

Community Knowledge – A Catalyst for Innovation

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1. Introduction

The legacy of Schumpeter tells us that a business' chance of maintaining a competitive advantage depends on the company's ability to continuously upgrade its competitive advantages, along with how readily competitors and potential new companies can imitate these competitive advantages (Schumpeter, 1934). Today there is agreement world-wide that knowledge and innovation represent the competitive strength needed for successful companies (Nonaka, 1991; Brown & Duguid 1991, 1997, 2001; Nonaka & Takeuchi, 1995). Nobel Prize Laureate Simon Kuznets puts it this way: "an increase in the stock of useful knowledge and the extension of its application are of the essence of modern economic growth" (1966, p. 6). We see the emergence of the knowledge- and service-intensive organization, and the practice of employing a high percentage of qualified manpower as replacing the capital-intensive and labour-intensive organization (Fruin, 1997).

The leadership and management of processes of innovation and development are regarded, both in literature and in practice, as complex and difficult to achieve (Johannessen, Olaisen and Olsen, 1999). The result is that the development of skills in managing change and innovation has been widely regarded as being at the front line of organisation and leadership throughout the 1990s and into the new century. Innovation, in the sense of using knowledge to create new knowledge, is of crucial importance (Quinn, 1992; De Boer *et al.*, 1999; Drucker, 1993). Thurows (1996) puts it this way: "[...] better use of existing knowledge and more effective acquisition and assimilation or new knowledge becomes the business imperative" (p. 17).

In this paper I will examine three different models in order to understand development of entrepreneurial activity and innovation:

1. The individual/cognitive model
2. The "community" model
3. The system/network model.

My main focus will be development and entrepreneurship within various "communities", since the basis for innovation lies in the development of a creative environment, with a special emphasis on communication between participants. To conclude, I present a case study where an authentic example illustrates some of the points made in the theoretical parts of the paper.

2. Innovation and entrepreneurship

Studies of innovation have focused on different levels of analysis of the process. The early literature focused on the adoption of new ideas and practices by autonomous individuals (Rogers, 1962), whereas since the late 1950s there has been growing interest in organizational innovation, i.e. innovation within, and by, organizations (March and Simon, 1958; Burns and Stalker, 1961; Zaltman *et al.*, 1973). At the same time, economists have examined innovation patterns at the level of industries and national systems (e.g., Dosi *et al.*, 1988). The existence of differing perspectives within the literature concerning innovation in organizations has been recognized for some time. In an early paper on innovative organizations, Becker and Whisler (1967) referred to a 'humanistic approach' used by those wishing to explain innovation behaviour in terms of personality characteristics of organizational participants, and a 'structural approach' used by those seeking to explain innovative behaviour in terms of structural differences. Schumpeter also used a dual perspective and he eventually shifted his focus from the individual perspective to look at the role of big business as primary movers in development. A perspective widely associated with Schum-

peter is connected to the phenomenon of “creative destruction”. When new businesses are established in competition with existing companies, this can lead to the removal of the basis for the existing business. This can release resources, which in turn can be used in a new and creative manner to create new activity.

Different perspectives generate different approaches. It has become normal to differentiate between three different perspectives (Pierce and Delbecq, 1977). In accordance with this, Newell *et al.* (2002) distinguishes between a *cognitive approach*, *community approach* and *networking approach*. Another familiar methodology is Slappendal’s (1996) *individualist*, *structuralist* and *interactive* processes. In his account of entrepreneurship in Norway, Spilling (2006) includes descriptions of the characteristics of business founders, entrepreneurship in a systematic perspective, entrepreneurship in a dynamic and structural perspective, and entrepreneurship and networking/networks. Despite some dissimilarity between the various concepts and/or descriptions, there appear to be a number of recurring ideas. Firstly, entrepreneurship was originally defined in terms of the abilities and motivation of the entrepreneur him-/herself. A second explanation is to be found in collaborative processes, particularly when connected to the development of ideas in so-called community practice.

If such development is an important premise for entrepreneurship, it requires an environment that can release tacit abilities and inspire new ways of thinking within organisations (von Krogh, Ichijo and Nonaka, 2000). A third way of looking at the phenomenon is to see entrepreneurship in the context of a system or network perspective – implying that it is intimately related to many environmental factors. Central here is the question of how entrepreneurs can access different types of resources through their various types of networks.

3 The individualistic perspective

3.1 The ability of the individual

In the common public perception of entrepreneurship, it is easy to see that attention is directed towards individuals and their ability to develop their businesses. The myth of the local “Gyro Gearloose” who sits in a cellar and suddenly comes up with his brilliant idea is still alive and well. It is fundamental to the idea of entrepreneurship that individuals and their ability to act form the primary engine for entrepreneurship. An individualist perspective on action assumes that the individual is a major source of change in organizations. The actions of the individual are not regarded as constrained by external factors; instead, individuals are perceived to be self-directing agents who are guided by the goals

defined by themselves. In addition, from this perspective individuals are rational and make decisions in order to maximize value or utility. In the literature of organizational innovation, the individualist perspective is most clearly expressed in those studies that identify individual-level antecedents of innovation. These antecedents have been defined in terms of individual characteristics and individual-level characteristics, such as age, sex, level of education, values, personality, goals, creativity, and cognitive style (see Rogers 1962; Amabile 1988; Scott and Bruce 1994). This approach assumes that certain individuals have personal qualities predisposing them for innovative behaviour. The problem is that it is often difficult to identify any clear pattern of individual characteristics. The answers to this question also vary depending on whether we base our enquiry on micro- or macro-economic theory, on psychology or sociology, or on factual observations regarding *who* has become entrepreneurial (Røe Ødegård, 2003). Stoke and Wilson (2006), Bolton and Thompsen (2003) and Røe Ødegård (2003) all conclude, on the basis of psychological/sociological explanations, that a number of personal characteristics are predominant amongst entrepreneurs:

- they are rich in ideas, have great confidence in their own abilities and take pleasure in new challenges
- they have a strong performance motivation (in other words, a great desire to perform well in a competitive situation), they can cope with losing and take loss as an inspiration to win next time
- they are confident that they can influence their surroundings, they trust their own opportunities and resources and dislike terms such as “good/bad luck” and “it’s in the hands of fate”
- they think in terms of opportunities and are predisposed to act.

In the same tradition, Bolton and Thompson (2003) develop a complete battery of tests to identify strong and weak aspects of an individual’s tendencies and personality in relation to succeeding as an entrepreneur. The authors deal with ego function, social abilities, the ability to maintain focus and seize opportunities, creativity, and qualities of team work.

This type of individual perspective is also dominant in the field of strategic theory. Five of the ten ‘schools of strategy’ identified by Mintzberg, Ahlstrand and Lampel (1998) emphasise individual factors relating to the leader as the most important driving force for strategic change and innovation. This is most dominant in ‘the entrepreneurial school’, in which an organisation’s innovative power is attributed to its leader’s ability to formulate and implement a vision. Although this rather simplistic line of thinking can be found in the literature

on entrepreneurship and leadership, some writers have argued that these personal qualities may be transient, and that other factors may also be involved. For instance, in his definition of the entrepreneur, Schumpeter (1934) is careful to point out that individuals are entrepreneurs only when they carry out 'new combinations' and that it is rare for an individual to remain an entrepreneur throughout his/her active life.

3.2 Some critics

Research on individual-level antecedents has a number of weaknesses when applied to organizations. Firstly, it is based on the assumption that innovative decisions involve a single individual only. In organizational settings, this assumption is unlikely to be valid (Van de Ven *et al.*, 1989:17).

Secondly, individual characteristics may be overshadowed by the effect of organizational roles and organizational position, as Baldrige and Burnham (1975) demonstrated in their study of innovation in schools. The concept of role is a sort of 'bridge' between the organizational and the individual level (Baldrige and Burnham, 1975:168). It represents a shift away from the purely individualist perspective outlined above, to one which recognizes behaviour as socially mediated. This emphasis on individual abilities and characteristics identifies the entrepreneur's cognitive abilities and creativity as the primary driving force behind the entrepreneurship.

There has been considerable belief in the rationality of the individual. The idea that the cognitive capacities of actors may represent limits on rationality is of course found in the early work of decision-making theorists, such as Simon, March and Cyert. While these theorists challenge the notion of rational choice, Pfeffer (1982) has argued that much of their work still leaves the basic assumptions of the rational individualist model intact and, as such, it should be regarded as 'a subset of theories of rational choice'. A similar position is taken by Pettigrew (1985, 20), who finds in the work of March and Simon (1958) a tendency to approach organizational processes largely from an individualist perspective.

3.3 Motives for starting a new business

Another field that has attracted a good deal of research is the motives for starting a new business. Motives vary from person to person, and may also vary depending on the type of business that is initiated. The literature generally distinguishes between 'push factors' and 'pull factors', reflecting positive and negative motivational factors (Stokes & Wilson, 2006; Spilling, 2006). 'Push factors' are circumstances that create an external

pressure to act. It may be economic circumstances that force an individual to act, or an unsatisfactory work situation which provides the impetus to find something different. These are often referred to as 'job-seeking' motives.

'Pull factors', on the other hand, are positive attributes that function as a driving force for establishment. It may be the realisation of a favourable market situation, or that an individual's specific competence can be used constructively by establishing a commercial business. The latter factor can be generically referred to as a 'self-fulfilment' motive. In addition to the 'job-seeking' and 'self-fulfilment' motives, a third category is termed 'environmental factors'. Environmental circumstances can strongly stimulate or depress business establishment. These can be factors in the local commercial landscape or support and stipend schemes.

Research among Norwegian business founders shows clearly that it is the 'self-fulfilment' motive that is the most important for them. The most significant factors in this respect were the chance to use their own resources and exploit good market prospects. In other words, the primary driving force was a combination of self-fulfilment and economic opportunity. Data also suggest that financial need is important and that good local support from family and from the business community is significant in motivating the establishment of a business. These factors are however less important than 'self-fulfillment' and the 'job-seeking' motives.

Despite some dominant tendencies in the data with respect to motives for business establishment, the nature of an entrepreneur's motivation will vary from one individual to another. On the basis of factor analysis, Spilling (2006) has nevertheless identified three main categories of entrepreneurs presented in Table 1.

In this section I have pointed out that much of the literature of entrepreneurship focuses on individuals and their ability to act as a primary engine for entrepreneurship. An individualist perspective on action assumes that the individual is a major source of change in organizations. Motives for starting a business will vary from person to person, and may also vary depending on the type of business that is established. The literature generally distinguishes between 'push factors' and 'pull factors', reflecting positive and negative motivational factors (Stokes & Wilson, 2006; Spilling, 2006).

Table 1. Different categories of entrepreneurs

Categories of entrepreneurs	Strong positive correlation with:
Local community entrepreneurs	Good local opportunity for business Inspiring local business environment Good public support systems Local need for more business supply
Self-realisation entrepreneurs	Desire to realise abilities and resources Desire to be able to work more independently Good ideas and a need to try them out Good support from friends and family Good market prospects
Job-seeking entrepreneurs	Need for income Unemployed or uncertain job Desire to live locally

4. The community of practice perspective

4.1 Communication as driving force

Contrasting the individualistic perspective, a different perspective focuses on the communicative of practice and on the creative environment. This line of thought emphasises socio-cultural power as a driving force for development. The basis of innovation lies in the development of a creative environment, emphasising communication between participants. To encourage innovation and entrepreneurship it is important to create an environment of creativity, labelled 'Ba' by von Krogh, Ichijo and Nonaka (2000). Entrepreneurship in modern organisations is related to collective processes which create unified action and a community among those who participate in the processes (Elkjær, 2005).

I would like to introduce here some other contributions, which in one way or another reflect a socio-cultural and practice-based starting point for the development of ideas and learning as a driving force for innovation, and which contrast the economic and resource-based models (Cook and Brown, 2002; Nonaka, Toyama and Konno, 2002; Gehrardi and Nicolini, 2003).

4.2 Knowledge in action

There is no single cohesive recipe for a socio-cultural approach in a community, but its primary focus will be on "an interest in the local, the particular, and the timely" (Suchmann, 2003, p. 187), as opposed to the universal, general and timeless.

The focus is on the individual's performance 'here and now' and on the resources the individual employs

in carrying out various types of functions. Learning is here regarded not primarily as an individual and mental process. Instead, it is seen as relating primarily to social and cultural phenomena. The various ways of enquiry all attempt to address the relationship between the individual and his/her environment. We encounter a large number of terms referring to aspects of this relationship, such as *situated cognition* (Greeno, 1998; Clancey, 1997), *situated action* (Mantovani, 1996), *distributed cognition* (Hutchins, 1995), *learning as legitimate peripheral cognition* (Lave and Wenger, 1991), *mediated action* (Wertsch, 1998), *cultural psychology* (Cole, 1990, 1996), *activity theory* (Engeström, 1987; Engeström and Miettinen, 1999), *reflection-in-action and knowing-in-action* (Schön, 1983), *tacit knowledge* (Polanyi, 1966), *hidden experience* (Öquist, 1994), *communities of practice* (Brown and Duguid, 1997), and *Ba* (von Krogh, Ichijo and Nonaka, 2000).

However, what all these concepts have in common is an understanding of the development of ideas as an activity inextricably bound to a complex social and cultural context. "What individuals learn always and inevitably reflects the social context in which they learn it and which they put into practice" (Brown and Duguid, 2001, 200). Activity, participation and action are terms that identify learning with the use of ability, and which imply that this ability is part of an identity that is greater than the individual. Ability is not something that has its origin in, or that is contained within, the heads of members of an organisation. It is rather a form of distribution of social expertise, or knowledge in action (Schön, 1983) which occurs and is located within a historic, socio-material and cultural context. Our abilities, as a rule, lie embedded in our patterns of action and in the substance with which we deal. Frequently, our spontaneous practice-based behaviour reveals a form of knowledge that does not originate in a preceding analytical and rational judgement.

This means that such knowledge will have the following characteristics (Schön, 2001, 29-70; Gehrardi and Nicolini, 2003, 204-206):

1. There are actions, recognitions and judgments that we spontaneously know how to carry out. We do not need to think through them in advance or while performing them
2. We are rarely aware of how we have learned this behaviour, and it can be difficult to explain this behaviour to others
3. It is located within a network of continual practice. An important point here is that ability is integral to the social and material conditions in which it was created

4. It is relational and is mediated by a variety of artifacts. The most important “instrument” for mediation is often language and the discursive practice in which action and interaction is made explicable for others and for oneself
5. It is always based on a context of interaction, and is gained by one or another form of participation in a practice community. This point reinforces the importance of possessing the ability for practical action – the competence to act here and now.
6. It is continually reproduced and renewed and is therefore always dynamic and temporary.

The outcome of these points is that knowledge and the development of ability cannot be regarded as objective, universal and stable. Innovation from this point of view is a process depending on knowledge flow. We must rather describe innovation in terms of process and dynamism and in an arena that is temporary and local. Human behaviour employs a variety of social and material resources, and ability has an ever-changing local and place-specific aspect. Knowledge is (1) created in the form of participation in a field of practice, (2) constantly reproduced and renewed and (3) always dynamic and transitional. It is only thus that new knowledge can be created and gives root to innovation.

4.3 Community of practice

The term ‘community of practice’ is very central to parts of socio-cultural understanding, and Kristina Lee (1999, 49) defines it as “A group of people:

- developing a shared way of working or playing together to accomplish some activity (their practice)
- usually involving individuals with different roles and experience.”

Wenger (1998, 73) has a more complex and detailed explanation in which practice and community are connected along three important dimensions:

- mutual engagement, interest
- common activity, action
- a shared repertoire of history, concepts and tools.

Newer work by Wenger, McDermot and Snyder (2002, 4-5) also underlines that our understanding of a community of practice should not merely be restricted to activity, but also include “groups who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interaction on an ongoing basis”. Thus, we are not necessarily talking about a group that works together on a daily basis, but a group that meets, is connected by a common interest or common function or is concerned

with the same set of issues. They help each other to solve mutual problems, explore ideas and exchange experiences.

The value of “membership” is not just quantifiably connected to a work situation, but equally connected to a feeling of being in an interesting community with other people. This type of community of practice is cultivated through the interaction of competence and personal experience in an environment of common engagement with issues of shared interest. This sort of exchange of knowledge will also be extremely dynamic in that it arises from “negotiation” within the social interaction that occurs in the practice context. The relationship between members is based on a high degree of trust, and the group will often have a specialised language and type of communication. Story telling is a common means of exchanging knowledge. Another term for some of the same qualities found in a knowledge-sharing environment has been developed by von Krogh, Nonaka and Ichio – ‘Ba’. ‘Ba’ is essentially a shared space that serves as a foundation for knowledge creation, one that is often defined by a network of interactions. Particular individuals’ knowledge can be shared, re-created, and amplified when he or she is part of that context.

The fundamental principles of Ba are care and communication. We can think of Ba as an enabling context, a place in which knowledge is shared, created, and used.

4.4 Knowledge development in community of practice

In the community of practice the members participate because they want to share their experience with each other; “you help me and I will help you” (Newell et al., 2002, 120). Knowledge development and learning in a socio-cultural perspective is identifiable as a set of activities woven into a complex social and cultural context. This means that knowledge development takes place in the social practice situation which occurs when members, through their activity, their “negotiation”, develop knowledge.

Von Krogh, Ichijo and Nonaka (2000) state that the process of creating knowledge in a business consists of five steps: sharing tacit knowledge, creating a concept, justifying a concept, developing a prototype and strengthening and making the knowledge interdisciplinary. Although it is difficult to share tacit knowledge, this is an essential part of a business’ strategy and socialisation process, which forms the first step. This is carried out through observation, stories, imitation, experimentation, comparison and joint development. The development of a concept is the second step, e.g. of a service as a result of experience and imagination. The third step is the legitimatisation of the concept, leading on to the next, the

development of a prototype. The final step is reinforcing the knowledge. The responsibility of leadership is to ensure that a minimum of time is spent from receiving the knowledge to developing it. In addition, the knowledge must be documented and distributed to all. This brings us to the five instruments central for knowledge development: to envision knowledge, to initiate discussion, to mobilise knowledge activists, to create the appropriate context and to make the specific knowledge universal.

4.5 Knowledge development and innovation

Ideas of knowledge development and degree of innovation can be illustrated using the categorisation employed by von Krogh, Ichijo and Nonaka (2000, 261): risk minimisers, efficiency seekers and innovators. What distinguishes these three categories is focusing on existing versus new knowledge and on existing content versus creative processes.

The risk minimisers, who are focusing on risk reduction, will often say “let us identify what we have and hang onto it before it is too late”. Such people are concerned with existing knowledge and wish to chart, capture and use it in the best possible way, often using databases or cataloguing tools to collect and distribute this knowledge. The other strategy is characteristic of effectiveness seekers: “make what we have readily accessible for the whole organisation and find new areas of application for existing knowledge”. The distribution of knowledge is important, as is charting best practice, which often offers financial economies. Leaders, however, have also become interested in the tacit knowledge resident in individuals and wish to employ this knowledge to discover opportunities to use and develop the existing knowledge base. The third category – the innovators – are the ones that provide organisations with a new course in terms of knowledge. Their approach is this: “The knowledge we have is not adequate to develop a knowledge-based business. We must create new knowledge which can be used for successful innovation”. They therefore focus on new knowledge and knowledge processes. They are knowledge activists who engage and motivate, and they develop a context for the nurturing of knowledge. They also understand that it is primarily these practice communities or various types of Ba that are the best arenas for knowledge development, and they cultivate and encourage such environments.

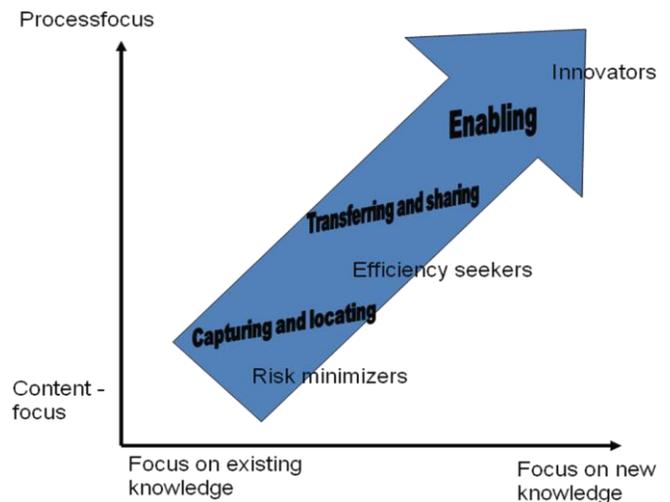


Figure 1. Company development & knowledge creation

Contrasting the individualistic perspective, the community of practice perspective emphasises socio-cultural power as a driving force for development. The basis of innovation lies in the development of a creative environment, emphasising communication between participants.

Consequently, knowledge and the development of ability cannot be regarded as something objective, universal and stable. Innovation from this point of view is a process depending on knowledge flow which must be described in terms of process and dynamism and in an arena that is temporary and local.

4.6 Criticism of the community of practice perspective

However, this perspective has not been without opponents. In her book *Når læring går på arbejde*, Bente Elkjær (2005, 51-56) criticizes the practice-based concept of knowledge development. Firstly, she points out that the practice-based perspective does not succeed in accounting for where the driving force from which behind the actions comes. It must be something more than simple *participation* in a practice community that produces a driving force. As an alternative explanation she constructs a pragmatic organisational definition (including references to John Dewey 1938/1963), in which an organisation is seen as an analytical unit, distinct from the practice idea and from organisations as practice communities. Elkjær points out that in terms of practical learning, it is difficult to identify what it is that creates the impetus for learning and how learning is carried out. Is participation enough? Pragmatism suggests that learning is initiated when existing habits and meanings are found to be inadequate, when an uncertain situation

arises and causes critical and reflective thought with consequent action.

Another observation is that input has a tendency to become more normative and to concentrate on “recipes” for how to work in order to enable knowledge development in organisations. The title of the latest book by Wenger, McDermott and Snyder (2002), *Cultivating Communities of Practice*, reflects this. Their approach is strikingly similar to that of von Krogh, Ichijo and Nonaka in 2000. Whilst the latter use such terms as “enabling”, “care” and “knowledge creation”, Wenger uses the terms “cultivating”, “design” and “practical models”. Wenger also launches his ‘recipe’ - Seven Principles for Cultivating Communities of Practice. Making relatively normative recommendations will, in my opinion, interfere with the process around the practice-based approach to knowledge development as it was originally formulated.

5 The system/network perspective

5.1 From individuals to systems

Much research on entrepreneurship has directed its attention toward individuals and the processes that these go through in connection with the development of their own businesses. Despite a consciousness that such developments do not occur in a vacuum but depend on environmental factors, there have been few attempts to systematise this in entrepreneurship research. The basis in the system perspective develops from Schumpeter’s distinction between different types of regimes.

Although he, the “father” of entrepreneur research, was concerned with the individualised, “heroic” entrepreneur, he also felt it important to describe significant development mechanisms that could form an environment in which entrepreneurship would flourish. Schumpeter shifted his focus from the individual perspective to looking at the role of big business as primary movers in development. A perspective he is renowned for is connected to the phenomenon of “creative destruction”. When new businesses are established in competition with existing companies, this can destroy the basis for the existing business. This can release resources which can be used in a new and creative manner to create new activity. To what extent this happens depends on many factors. Schumpeter himself introduced the term “regime” to analyse this. By “regime” he means how a system is organised and managed, and how developmental processes are influenced by various conditions. Schumpeter employed the terms *entrepreneurial* and *routine-based* (Spilling, 2007) regimes as analytical types. In the *entrepreneurial* regime there are relatively few barriers to the establishment of new busi-

nesses. There are few formal restrictions and types of rules and regulations, and knowledge flows relatively easily between organisations and people. Development takes place through the mechanism of creative destruction in which new businesses occur through the death of old ones, with the re-distribution of resources. In the routine-based regime, development is dominated by a few large businesses with a great deal of market power. There are high barriers against the establishment of new businesses, which demand considerable resources in terms of capital and competence. The knowledge base is also hard to access; it is often based on long-term and partly exclusive research and development processes governed by established routines and procedures. In addition there will often be a number of formal barriers representing hindrances for new businesses, such as specific rights and various protective mechanisms.

We see here that even at the time of Schumpeter there was a dawning understanding that entrepreneurship is not something that occurs freely and independently of time and place. On the contrary, it occurs under the powerful influence of conditions such as technology, knowledge, social conditions, individuals and established business structures.

Since Schumpeter established the important basis for systemic understanding, a great deal of research has been conducted in this area, and today there are three particularly significant approaches: the innovation system approach, the cluster approach and the significance of networks approach.

5.2 Clusters

The cluster approach is based on studies of commercial clusters by Porters (1998). He defines a cluster as a geographically concentrated group of companies and institutions within a commercial area. They are connected by communalities – such as a common knowledge environment or a common labour market – and complementary factors, or ways in which various types of businesses complement each other, e.g. through customer-supplier relationships. Over a period such clusters achieve a competitive advantage. There are better chances of starting new businesses, and a greater likelihood of succeeding in the market. In Norway quite a lot of attention has been paid to the establishment of clusters based on geographical location. Reve (2007) has summarised cluster studies and shown that only three industries are found to have fulfilled the requirements for complete clusters: the oil and gas industry, the maritime industry and the seafood industry. Others, such as ICT, the finance sector and travel and tourism have the potential to become industrial clusters. He points to successful and unsuccessful attempts to develop indus-

trial clusters and warns against over-simplified conclusions that the development of industrial clusters will automatically result in growth of innovation.

5.3 The network perspective and innovation

A combination of individual and system perspectives is to be found in the network perspective on entrepreneurial activity (Granovetter, 1973; Foss, 2006). Network is here defined as the relationship between people/groups and other bodies with whom they relate. The way in which people relate to one another within the network can be indicative of their social behaviour. Networks thus become structures that can promote or hinder actions related to entrepreneurship. Of particular interest is how entrepreneurs access various forms of resources through the network.

It is not a foregone conclusion that networks automatically give access to resources, and to cast light on this we must examine more closely some of the different characteristics of networks. The strength of a network lies in the amount of time, emotional intensity, intimacy and reciprocal services that it invokes. Strong links between participants result in a high degree of trust, social integration and identity. In an establishment phase it is of course important for an entrepreneur to have good and strong links to others in whom he or she can trust. The disadvantage, on the other hand, is that establishing such links takes time and often is a very gradual process. Contingent links are easier to establish and can give a great deal of information without demanding any particular emotional involvement. People that the entrepreneur meets, for instance at conferences and meetings, can become connections of this sort for informal discussions and information exchange. A variant of strong and contingent links is the concept of direct and indirect links. The presence of many indirect links indicates a broad network that can be an advantage by giving access to a good variety of resources. Another distinction is that between so-called arm's-length links and integral links. Arm's-length links are often formal, commercial links without any particular personal or emotional involvement, such as the entrepreneur's contact with the County Council or specialist consultants, and will not demand any form of reciprocal service in return. Integral links, by contrast, are built on trust and often have a strong emotional component. The point is that an entrepreneur naturally needs different types of links and the ability to use the various characteristics of such links. Sometimes it is important to have strong and close links when intense help and support is required, but arm's-length links are often important to access official information and knowledge.

Not surprisingly, then, it is seen that those engaged in entrepreneurial activity have a need for both close and arm's-length links. It is apparent that both types of links give access to emotional, informative and material resources (Foss 2006, 193–216). We can therefore conclude that networks have a clear indirect influence on entrepreneurship by generating resources. This does not, however, mean that the network perspective is without problems. Networks demand time and resources to establish, maintain and possibly wind up. The availability of and need for various types of network will often change in the course of an entrepreneur's work, and developing a portfolio of types of network appropriate to various situations is also very demanding.

The overall entrepreneurial function is not only dependent on a sufficient supply of entrepreneurs, but also on the availability of a good and varied network which can be used in an informed manner.

6. Three alternative perspectives

The main point of the system and networks perspective is that innovation must be understood as a systematic phenomenon. It is a type of interactivity that occurs between a number of different parties. Knowledge is understood to be the most important resource in the economy, and learning the most important process. The central element of innovation systems is then to produce and spread knowledge and to use it for economic purposes.

By knowledge, we mean both explicit and tacit knowledge. Systems, routines and practices should therefore be established to secure ways of accessing both types. Research in various types of companies demonstrates that the knowledge base is formed of a mixture of explicit and tacit knowledge. Thus, it is particularly important to discover whether and how the "tacit knowledge" can be codified and become a type of knowledge from which other people can profit (Westeren, 2005). Significant commercial advantages can be drawn from using both explicit and tacit knowledge from within the whole organisation. Doing so requires well-developed networks and communication skills.

To summarise, Table 2 illustrates the three perspectives examined in this paper.

Table 2. Summary of different approaches to knowledge creation for innovation

	Individual approach	Community approach	System/network approach
Understanding of knowledge	Knowledge is objectively defined and codified as concepts and facts.	Knowledge as social construction	Knowledge – both explicit and tacit – is located externally in networks and systems.
Primary activity with respect to knowledge.	Knowledge reuse, capture and storage Use of ICT	Knowledge creation and application. Development of social communities including project groups and teams. ICT plays a peripheral role.	Knowledge acquisition. Knowledge is acquired through access to external networks and sources of information. ICT may play a central role.
Role of knowledge management	To codify and capture explicit knowledge in the organization and transfers to the rest of the organization.	To encourage knowledge sharing amongst and between groups and individuals. Use of tacit knowledge.	Use of network. Use of external knowledge and information.
Primary gains form knowledge management	Better recycling of knowledge and the standardization of systems	Greater application of internal and external sources of knowledge to create new practices.	Greater awareness of external developments
Dominant metaphors	The human memory	Community of practice	The network, linking/joining.
Critical resources	Intellectual capital	Social and intellectual capital.	Social capital, structure capital
Critical success factors	Use of ICT	Trust, commitment and communication.	Use of network

7. A tourism case study¹

7.1 The Brandheia story

In this case study I will tell the story of an entrepreneur who has succeeded in establishing a viable tourist business in a North-Trøndelag bog. The tale shows that successful innovation demands both strong personal characteristics such as will and determination, good cooperation with others, both within and outside the business, and an emphasis on an environment that promotes knowledge development and the establishment of a variety of networks and support from many other parties.

At Brandheia Villmark og Velvære, situated in the forest 10 miles east of Steinkjer in the Norwegian county of Nord-Trøndelag, a visitor orders not a single or double

room but a single or double reindeer skin. This is no ordinary hotel or mountain hostel concept. The entire stay is based on the characteristics of the wilderness. In 1990, Mari Lisbeth Finstad had a dream. Together with the neighbouring farm, Kippe, she had about 1500 acres of moorland. "We have to do something with this land", she thought. The following year, Brandheia Villmarksleir (outward-bound centre; now called Brandheia Villmark og Velvære) became a reality. Together with industrious owners and workers she has made this a success. Its modest beginnings, in 1990, consisted of just a wigwam and a small camping area. Since then, the business has grown slowly but steadily, and now consists of four large buildings, several smaller ones and a sauna. The place accommodates a total of up to 50 people and can serve groups of up to 200. During 2007 an extension, consisting of further accommodation and course facilities, will be opened. It is worth mentioning that Brandheia Villmarksleir won the National Rural Tourism Award in 2001. Brandheia's success cannot be explained in terms of any simple perspective on innovation.

¹ Brandheia Villmark og Velvære (Wilderness & Pleasure) – Innovation in a North-Trøndelag Bog is based on a presentation found at www.innovasjon Norge.no and on an interview/conversation with the initiator, Mari Lisbeth Finstad.

It is a very complex picture that emerges – both individual factors, an environment that encourages knowledge development, and the significance of network are important factors in the development of Brandheia.

7.2 A key to success: The individual approach

A strong personality. Business-woman Mari Lisbeth Finstad's philosophy is humour and madness. It is important to be self-assured and to acknowledge one's roots: this enables an assimilation of other cultures. This forms the basis of much of the inventiveness and "madness" that characterises Mari Lisbeth. Brandheia now represents a significant source of women's employment in the small village community. Six of the eight employees are women. Mari and the others regularly foster new ideas, which are later converted into realities, and eventually can result in even more employment possibilities in the village. A substantial element in the success is that they have been economical, allowed plenty of time for their business to develop, and drawn little salary along the way. All development work has been (and still is) carried out on a voluntary basis. Mari believes this is perhaps a "typical female" feature, the desire to be more or less debt free before trying out new escapades. "If you are to succeed, you must burn", she says, and tells the story of a lot of creativity and very little money, and of the importance of developing ideas and then seeking financial support. "You don't really need to think in grand and difficult terms".

We can see here that she possesses many of the characteristics we find in descriptions of the (successful) entrepreneur in the literature. She is full of ideas, very motivated to succeed and, not least, with a strong belief that she will succeed. In this way she can be seen as both a local community entrepreneur and as a self-realisation entrepreneur.

7.3. A key to success: Focus on process and development of new knowledge

Knowledge as a foundation for innovation. Central to the development of the Brandheia concept has been the use of local materials from local suppliers, and products from the surrounding countryside and depending on the season. The choices of architecture, infrastructure, food, drink and activities are all based on local knowledge and tradition.

"We use no bought-in solutions, but catch fish in the mountain lake, shoot moose and pick berries and mushrooms". She focuses on her employees as a significant resource. Good ideas come in, and Mari "collects them" and turns them into reality. She also points out that

there are many resources "well concealed" in every employee.

It is therefore very important to involve employees in the knowledge creation necessary for the business to develop and thrive. The recurring theme is "to see the opportunities, not the difficulties!" Many of the business developments result from spending time with her employees, trusting them, and encouraging them to communicate. This is particularly evident in the development of the food that is served. A good learning environment forms the foundation for interplay between theory and practice, tacit and explicit knowledge, material artifacts, senses, aesthetic signals, individual experience, social interplay and the interpretation of such interplay. This leads to knowledge development occurring in a social practice situation which occurs when the members, through their activity, "negotiate" knowledge. Knowledge development is dynamic and occurs in interaction between competence and personal experience in an environment of common engagement in mutual cooperation. Abilities and knowledge that are developed together are also jointly owned. This means that knowledge does not disappear even if a member leaves the group.

Reflection and practice. A central issue is reflection over one's own practice, with reference to the work of Schön (1983) on the reflective practitioner. He powerfully opposes the predominant technical, rational understanding and launches a practice epistemology which lies implicit in the artistic, intuitive processes that many practitioners use in situations where there is talk of uncertainty, lack of stability, uniqueness or conflicting values. Schön draws on Barnard (1938), Ryle (1949/2000), Polanyi (1967) and others in introducing the terms 'knowledge in action' and 'reflection in action'. He considers that daily life is characterised by intuitive, spontaneous action and that knowledge is on the whole implicit in and bound up in the actions. This means that we often have difficulty in accounting for what we know and why we act the way we do. On the other hand, knowledge can be made conscious and can change when the practitioner enters into a situation where intuitive action ceases, often caused by unexpected and surprising events. This causes reflective action, or a reflection over practice. These reactions can be used to generate new models, principles or ideas based on earlier experiences or practice. The whole can be seen in a new light and the individual can experiment in the practice situation. In this way the Brandheia organisation develops into a learning-intensive organisation. On the basis of observations and conversations, a picture of Brandheia emerges in which employees and leaders emphasise the following:

- there is a great need for continual competence development (pressure for learning)
- conditions are conducive to learning (both explicit learning and everyday learning)
- individuals' competence is in demand and is used
- individuals' contributions are channelled towards the business' core objectives

The development of Brandheia as a learning-intensive organisation appears to be based on two main factors: a well-functioning organisation and a high level of ambition and learning pressure within the team. The organisation is geared towards development, and employees have a great deal of influence on their own work and on the development of the company. The daily work is regarded as being well organised and there is a well-developed feeling of collegiality among the employees. This sense of community also means that there is not a culture of doing whatever one wants. The pressure to learn results in mutual expectations among the employees; that they do their work as well as possible and offer good quality. There are also high expectations with respect to continual renewal and reflection.

7.4 A key to success: The network approach

A final factor that Mari Lisbeth emphasises as important for Brandheia's development is a well-developed network as well as technical and financial support from the organisation Innovation Norway. But let it be said – pure financial support is one thing, but assistance with skills development is just as important! In addition to a close and tight network of family, friends and colleagues, she has also developed a network of external resource persons, customers and public bodies. These networks are rather different in character. The networks of people that she knows well are characterised by trust and have an emotional component, but give access to long-term relationships and are important for creating a good learning environment or Ba. The network of external resources is characterised more by "contingent links" but provides useful new information, provides without diverting focus, and demands less time and emotional investment. Mari Lisbeth's various networks are significant for entrepreneurship in various ways, in terms of structural as well as qualitative aspects of relationships. The size and breadth of the network, the strength of its relationships and its so-called arm's-length and integral links allow her access to information, resources and means of carrying out plans. We have seen that a network gives access to thought-provoking, informative and material resources and that a network changes in the course of an entrepreneurial process. For Brandheia it has become gradually more

important to have access to external networks, as the business has developed. Research has yet to demonstrate that a network in itself increases business output. The contribution of network research to the field of entrepreneurship has been its ability to describe and explain how entrepreneurship depends on a social structure.

This is an important contribution in several respects. Firstly, it highlights how entrepreneurship is dependent on environment; it is more than a question of personal qualities. Secondly, it directs attention to conditions that can change in a developmental goal. This is where we believe network research has an unfulfilled potential. As we have pointed out, network in a strategic perspective is generally a means for the entrepreneur to achieve a goal. But a review of the research shows that the integral nature of a network – working together with the surroundings – makes its significance for the entrepreneur fairly complex. The building of relationships demands time, resources, dialogue skills and an understanding of one's own behaviour. This points towards an understanding of the network as relational processes – as communities.

In summary, looking back to Table 2, this means that in addition to a number of well defined personal characteristics of the businesswoman Mari Lisbeth Finstad, knowledge development through community processes must be said to be the primary driving force in the development of Brandheia, and not its location in a defined cluster of travel and tourism businesses – which is most certainly not the case.

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