

Entering a Network: The Case of a Science-Based Start-Up Company.

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Abstract

Purpose of the paper and literature addressed

Innovation and entrepreneurship can be the lifeblood of an economy and in many countries the transfer of academic science to new business ventures in the commercial sector represents an important means of sustaining economic growth and competitive advantage. Our interest lies in technology transfer and specifically the attempts by science-based entrepreneurial (start-up) firms to establish a position in a market, in a network and to initiate relationships with customers in that network. Challenges faced by any start-up company include establishing a customer base and building a reputation as a reliable supplier. These tests are particularly acute for a new venture seeking to launch its business in high technology product areas. Not only does a target customer have to be persuaded of the problem-solving ability of an unproven supplier but those customers will likely have to get to grips with unfamiliar products. Ruokalainen (2005) suggests that customer references are vital for a high technology business. A positive first customer reference makes a significant contribution to subsequent customer acquisition because it can provide a company with credibility, enhance its reputation and reduce the perceived risk of the customer.

The problem for a start up company is obtaining the first customer reference. How can the company break into a target market, enter a network to obtain their first customer reference? One way that a firm might do this is to draw from the social capital of its employees (Ruokolainen 2005). This would involve the company examining the relationships of its employees to determine whether there were any contacts which it could utilise to enter its target market, to initiate new relationships in this network. If the company has no social capital to aid entrance how does it then proceed?

Research findings and main contribution

The paper presents preliminary findings of a longitudinal study. We examine a science-based entrepreneurial firm's business development activities, focusing in this instance on its initial attempts at network entry. In doing so we show that social capital does not necessarily facilitate entry for new business ventures.

Keywords: customer reference, social capital, network

Introduction

Innovation and entrepreneurship can be the lifeblood of an economy and in many countries the transfer of academic science to new business ventures in the commercial sector represents an important means of sustaining economic growth and competitive advantage (Murray 2004). The connection between university research and commercial enterprise has been investigated from a number of perspectives. For example Carlsson and Fridh (2002) examine factors influencing the success of various forms of technology transfer, including business start-ups. Murray (2004) looks at the contribution of academics to science-based entrepreneurial firms, establishing that the firm's credibility can be enhanced by association with a well-respected scientist and that it may gain access to distinctive networks by way of the connections, the social capital at the disposal of that scientist. Our interest lies in technology transfer and specifically the attempts by science-based entrepreneurial (start-up) firms to establish a position in a market, in a network and to initiate relationships with customers in that network.

It has been said that no business is an island (Håkansson and Snehota 1990), that in principle networks of business relationships are borderless (Holmen and Pedersen 2003) and that boundaries of networks are essentially artificial (Ford et al. 2002). This implies that all companies are an integral part of a network and should be able to interact with any other company through a direct contact or via a series of intermediate contacts. Although theoretically this may be feasible difficulties can occur when a company's network horizon is severely restricted. A new company that is trying to enter a market for the first time will certainly have a restricted network horizon i.e. the firm will have limited knowledge of and ability to initiate dealings with other parties (Dubois et al. 2003). In trying to initiate relationships with customers, a start-up firm has to persuade targets of its problem solving ability. Ruokalainen (2005) suggests that customer references are vital to this process, in that a positive first reference can contribute to subsequent customer acquisition because it enhances a firm's credibility and reduces the customer's perceived risk. The difficulty for an unknown company (especially one trying to introduce unfamiliar product technology to a market place) that has no previous customer dealings lies in obtaining its first reference. One way that a firm might go about acquiring that first reference is to draw on the social capital of its employees.

We discuss literature associated with customer references and social capital and the contribution of these to relationship initiation and market/network entry for new start-up companies. From this we go on to present preliminary findings of a longitudinal study that examines a science-based entrepreneurial firm's business development activities, focusing specifically in this paper on its initial attempts at network entry

Customer References and Start-Up Companies

Markets consist of exchange between suppliers and customers, with the marketer offering its problem solving abilities to meet the needs/problems that customers seek to address by purchasing products from companies. When making a purchase decision the customer has to deal with risk i.e. the *uncertainty* and possible *negative consequences* (Mitchell 1995) surrounding that decision. The business marketer tries to reduce the level of perceived risk by communicating its problem solving abilities to customers and might use the *backing, support* or *approval* of third parties to do this. One obvious source of backing is that of customers with which a supplier has successfully dealt. Using the testimony of (existing or former) customers to build business with other prospective customers is described as referencing. A *customer reference* is a

“supplier's relationship to its existing or former customer that can be evaluated by the said customer in terms of the supplier's product, service, management, and cooperation performance” (Salminen and Möller 2004, p.135)

A customer (existing or former) would normally provide reference information either in writing or verbally about the supplier's performance - the fact that the information is based on experience of dealing with the supplier or using their products increases the value of the customer's opinion to other potential customers (Salminen and Möller 2004). Such reference information can contribute to reducing a buying organisation's risk perception and enhancing the reputation and credibility of the supplier. Referencing is claimed to be a valuable means of persuading organisational customers and its use has been investigated

- in bidding decisions,
- as a marketing signalling device
- as leverage for start-up companies

(Ruokalainen and Igel 2004; Ruokalainen 2005; Salminen and Möller 2004)

Our interest lies in the last of these, namely the use of customer referencing by start-up companies. A new business venture is faced with the task of trying to establish a customer base and build a reputation as a reliable supplier. This is quite a considerable challenge, indeed over 40% of start-up companies are reported to have difficulties in entering a market (Huang and Brown 1999). These difficulties become more acute for high-technology ventures whose target markets might be characterised as uncertain and volatile (Beard and Easingwood 1992), containing customers who are wary of, if not sceptical about, high technology products (Moriarty and Kosnik 1989). For the start-up company, references can be critical to winning over potential customers, establishing the problem-solving ability of the venture and facilitating business growth (Ruokalainen 2005). But how does a company without a proven track record or a portfolio of customers with which it has successfully transacted generate that first customer reference? A new venture faces quite a dilemma – it needs references to build its business but it lacks customer relationships that could be the source of these. So the firm needs to establish its first customer relationship in order that it can move forward and build its position in its chosen market/network. This relationship can not be initiated with the help of references, rather the start-up company has to make use of alternative means. One resource that has been acknowledged as contributing to the development of new business ventures is the social capital to which a start-up company may have access (Eisenhardt and Schoonhoven 1996).

Social Capital, Network Access and Relationship Initiation

Initiating relationships and gaining access to a network may be achieved through social capital (Halinen and Salmi 2001). Social capital relates to the personal relationships that individuals have with others, it is "the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (Bourdieu and Wacquan 1992 p.119). Social capital can be described using 3 dimensions, namely

- structural (the quality of interactor exchanges and the architecture of network ties)
- relational (the kinds of relationships an individual has developed in terms of for example, trust and trustfulness)
- cognitive (shared norms)

(Liao and Welsch 2005)

Social capital enables cooperation between connected parties for the mutual benefit of those parties (Putnam 1995). So essentially an individual can draw on his/her network of personal ties in order to realise specific objectives and would reciprocate by accommodating the needs of parties with which he/she has connections. Social capital has attracted considerable attention in relation to new business ventures and entrepreneurship. For example de Carolis and Saporito (2006) argue that personal factors (specifically an individual's cognition) and social capital determine why some individuals exploit opportunities, whereas others do not. Liao and Welsch (2005) examine the role of social capital for budding entrepreneurs and its use in technology versus non-technology based entrepreneurship. Florin et al. (2003) explain

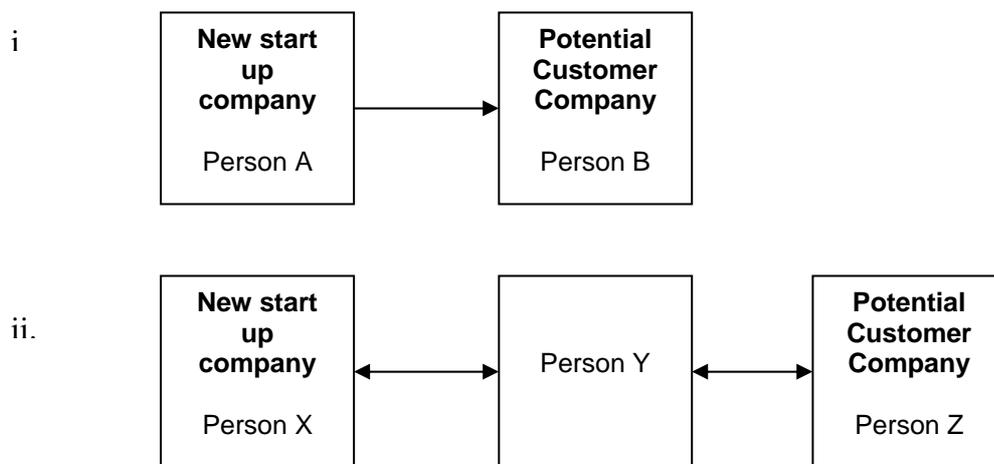
the contribution of social capital to high-growth venture ability to accumulate financial resources and to develop a durable source of competitive advantage.

Social capital can assist a new business venture in entering a network/target market, in gaining access to potential customers (Florin et al. 2003). As we have already acknowledged, start-up companies frequently have to begin from the position of being unknown in their chosen marketplace and will certainly lack a portfolio of customer relationships that can be used to facilitate business growth. In these situations, the firm has to rely on social capital, on the personal relationships of its employees to initiate contact with potential customers. This requires employees to know of customers in the firm's target market and to be able to use their network of personal relationships to initiate contact and to encourage the start of an exchange relationship. This might come about as a result of personal relationships between individuals within each company, or through an intermediary personal relationship. See Figure 1:

- in Figure 1i Person A knows Person B in the potential customer company;
- In Figure 1 ii Person X knows Person Y who also knows Person Z who is looking for a product or service and a potential customer. Person Y knows Person Z is looking for a product which Person X can supply and may bring X and Z together.

The relationship that brings customers and suppliers together may be work-based (whereby the individuals were colleagues, had done or are currently engaged in business together) or it may be more of a social nature having been established through education, club membership etc.

Figure 1: Direct and Indirect Use of Social Capital to Initiate Relationships



In some senses, the direct and indirect use of social capital to initiate relationships are akin to some of the various means by which exchange relationships start out and which are described by Holmen et al. (2005) - see Table 1. These authors describe relationship initiation which is either direct or network mediated – that which is network mediated could be achieved via the social capital at the disposal of the business venture.

Whilst network-mediated strategies might offer a new business venture opportunities for relationship initiation, some of the strategies will be unsuitable. For example, if a company is not part of a target market/network then there will not be a customer to broker relationship initiation between one of its associates and the supplier. Equally, the social capital available to a new business venture might offer limited or no access whatsoever to the firm's chosen target market/network. In such instances a start-up company has to use direct means to initiate relationships and to move towards obtaining its first customer reference.

Table 1 Methods of Relationship Initiation

Direct	Network mediated
Customer initiates first contact with focal supplier	Customer of focal supplier initiates contact between focal firm and one of its associates
Focal supplier initiates first contact with customer	Former employee of supplier company initiates contact between focal firm and their current employer/start up company
Focal company meets partner via a public tradeshow	Focal firm meets counterpart at private invitation only seminar
Contact is established via public request for tender	An indirect counterpart of the focal firm initiates contact between the focal firm and one of its other counterparts

(Adapted from Holmen et al. 2005)

Having discussed the challenges for new business ventures in entering markets and the role of customer referencing and social capital in contributing to business development, we now go on to describe the attempts of a start-up company to initiate relationships with customers in selected target markets/networks.

An Example Case of Network Entry

The description that follows centres around the setting up of a spin-off company by a UK-based academic researcher and the attempts by the business's founder to identify potential target customers and initiate relationships with some of those customers. In presenting this description we take account of the founder's network of relationships which may or may not be of use in entering selected target markets and establishing contact with potential customers in them.

The scientific researcher responsible for setting up and developing the new business venture is employed full-time as an academic in the Materials and Metallurgy department of a UK university. The researcher's work is divided between

- *new materials development* (30%). This is classed as pure research, is supported by funding bodies and has no industry involvement
- *powder metallurgy* (30%). This is based around the use of micro-scale powders for applications in the paint, tooling and components industries. Specific industries and companies are involved in the powder metallurgy research, contributing to strategy direction, providing research funding and eventually incorporating research results into their own processes
- *nano-materials* (40%). This is purely applied research, feeding directly into the start-up company (that we go on to discuss) and centres on the development of material and process technology to transform nano-powders into solid components. Whilst companies currently using micro-scale powders might eventually become users of nano-materials, its acceptance in the medium term would require radical rethinking of those companies' product and process technologies and the markets which they serve. This means that potential customers for the nano-materials are distinct from those currently using micro-scale powders on a commercial basis and who are involved in the powder metallurgy research.

Scientific and commercial contacts

The researcher draws from two principal sources to develop and maintain relationships with other academics and commercial representatives, with this network of relationships being used to identify research opportunities (pure and applied), industry applications and sources

of funding. These two sources are the World Congress on Powder Metallurgy and Particulate Materials and the Powdermatrix. The congress is a technical research conference that attracts researchers and industrial representatives involved in powder production and the shaping of powders into components as well as OEMs, who use the actual components in their equipment assemblies. The congress is sponsored by the Metal Powder Industries Federation (www.mpif.org)

Powdermatrix (www.powdermatrix.org) is a UK based network dealing with particulate engineering whose principal emphasis is in advanced ceramics, hard metals, magnetics and powder metals. The network acts as a link between industry and universities and can be used

- to find collaboration partners
- to publicise funding opportunities
- as a broker for members looking for industry or academic partners.

The principal partners in PowderMatrix include 3 British universities, CERAM (www.ceram.co.uk), the European Powder Metallurgy Association, the British Hardmetals Association, the National Physical Laboratory and the Institute of Materials, Minerals and Mining. Industrial membership stands at over 150 companies.

Clearly the academic researcher has significant scope to develop and make use of a network of relationships with fellow academics and industry representatives to pursue selected areas pure and applied research.

The development of a start-up company

From research idea to commercialisation

The academic collaborated with a visiting researcher to investigate the feasibility of producing and using fine powders. Initial test results were positive and after 12 months the academic submitted the process technology for patenting to the technology transfer company responsible for handling patenting, licensing and spin-off activities at his institution. While the technology was going through the patent process the academic was approached by a venture capitalist at an industrial conference who was interested in investing in new technology. This resulted in the setting up of a spin-off company funded and owned by the venture capitalist, the academic and the technology transfer company at the researcher's institution. Initial emphasis for the new business venture was to develop the patented process technology from a laboratory to a commercial scale. The academic effectively became the director of the new venture.

Market/network entry

Although the director for the start-up business has an extensive network of personal contacts with company representatives through industry involvement in the powder metallurgy research and in the Powdermatrix, these could not be used to develop a customer base for the new business venture. Current industry partners would have needed to make radical changes to their existing process technology and go through a steep learning curve to develop an understanding of the potential markets for the nanopowders.

Public dissemination of information about the spin-off company resulted in the director being invited to participate in UK showcasing of nanotechnology (www.ukatnanofair.com) at international nanopowder trade fairs (Nanofair in Switzerland and NanoCommerce in Chicago). Attendance at these two events and interest from companies gave the director an indication of the nature of demand and competition. Contacts for potential customers were made as a result of company representatives visiting the UK stand and specifically discussing the nanopowder technology offered by the start-up company.

In addition to these the director sought to develop further contacts, identifying potential customers via secondary data sources. Named managers within selected target companies were

- contacted via e-mail
- introduced to the material technology on offer from the new business venture

- invited to make contact with the company director to discuss potential applications for the nanopowders
- invited to obtain material samples for testing.

Of the 40 companies contacted, 12 have been provided with material samples and 2 have agreed to meet with the director. These meetings may provide scope for the development of personal relationships that could subsequently be used to initiate commercial exchange relationships. In contrast, dealings with the organisations that have used material samples provided by the spin-off company have seen little development, with the director yet to receive feedback from the companies on their use of and likely interest in the business's product technology.

Discussion and Conclusion

Innovation and entrepreneurship make a significant contribution to economic growth, with the transfer of technology from academic research to the commercial sector and the resulting spin-off companies being an important feature of entrepreneurial activity. The preliminary findings presented in this paper show that such spin-off companies are challenged in their efforts at market entry.

References are accepted as playing an important role in the development of a business marketer's customer base and in the initiation of new relationships. However, without any customers as reference sources, a new business venture has to use alternative means to initiate relationships and present itself as a credible supplier to target customers. It is argued that social capital is a resource upon which a start-up company can draw in order to build its position in its selected market. Social capital, the personal ties of individuals associated with a new business venture have been shown to provide a venture with access to a variety of resources, including potential customers. For science-based entrepreneurial firms, being associated with researchers can enhance the credibility of a new firm and provide it with entry to distinct networks thanks to the connections, the social capital at the disposal of the scientist. What our preliminary findings show, however, is that the scientist's social capital can be of little value if companies being targeted by a start-up business are part of a different network. The business entrepreneur then has to rely on alternative means to identify and initiate contact with potential customers – a process which will arguably take a considerable amount of time when those associated with the venture have limited knowledge of their target markets and how to go about pursuing customers in those networks.

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