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SIGNIFICANCE OF SOCIAL NETWORKS AND COMMUNITIES FOR INNOVATIVE SME ENTERPRISES

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ABSTRACT

This paper considers incubators, innovation-supporting value networks and communities and examines how they can be used to help a SME firm to improve its business. This paper pays particular attention to the importance of social capital, organizational learning, and trust in networks and to the role of incubators. Focus will be more on the way firms operate within the networks and communities to which they belong and the management challenges involved in using them to best effect. Strength of networks (especially for smaller firms) is that they offer a way of bridging gaps between what firms do and what is possible (best practice). For high-tech Company, incubator is the hub for process of their networking in the business world. High-tech incubator management includes process of management networks tangible and intangible flows.

Keywords: Incubators, value networks, communities of practice, high-tech

1. INTRODUCTION

The greatest future breakthroughs will come from leaders who encourage thinking outside a whole building full of boxes. Inside the-building thinking is the hallmark of establishments, whose structures inhibit innovation. Once the architecture is set, stakes divide the floors and reinforce existing patterns and practices. Even change-oriented inside the building thinkers take organization and industry structures for granted. They pay most attention to similar-looking competitors in markets already served. (1) Evidence from SME and entrepreneurship studies suggests that a key condition for small firms to be innovative and grow is that they should have network mobilization capability; i.e. the ability to establish networks of collaborates (2). Social capital and relationships are key facilitators in this establishment process (3). To foster innovation and transformation, leaders should focus on impact, not inputs. They should identify unsolved problems, map the wider system influencing results, and determine weak links to strengthen or gaps to fill. Nevertheless, to do all that effectively, they must first jump out of the box and leave the building (1).

Further, more they knead to see enterprises from different perspective. They knead to see company truth-value sheering prism. To manage companys in that are primary driven on knowledge, companys that depend on work of knowledge workers, menager knead to change focus and put on glases that will gave them power to see tangible and intangible flows in organization and market. This means that managers kned to change perspective, walue systems and system qontrol. In tih proces management will observe types of exchanged value. Limited research has been aimed at identifying sources of innovation and integrating supporting processes of innovation from a knowledge-based perspective for SMEs (4).

2. SOCIAL NETWORKS

In order to adapt to certain terms that allow assessment of the intangible value it is necessary to recognize the importance of social networks. Nahapiet and Ghoshal (5) combine the external and internal dimensions in their comprehensive framework by defining social capital as the sum of resources embedded within, available through. In addition, derived from the network of relationships by an individual or a social unit. We knead to adopt this view and take up the three dimensions proposed by Nahapiet and Ghoshal; the structural, the cognitive and the relational, in futher analysis. The structural dimension is reflected in the network ties the firm has and in the network configurations within which it is embedded. It has been shown that the number and diversity of existing networking relationships have a positive influence on firm growth (6). This seems to be conditioned by the centrality of the firm in the network and by its networking activity (7).

3. VALUE NETWORKS

One of the most important and challenging questions in working with intangibles is, “How do we convert intangible assets such as human knowledge, internal structures, ways of working, reputation, and business relationships into negotiable forms of value?”

Intangible assets include relationships, employee know-how and competency, the effectiveness of the organization’s work groups and structure, the efficiency of the organization’s production and service processes and the level of trust between the people or organizations forming the relationships. Trust is an expression of high degrees of social capital, both within the organization and externally expressed as reputation and brand. Tangible assets are financial resources and other capital-based resources that are controlled by the firm.

Purposeful networks, such as organizations, consist of specific roles and value interactions oriented toward the achievement of a particular task or outcome. The active agents of the network are real people who participate in the network by playing particular roles in which they convert both tangible and intangible assets into negotiable offerings and fulfill different functions (8). In the case of companies that appear in the incubator according to the tangible and intangible values that I provide them with the incubator. Practice has shown that the intangible value that provides incubator management is crucial for the successful development of startup companies.

These activity-focused networks, therefore, can be considered value conversion networks, or value networks. A value network is any set of roles and interactions in which people engage in both tangible and intangible exchanges to achieve economic or social good. Internal value networks include activity-focused sets of relationships between individuals (e.g., the chief executive officer and the chief financial officer or team members) within and among work groups (e.g., those within and between the manufacturing, research and development, or sales departments), and between and among the various work groups that make up the organization (8).

External-facing value networks include those between the organization and its suppliers, its investors (including venture capitalists); its strategic business partners (e.g., a business with a complementary product); and its customers. Other kinds of networks cross organizational and industry boundaries, such as innovation networks or networks of people with the shared purpose of creating a particular social good or outcomes, such as improving education. Terrorist and criminal networks are also value networks, of course. The network is a value conversion mechanism that achieves not only positive goods and outcomes, but nefarious and negatives ones as well, according to the values and intent of those who serve the network. Still, as long as the principles of a healthy value network are followed, the network will be sustained and fulfill its purpose (8).

4. ROLE OF NETWORKING IN BUSINESS INCUBATION

Clusters are a form of network. Some clusters focus on the ‘horizontal’ nature of relationships between SME’s that both compete and collaborate. Others would see the relationships between large firms and their core suppliers as leading to clustering in many cases. These are essentially hierarchical relationships, which happen to involve inter-firm rather than intra-firm relationships. The equality of relationships between firms found in such clusters derives from the technological interdependence of a group of large and often international firms. Some observers, most notably Porter (9), have assigned great importance to the presence of demanding customers as stimulants to innovation in different clusters. In some industries, customers are the critical elements in the development of new products.

There is some debate as to whether the firms involved in clusters are in the same or related industries. In the wool textile cluster in Prato, Italy, for example, there are both textile companies and the engineering firms that make textile equipment. Similarly, in the Finnish forest cluster, machinery manufacturers are an essential aspect of the cluster’s success. The cluster includes both paper manufacturers and the emerging firms that clean up environmentally after the paper processes. In that cluster, the ‘forest’ is the key link between the economic activities. In other work, clusters are more strictly defined as parts of an industry (all making leather goods or ceramic tiles, for example), but linked through their inputs to different activities in the production chain. These policies are commonly overly simplistic in their prescriptions, with little appreciation of the specific industrial, technological, and cultural contexts that so influence comparative advantages and mitigate against ‘off the- shelf’ policies (10).

Learning is exchanged not only between the actors in a particular network, but also potentially between the broader networks of participating firms. One of the key requirements of successful collaboration is for participants to understand the nature, process, and likely outcomes of partnerships and to adjust the ways in which they behave to enable the team to deliver more than would have been

possible had they worked on their own. Behaviors associated with team working and developing an appropriate set of values and cultures is an important prerequisite for success in collaboration.

While learning from experience is likely to be the major form of instilling such knowledge, it is noteworthy that the approach taken by the Japanese government's Plaza Program eases firms into collaboration by a lengthy 'getting-to-know-you' procedure, before joint projects are established. The cautious approach to forming partnerships and the recognition of the need for a high level of trust between technological collaborators is a feature of the Japanese public-policy approach to forming technological linkages(10).

In recent years, we have seen the emergence of a new incubator model: a networked incubator, which is a hybrid form of the archetypal business incubators (BIs). Much research on BIs tends to take a rather descriptive and theoretical approach, typically in the form of extensive documentation of the various services provided, e.g., monitoring the number of training programmers carried out, keeping track of how many firms have left the incubator, reporting how many distinct services are available to clients, average incubation time, and networking activities (11).

BIs are generally perceived as a kind of infrastructure geared to support and nurture the establishment and development of small and medium-sized enterprises (SMEs). Recently, there has been a significant increase in the number of incubators (11). The increasing diffusion of these BIs calls for a more detailed look at what this phenomenon actually is the specific sources of value it provides to entrepreneurs and entrepreneurial activities, the organizational settings under which it works, and the practices, resources, and/or services it employs to facilitate or hinder new start-ups and subsequent growth. BI is an umbrella term for any organization that provides access to affordable office space and shared administrative services (11). Over the years, BIs have been marketed under a variety of more or less synonymous labels, including 'Business Accelerators' (12); 'Research Parks' (13); 'Science Parks' (14); 'Knowledge Parks' (15); 'Industrial Parks' (16), 'Innovation Centers' (17), 'Technopoles' (18), and 'Networked Incubators' (19). In other words, the 'wonder child' has many names. Thus, some incubators have been established to accelerate regional economic development and to help capitalize investment opportunity, while others have been established for the purpose of commercializing academic research, typically by bringing small, high-tech firms into contact with high-tech university campuses.

The American National Business Incubation Association (www.nbia.org) defines a BI as "an economic development tool designed to accelerate the growth and success of entrepreneurial companies through an array of business support resources and services". According to (20), these support services include assistance in developing business and marketing plans, building management teams, and obtaining capital and access to a range of other more specialized professional services. They also provide flexible space, shared equipment and administrative services.

An interesting feature of BIs is their potential for creating and exploiting synergy. The combination of different resources, services, and skills is thought to create a synergy for incubatees. This means that the incubator becomes more than just a physical arrangement with a specific geographical location where a new venture can minimize start-up costs by accessing affordable space, shared services, and business assistance (21). Incubators typically seek to provide a nurturing business environment by actively ensuring that start-up firms get the resources, services, and assistance they need. These resources are often a luxury that new ventures lack or cannot afford yet. In this sense, incubators try to address many of the failures of the market: information costs, lack of services and business assistance, and financing.

Researchers from various disciplines have in recent years increasingly focused on social capital theory, i.e., on interpersonal relationships in social systems (22). Social capital can be seen as resources embedded in a particular social structure, while at the same time being made accessible and mobile by purposive actions, (23) summarize previous research on social capital by concluding that individuals work together more effectively and efficiently when they know one another, and trust and identify with one another. Strong social ties based on personal relationships may also play important economic and social roles during entrepreneurial agency. Personal ties result in improved company performance (24). Support, knowledge, and complementary resources may be acquired through such social ties, resulting in social cooperation between key players. During a social exchange, one individual typically, and usually voluntarily, provides a benefit (e.g., information, advice, resource access, or other services) to another individual. This places an obligation on the receiving party to reciprocate by providing some benefit in return. Due to the inherent voluntariness of such exchanges, however, the provider cannot be sure that such benefits will automatically be reciprocated. Trust is a key moderating factor during such exchanges. This, however, will not be discussed further here.

Incubatees can utilize two kinds of networks: internal and external networks. These are equally important inasmuch as they both help the incubatee gain access to business networks. Internal

networks are particularly useful to social capital building inasmuch as they enable multiple companies to share all kinds of resources. External networks, however, are also crucial to incubatees as they link tenants with potential partners, customers, local business, etc.

Social capital is increasingly perceived as important in terms of business networks (25). Some studies, for example, have described how both actors and organizations function in the context of a network. At the heart of social capital are relationships between individuals and organizations based on expectations, obligations (norms), and trust. Recent studies in the biotech sector have also demonstrated the importance of social networks as a source of learning (6).

It should not be overlooked, however, that networks are not ‘given’ but created by individuals and their social interactions with other individuals. This means that they are not distinct entities from the goals of the individuals comprising the networks. By its nature, an incubator may help build social capital. Tenants are given the opportunity to get to know each other and to work together in a variety of ways. This is what makes these incubators “hubs” for networking activities. Within the network, the individual entrepreneurial actor has private concerns as well as economic and social interests. Thus, both the nature and context of social and business relationships are important (26). It should be emphasized, however, that social capital can be difficult to build and even more difficult to maintain.

5. CONCLUSION

Various studies have looked at the services that are used the most and are found most useful by tenants. Here, it is necessary to differentiate between the services that are used more or less regularly and those that are the most crucial inasmuch as these will not necessarily be the same. In the studies, services are often divided into (i) shared office services and (ii) business assistance and networks (27). Existing small businesses can play a critical role in linking entrepreneurial actors to both informal and enterprise support networks (21). Many firms used the incubator as an internal market place (17). He found that two fifths of the firms having left the incubator had purchased goods or services at least once from other firms in the incubator, and about a quarter had sold to other incubator companies. More specifically, a social connection between the tenants is very important to networking and cooperation. With regard to networking, another important aspect of the construction of the incubator is the values on which it is based. Entrepreneurial actors in general could benefit from being more aware of the role and importance of social networks during the process of establishing a new venture, including how they can improve their rather limited insight into the actual constituents of their networks. Entrepreneurial actors in incubators and in networked incubators in particular should be made explicitly aware of this before joining such arrangements. Networks are crucial to entrepreneurial actors. Thus, the ability to connect up to strategically important clusters of networks is a critical managerial skill. Such networks can give entrepreneurial actors the necessary legitimacy, skills, and resources needed when launching a new venture.

REFERENCES

- [1.] Kanter RM. *Think Outside Building*. 2010 March: p. 34.
- [2.] Hoang H, Antonic B. *Network-based research in entrepreneurship – A critical review*. *Journal of Business Venturing*. 2003; 18: p. 165–187.
- [3.] Chetty S, Campbell-Hunt C. *Explosive international growth and problems of success amongst small to medium-sized firms*. *International Small Business Journal*. 2003; 21(5): p. 5–27.
- [4.] Sveiby KE. *The New Organizational Wealth: Managing and Measuring Knowledge Based Assets San Francisco: Berrett Koehler*; 1997.
- [5.] Nahapiet J, Ghoshal S. *Social capital, intellectual capital, and the organizational advantage*. *Academy of Management Review*. 1998; 23: p. 242–266.
- [6.] Powell WW, Kogut K, Smith-Doerr L. *Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology*. *Administrative Science Quarterly*. 1996; 41: p. 116–145.
- [7.] Walker G, Kogut B, Shan W. *Social capital, structural holes and the formation of an industry network*. *Organization Science*. 1997; 8(2): p. 109–125.
- [8.] Allee V. *Value Network Analysis and value conversion of tangible and intangible assets*. *Journal of Intellectual Capital*. 2008; 9(1): p. 5–24.
- [9.] Porter ME. *The Competitive Advantage of Nations by Michael E. Porter New York: Simon & Schuster*; 1990.
- [10.] Dodgson M, Gann D, Salter A. *The Management of Technological Innovation - Strategy and Practice New York: Oxford University Press Inc*; 2008.
- [11.] Allen DN, McCluskey R. *Structure, policy, services and performance in the business incubator industry*. *Entrepreneurship Theory and Practice*. 1990; 15(2): p. 61–77.

- [12.] Barrow C. *Incubators—A Realist's Guide to the World's New Business Accelerator* New York: Wiley; 2001.
- [13.] Money M. *University-related research parks. Industrial Research.* 1970 May;: p. 62–64.
- [14.] Martin F. *Business incubators and enterprise development: neither tried or tested. Journal of Small Business and Enterprise Development.* 1997; 4(1): p. 3-11.
- [15.] Bugliarello G. *Knowledge parks and incubators. In Dorf RC, editor. The Handbook of Technology Management.* 1414149th ed.; 1998.
- [16.] Autio E, Klofsten M. *A comparative study of two European business incubators. Journal of Small Business Management.* 1998; 36(1): p. 30-43.
- [17.] Campbell C. *Change agents in the new economy: business incubators and economic development. Economic Development Review.* 1989; 7(2): p. 56-59.
- [18.] Castells P, Hall P. *Technopoles of the World: The Making of the 21st Century Industrial Complexes* London: Routledge; 1994.
- [19.] Hansen MT, Chesbrough HW, Nohria N, Sull DN. *Networked incubators. Hothouses of the new economy. Harvard Business Review.* 2000; 78(5): p. 74-84.
- [20.] Sherman H, Chappell DS. *Methodological challenges in evaluating business incubator outcomes. Economic Development Quarterly.* 1998; 12(4): p. 313-321.
- [21.] Allen DN, Rahman S. *Small business incubators: a positive environment for entrepreneurship. Journal of Small Business Management.* 1985; 85(23): p. 12-24.
- [22.] Burt RS. *The contingent value of social capital. Administrative Science Quarterly.* 1997; 42: p. 339–365.
- [23.] Lin N. *Social Capital: A Theory of Social Structure and Action* New York: Cambridge Univ. Press; 2001.
- [24.] Hu Y, Korneliusson T. *The effects of personal ties and reciprocity on the performance of small firms in horizontal strategic alliances. Scandinavian Journal of Management.* 1997; 13(2): p. 159–173.
- [25.] Lyons TS. *Building social capital for sustainable enterprise development in country towns and regions: successful practices from the United States. In Conference on the Future of Australia's Country Towns; 2002; Bendigo.*
- [26.] Larson A, Starr JA. *A network model of organization formation. Entrepreneurship Theory and Practice.* 1993; 17(2): p. 5-15.
- [27.] Mian SA. *Assessing value-added contributions to university technology business incubators to tenant firms. Research Policy.* 1996; 25: p. 325-335.



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