shortages of management of the production system, bureaucracy and recruitments. The small high-tech firms will be faced with the normal management and organizational problems associated with rapid growth. The ready availability of external advice and support can be of crucial importance to the small technology business in its formative years. There are many sources of advice and assistance available to small firms. Ownership issues are an essential part of this research. This research is about how the financial market works, corporate control and directing financial resources toward growth and innovation. Another factor that will determine a firm's governance structure is the level of technological innovation. Both Gatignon et al. (1989) and Hennart (1991) argue that firms that transfer technological competence between countries often establish subsidiaries. What is then of most importance when establishing subsidiaries than the transfer of "contemporary" management methods. Foreign investors then have to invest in the education of the management in such fields as marketing, accounting, finance and management methods (Child and

*Corresponding author. Tel.: +46 31 772 51 21; fax: +46 31 772 12 37.
E-mail addresses: lise.aaboen@chalmers.se (L. Aaboen), peter.lindelof@nottingham.ac.uk (P. Lindelöf), Christopher.vonKoch@handels.gu.se (C. von Koch), hans.lofsten@chalmers.se (H. Löfsten).

0166-4972/$ - see front matter © 2005 Elsevier Ltd. All rights reserved.
doi:10.1016/j.technovation.2005.07.004

Czegledy, 1996). Shleifer and Vishny (1997) show contradicting results in their research. Schleifer and Vishny argue that foreign investors often invest in less profitable firms, where the value of their control is higher.

Research about corporate governance has gained a new actuality since the mid-1990's. There is a division between *different financial systems* in the corporate governance literature. Among other classifications are those that distinguish between a system depending on the degree of cooperation to be found in financial systems, government and industry. According to this classification, there are two primary structures—*bank-oriented* and *market-oriented financial systems* (Berglöf, 1997; Rybczynski, 1984). The bank-oriented system is recognized as having strong links between bank and industry. A consequence of these strong links is that most of the firm's capital supply is from banks and that there are strong ownership links between banks and industry. Market-oriented financial systems are recognizable by the fact that large amounts of the capital supply are transferred via stock and bond markets as well as by other actors within the financial system.

The research area is multi-dimensional and several perspectives are used. The results are expected to facilitate the understanding of the *effects of management, financial issues, technological innovation and motivation on firm performance*. The research is related to the *efficient use of resources*. Small firms are assumed, directly or indirectly, to have importance in the development of economies together with the creation and development of new industries as well as their growth potential. Small independent firms have problems in developing their innovative capabilities due to costs of market and technological development and/or incorporate knowledge within the organization (Williamson, 1975; Teece, 1986). The innovating capability relates to technology and market development, where the limited resources of the small firms make it difficult to overcome internal and external restrictions for developing the innovation. Teece (1986) argues that to overcome these restrictions there is a need for complementing resources: resources for continuing R&D, export, marketing, sales support and management capabilities.

Therefore, the aim of this paper is to explore the corporate governance structure for small high-tech firms in Sweden. More specifically, this will be done to illustrate how the managerial, financial and innovative resources are related in this context. The remainder of the paper is organized as follows. Section 2 provides a brief discussion of the literature, followed by a presentation of the research questions. Section 3 presents the empirical setting of the study. Then Section 4 presents some empirical evidence, and Section 5, the conclusions of the study and implications for further research.

2. Literature framework and research questions

Kirchhoff (1994) writes that there are two factors that hinder *innovative small firms*, i.e. the lack of *motivation* and the lack of *resources. Lack of competence* and the lack of being able to attract competence affect the small firm's ability to continuously develop market and technological innovation. *Lack of funding* is one of the most discussed topics that might hinder small firms' development. This is assumed to depend on information asymmetry or opportunism. When information asymmetry and opportunism exist, they create a market failure that is assumed to affect the finance of small firms negatively (Deakins and Hussain, 1991; Binks and Ennew, 1996).

Based on the reasoning above, we have chosen to write the literature framework from a resource-based perspective. In the first section, the starting point will be a general discussion of the contents of the perspective. This discussion will then focus more specifically towards implications, made more evident by the use of this perspective, for small innovative firms. The second part of the literature framework will give extra emphasis on the lack of competence and funding by discussing the actors that influence the direction of the companies by owning, controlling and financing the companies.

2.1. Technological innovation from a resource-based perspective

Categories of resources have been identified by various researchers in recent decades. Ansoff (1965) divided resources into *physical* (inventory and monetary) and *human*. Learned et al. (1965) incorporated management and Andrews (1971) technology in the categories of resources. *Financial resources* are resources needed for starting, managing and growing (Greene and Brown, 1997). Human resources include, for example scientists, production personnel, sales force, etc., (Hofer and Schendel, 1978). *Technological resources* include scale and scope advantages, product and services and production facilities (Cooper, 1971). Greene and Brown (1997) argue that a framework of capital, human, social organizational and financial resources related to the firm's *external environment* gives the perspective a deeper meaning. Hay and Ross (1989) give similar explanations. The use of external advisors is related to the greater ability to succeed, and their time is used to develop network and external contact which affects the firm's performance (Aldrich et al., 1987; Dollinger, 1995). Dollinger ibid emphasizes that human resources are among the most important in creating the ability for small firms to perform.

2.1.1. Innovative resources

Innovative resources are required to produce *technological innovation*, but they are rarely sufficient in assuring commercial benefits from technological innovation. Successful commercial exploitation of technological innovation mainly requires access to assets that are complementary to innovative assets (Teece, 1986). Teece takes an *ex-post perspective* and, on technological innovation, asks what assets will be required to reap commercial value from