What is mobile in entrepreneurship?

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by

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ABSTRACT

This report focuses on the relation between entrepreneurship and different aspects of mobility and provides a basis for further studies. To date the entrepreneurship field has focused little on the role of mobility and the studies that do, have predominantly focused on labour mobility. We argue that entrepreneurship and mobility are intertwined and that limiting the concept of mobility to labour mobility limits our view of the entrepreneurial process.

The study is based on a literature review and interviews with established entrepreneurship scholars. We aim at widening the concept of mobility and we discuss what aspects of mobility could be relevant to entrepreneurship and we discuss how these aspects can be explored further.

We build our analysis on two cornerstones. Firstly, a general framework of entrepreneurship based on known established scholarly work. In this study we view entrepreneurship as creative organising where the entrepreneur interacts with and depends on other people and organizations. Moreover, entrepreneurship is a process. The entrepreneurship process involves; idea generation and development, opportunity identification/creation and resource allocation in a network context. Knowledge is a central part of the entrepreneurial work and we discuss the distinctions between explicit and tacit knowledge and how they relate to mobility.

The other cornerstone in our analysis is a reassessment of the limited previous research that has focused on mobility in association with entrepreneurship. We derive relevant aspects of mobility through a discussion about how the term mobility has been used and what implicit and explicit assumptions about mobility that are made in the literature.

From previous research and our framework we discuss and propose eight aspects of mobility in relation to entrepreneurship: Mobility of people; Mobility of knowledge; Mobility of ideas; Mobility of opportunities; Mobility of resources; Mobility of social relations/networks or Social mobility; Mobility of infrastructure; Mobility of organisations.
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1. INTRODUCTION

In five generations the living conditions in Sweden have progressed from a situation similar to present day Ghana to the welfare state we have today (Rosling, 2007). This progress is built on innovation – that is by doing things in new and better ways (Solow, 1956; 1957). Innovation is strongly interlinked with entrepreneurship. Some would argue innovation and entrepreneurship are synonymous (e.g. Normman, 2008), others would say one is a prerequisite for the other (e.g. Shane & Venkataraman, 2000). Regardless of the specific meaning of the words, the importance of entrepreneurship for economic growth and prosperity is emphasized by both policy makers and academics.

However, looking back through history there is another important factor associated with the creation and dissemination of innovations – mobility of people. Throughout history innovations have been disseminated with the movement of people – conquerors have adopted the innovations of the conquered and vice versa, long distance trade and travels have spread new innovations (c.f. Diamond, 1997). Through mobility, people have been exposed to new cultures, concepts, ideas and innovations. Entrepreneurs have been inspired, seized new opportunities and created new innovations. In retrospect, mobility has been intertwined with progress and development.

Although both mobility and entrepreneurship are associated with the creation and dissemination of innovations, how the two interact is sparsely studied. Studies assessing these entities commonly view mobility as labour mobility; that is how mobility of the labour force affects innovation and entrepreneurship (e.g. Hyytinen & Maliranta, 2008; Bienkowska, 2007; Power & Lundmark, 2004). However, this view of mobility is too narrow to catch all aspects of mobility in the entrepreneurial process.

Mobility can, and we argue should, be viewed as a wider concept. Limiting the mobility concept to physical movement of people, also limits our view of the entrepreneurial process. E.g. in an organizational setting, moving a few people around between different departments in the same building could have a larger impact than moving the whole organisation to a new location, since the former will change who interacts with whom. Thus, this aspect of social mobility, i.e. changes in the interaction patterns, can be as important as the physical movement of people (if not more so).

However, changes in interaction pattern can be accomplished with information and communication technology as well. Innovations like the alphabet, the printing press, the telephone, the computer and the Internet have made the dissemination of ideas over long distances possible without the physical movement of people. Interestingly, the term mobility is often used when referring to technology that allows us to interact with others without having to move ourselves (c.f. Kviselius et al., 2007).

Furthermore, the flow of material and immaterial resources, e.g. commodities, goods and money, is also likely to affect the entrepreneurial process. We believe that there are many other relevant aspects of mobility in an entrepreneurial context. This wider concept could include mobility of ideas, knowledge, organisations and other aspects. Thus the question – what is mobile in entrepreneurship? – deserves attention.
PURPOSE

Mobility and entrepreneurship are two of the main topics for the new established multidisciplinary research and innovation centre, Helix, at Linköping University in Sweden. This report is intended as a first study of the relation between entrepreneurship and mobility and is funded by Helix.

This report provides an open and general framework for studying the relation between mobility and the entrepreneurial process. The report provides a basis for further studies. We aim at widening the concept of mobility and we discuss what aspects of mobility could be relevant to entrepreneurship. However, we exhaust neither all possible aspects of mobility nor all the roles mobility can play; rather we suggest possible ways to explore the relation between the two concepts further.

METHODOLOGY

Aspects of mobility relevant to entrepreneurship can be identified through different approaches, e.g. one could study how entrepreneurship is described or modelled and analyse which entities are mobile in the model; one could scan the literature in the entrepreneurship field for explicitly and/or implicitly used aspects of mobility; or one could simply brainstorm. We have used a combination of primarily the former two approaches with the latter being used rather as a quality assurance measure.

Firstly, we construct a framework for studying entrepreneurship. The framework is a synthesis based on previous research by known and well established entrepreneurship scholars (e.g. Schumpeter, 1942/1992; Gartner, 1988; Baumol, 1990; Shane & Venkataraman, 2000; Johannisson, 2002; and Ardichivili et al., 2003). From our framework we establish aspects of mobility that, at least theoretically should be important to entrepreneurship.

In order not to exclude aspects of the studied relation the framework we provide is based on a broad definition of entrepreneurship and mobility. The framework can be adjusted to specific settings in future research. However, since the field of entrepreneurship is so diversified all possible aspects of entrepreneurship cannot be included in our framework. The definitions and concepts used in our framework are taken from the mainstream of the entrepreneurial field mostly focusing on business creation or opportunity exploitation. Thus, the framework developed might be less suitable for studies of e.g. political entrepreneurship.

Secondly, we reassess the limited previous research that has been done on mobility in association with entrepreneurship. Since this research is sparse we also include research from neighbouring fields such as innovation and regional development. We derive relevant aspects of mobility through a discussion about how the term mobility has been used and what implicit and explicit assumptions about mobility that are made in the literature.

Relevant literature for the framework and the reassessment was gathered through searches in scientific databases and journals, scanning references in identified literature and through discussions and interviews with established entrepreneurship scholars.

Formal meetings and/or interviews have been held with Bengt Johannisson (Professor at Växjö University); Elisabeth Sundin; Magnus Klofsten; Göran Brulin and Per-Erik Ellström (Professors at Linköping University). However, many other colleagues and researchers have been involved in informal discussions regarding the relation between entrepreneurship and mobility.
OUTLINE OF THE REPORT

The report consists of four main chapters. This first chapter is an introductory part, where we present why, how and with what purpose the study was conducted.

In chapter two we review articles in order to build a framework for entrepreneurship. The aim of this chapter is to give readers not familiar with the entrepreneurship field an overview of the field. We single out a few important aspects of entrepreneurship that deserves extra attention: the entrepreneur, the entrepreneurial process, the entrepreneurial opportunity and idea, the entrepreneurial network, knowledge and finally mobility in an entrepreneurial context.

We discuss questions like: who is the entrepreneur? what does the entrepreneurial process look like? if entrepreneurship is a social process, with whom does the entrepreneur interact and how?

The first question is discussed under the heading “The Entrepreneur”. The second question is discussed under the heading “The Entrepreneurial Process”. The third question is discussed under the heading “The Entrepreneurial Network”.

In the third chapter we discuss the theme of this report, what is mobility in an entrepreneurial context? Based on the framework and previous research we derive eight aspects of mobility in relation to entrepreneurship. We discuss these and suggest ways to explore these aspects further.

In the fourth chapter we summarise the report and present the eight aspects of mobility in relation to entrepreneurship in a condensed form.

Readers familiar with the entrepreneurship field might find chapter two elementary and a short look at the definition of entrepreneurship might suffice.
Entrepreneurship has been defined in many different ways both by academics and practitioners (Gartner, 1990). Since the meaning of the word is not self-evident it is important to clearly postulate the specific meaning used. Given that we aim at creating an open and general framework for the entrepreneurial process we will choose a general definition of entrepreneurship. In order to put our definition of entrepreneurship in perspective we will first present a few different definitions and aspects of entrepreneurship that have been proposed by different entrepreneurship scholars.

An archetypical definition of entrepreneurship is the process where a person starts a new business, combining means of production and labour; the process or the output is novel (an innovation); the entrepreneur bears the risk (most commonly financial risk) and contributes to economic growth. A process like the above-mentioned would be included in the entrepreneurship definition of many, if not most, entrepreneurship scholars.

Many scholars have suggested wider definitions of entrepreneurship. E.g. for Gartner (1988), entrepreneurship is about starting new organisations; whereas Collins and More (1970) suggest that entrepreneurship is carrying out new combinations, which could take place within already existing organisations. Schumpeter (1942/1992) separates the inventor, the entrepreneur and the capitalist as three different roles that can be held by one person but also by different people. Furthermore, Schumpeter (1942/1992) argues that the entrepreneurship is intertwined with the capitalist system and that they are prerequisites for each other.

To the contrary, Baumol (1990) argues that entrepreneurship is always prevalent in society; regardless of if it is a feudal, capitalist, socialist or other form of society; but entrepreneurship can be more or less productive/innovative or even destructive e.g. he suggests that e.g. drug dealers and old time warlords should be considered entrepreneurs. Thus, Baumol (1990) limits the definition neither to the capitalist business setting nor to value creation. Although Baumol et al. (2007) strongly suggests promoting the kind of entrepreneurship that is described here as archetypical. In fact, not even novelty, in form of an innovation, is required to be included in the definition of entrepreneurship, according to Baumol (1990). Baumol et al. (2007) contrast innovative entrepreneurship with replicative entrepreneurship. The latter is a term for describing new organisations that merely replicates already existing organisations.

Johannisson (2002) sets out to liberate entrepreneurship “from economic bonds but also from association with radical scientific inventions and quantitative growth” (p 2). Instead he associates entrepreneurship with:

“creative organising and value creation where both the mode of organising (by spontaneity and passion) and the value created (socially better worlds) separates it from instrumental reason and resource efficiency, i.e. phenomena usually associated with management. I also exclude criminal, terrorist and further destructive activities, however creatively organised they may be” (Johannisson, 2002 p. 2)

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1 This statement is based on an assessment of definitions given in 29 influential studies selected by Gartner (1988)
As pointed out earlier we intentionally choose a wide definition of entrepreneurship. In line with Johannisson (2002), we do not want to limit entrepreneurship to the start of businesses or, for that matter, to radical innovation. In contrast to Johannisson (2002) and in line with Baumol (1990) we do not exclude destructive activities. A practical reason for not excluding destructive activities is that what is destructive is a matter of opinion. Arguably most entrepreneurship has both positive and negative consequences e.g. Ford (to use Johannison’s own example) brought cars to the masses, which has had many positive effects but also contributed to vastly increased carbon dioxide emissions (c.f. Rosling, 2007).

Thus, to us entrepreneurship is about creative organising (Johannisson, 2002). The entrepreneur interacts with and depends on other people and organizations (Johannisson & Mønsted, 1997). Creative organising implies that the entrepreneur forms new social constellations (Ibid). This can take place outside or within existing organisations (Sharma & Chrisman, 1999). Finally, entrepreneurship is a process, something that happens over time. The process includes activities such as interacting with customers, suppliers and other important actors (Klofsten, 2002). The entrepreneurial process will be described in more detail under the heading “The Entrepreneurial Process”.

THE ENTREPRENEUR

Entrepreneurs are often seen as the characters driving the entrepreneurial process forward, e.g. Ma & Tan (2006) define entrepreneurs as pioneers, passionate believers, hopelessly optimistic and willing to get their hands dirty to achieve success.

Much research has been directed at establishing what the entrepreneur is like (Gartner, 1988). Efforts have been made to assess entrepreneurs on characteristics such as attitude to risk (e.g. Brockhaus, 1980), locus of control (Durand, 1975), education (e.g. Collins & Moore, 1970), sex, age, ethnicity, association affiliation (e.g. Davids, 1963) and so forth. Gartner (1988) claims that this approach has produced contradictory results and thus failed to achieve consensus on any general entrepreneurial characteristics. This is due to the fact that the entrepreneurship process is diverse and thus will be driven by entrepreneurs with heterogeneous characteristics and backgrounds.

Although it might be difficult to find any general characteristics of entrepreneurs, the person or the people driving the process are important. In fact, the people driving the entrepreneurship process are in focus also in Gartner’s research (Jansson, 2008). There are practical reasons for wanting to spot successful entrepreneurs better than at random. Klofsten (2005) discusses how to build successful entrepreneurial training, the person is as important as the idea (if not more so). In deciding whom to accept for the program spotting the right people becomes important. The problem of choosing the most promising entrepreneurs can also be important issues for entrepreneurship policy programs (c.f. Norrman, 2008).

The people best suited to develop the entrepreneurial process might vary with the different stages in the process (Kimberly & Miles, 1980). Furthermore, different roles might complement each other in the entrepreneurial process (e.g. Schumpeter, 1942/92; Cooper & Bruno, 1977).

So far we have referred to the entrepreneur in singular. In fact entrepreneurial processes are likely to involve several entrepreneurs. Johannisson (2003) argues that entrepreneurship is a collective rather than individual phenomenon. Thus, when we use the word “entrepreneur” we refer to the person or people being the driving forces in the entrepreneurial process. The fact that there can sometimes be several entrepreneurs, who can have complementing traits and
characteristics, contributes to the difficulties of finding any general entrepreneurial traits. In other words the characteristics of the entrepreneur are important but they must be considered in the context of the opportunity, the environment and the other stakeholders.

Thus, no general conclusions can be drawn regarding who the entrepreneur is. Nevertheless, the importance of the person is stressed by practitioners and academics. As becomes clear from the discussion above many scholars believe that the personality of the entrepreneur is important, but the knowledge aspect of the entrepreneur has also been stressed e.g. several scholars have shown that experience contributes to successful entrepreneurship (e.g. Ronstadt, 1985; Utterback & Reiterberg, 1982; Meyer & Goldstein, 1961). Furthermore, there is an implicit assumption that learning can make entrepreneurs more successful, behind entrepreneurship training (c.f. Klofsten, 2005). Thus, the knowledge concept and the way in which knowledge is acquired are worth some extra attention. We will return to the knowledge concept under the heading "Knowledge in an Entrepreneurial Context".

THE ENTREPRENEURIAL PROCESS

Entrepreneurship is about creative organising. The entrepreneur interacts with and depends on other people and organisations. Furthermore creative organising implies that the entrepreneur forms new social constellations, outside or within existing organisations (Sharma & Chrisman, 1999). Thus, entrepreneurship is a process, which takes place over time.

DeTienne (2008) contend that entrepreneurship and the entrepreneurial process involves more than new venture creation. She gives as an example Baron's and Ward's (2004) interpretation that the process includes everything from discovering opportunities to solving unexpected problems while running a new venture. Moreover, she refers to Cardon et al. (2005) who use metaphors to compare the entrepreneurial process to parenting. This includes phases of conception, gestation, infancy, toddlerhood, childhood, growth, and maturity. DeTienne adopts the view of the entrepreneurial process as involving the creation of a new venture. However she does not consider the process to end with creation, but rather with the entrepreneurial exit, i.e. the founding entrepreneur leaving the new venture.

Brockner et al. (2004) describes the process of business venture as containing 5 steps:

1. Idea generation
2. Procuring necessary resources: financial, technological, human etc.
3. Prove the business model, i.e. show that the idea is viable
4. Roll-out phase, production and organizing and resource allocation
5. Maturity, renewal and growth, or decline.

The start of the entrepreneurial process is the perception of an opportunity or the formation of an idea, which is followed by the assessment of available resources, the formation of a new constellation of people and material entities in order to exploit the opportunity or act on the idea (Davidsson et al., 2006). However, during this process the idea is likely to evolve or even change radically (Klofsten, 2005). Thus the early stages of entrepreneurship are recursive processes in which the idea, the resources and the opportunity are repeatedly reassessed (Sarasvathy, 2001).

As the process progresses, the idea and the constellation around it becomes more stable. In a model originally developed for technology based firms, Davidson & Klofsten (2003) call this
state of stability - The Business Platform. However, the model has been used in other business settings as a tool for supporting entrepreneurship (Kirwan et al., 2008).

The platform is reached when the firm has reached acceptable levels in what is referred to as cornerstones. There are eight cornerstones: business idea; product; market; organisation; core group expertise; core group drive/motivation; customer relations; and other relations\(^2\). According to the model the chances of firm survival increases substantially once acceptable levels have been reached in the cornerstones.

Although the business platform was developed for businesses, the idea behind the model is applicable for more general entrepreneurial activities. A more general entrepreneurial process could, analogous to the business model, reach from first conception of the entrepreneurial idea to the consolidation of the idea and the context for which it is intended; where core group drive and expertise; stable access to needed resources, and an adequate level of input and output in the process could be important cornerstones. The original model is visualised in figure 1 below.

Thus in general terms the early stages of the entrepreneurial process stretches from the conception of the entrepreneurial idea to a stage in which the process has reached some level of maturity, which corresponds to what Davidsson and Klofsten calls business platform in a business setting. What signifies this level of maturity is that there is some stability in what is done, how it is done and for whom it is done.

The model does not specify when the entrepreneurship process ends. This could be when the entrepreneurs “stiffen into [...] routine” (Johannisson, 2003), or when the entrepreneur leaves the venture (DeTienne, 2008) or at another point in time. We see no need to take a stance regarding exactly when the entrepreneurial process ends.

As indicated by figure 1, there is a prestart and a post start stage in the entrepreneurial process. The start is usually marked by the start of a business or another action that moves the project

\(^2\) For a richer description of the cornerstones see table 1 page 4 in Davidsson & Klofsten (2003).
from just planning into actually doing things. This is a problem in studying the early stages of entrepreneurship since new businesses or other entrepreneurial activities are difficult to identify before the starting point. Nevertheless, the prestart process has consequences for the post start process and is thus an important part of the entrepreneurial process (Kimberly & Miles, 1980).

THE ENTREPRENEURIAL OPPORTUNITY AND IDEA

Opportunities are not created out of thin air, nor are they just found ready to be seized with no effort (Davidsson et al., 2006). However, entrepreneurship scholars might differ on the relative importance they ascribe to the environmental component of opportunities (i.e. Opportunities are discovered) and the entrepreneurial component of opportunities (i.e. opportunities are created) (c.f. Shane & Venkataraman, 2000 and Ardichivilli et al., 2003). For our framework it is sufficient to note that there is an element of both discovery and creation in entrepreneurial opportunities.

Thus, the environment as well as the entrepreneur will shape the entrepreneurial opportunity. The acts of others will be an important factor in the development of the entrepreneurial opportunity, e.g. other entrepreneurs acting on the opportunity (Shane & Venkataraman, 2000).

Shane & Venkataraman (2000) stress the interrelationship between the entrepreneur and the opportunity. They emphasise that scholars of entrepreneurship must consider them together and not focus one-sidedly on one of them. The lack of regard for opportunities has, according to Shane & Venkataraman, contributed to the difficulties in finding general entrepreneurial traits as discussed under the section about the entrepreneur above.

In search of suitable opportunities the entrepreneur will try ideas out, initially just in theory, perhaps through discussions with friends, family, customers or partners. Later the entrepreneur might act on the idea. However, as stressed before, the idea is likely to change and develop, particularly in the early stages of the entrepreneurial process (Klofsten, 2005).

In practice many entrepreneurs start acting on opportunities although the idea might not be fully developed e.g. an entrepreneur might have a technology but still be searching for the best application; or the entrepreneur might have identified a problem but still be searching for the solution. Ardichivili et al. (2003) categorises opportunities on the basis of the available information about the goals and the means. The least uncertainty exists when you know what problem you are going to solve and how. The model is presented in figure 2.

FIGURE 2: TYPES OF OPPORTUNITIES (ADJUSTED MODEL FROM ARDICHIVILI ET AL., 2003 P. 117)

The upper left cell - where problems and solutions are both unknown - may represent artists, "dreamers" and some designers. We refer to this type of opportunities as Emergent
opportunities. The upper right cell - where problems are known but solutions are not - describes structured problem solving, e.g. product or service development. We refer to this type of opportunities as Pull opportunities. The lower left cell - problems unknown but solutions are available – could be technology transfer from one setting to another, i.e., capability in search of an application. We refer to this type of opportunities as Push opportunities. The lower right cell - where problems and solutions are both known - is about matching known resources and market needs. We refer to this type of opportunities as Opportunity seizing.

Apart from the opportunity itself Ardichivili et al. (2003) name four major factors influencing the process of opportunity recognition and development:

1. **Entrepreneurial alertness:**
   Entrepreneurial alertness is a propensity to be sensitive to entrepreneurial opportunities. This does not imply an active search for opportunities. In fact Ardichivili et al. (2003) differentiate between active and passive search for opportunities, where active search involves the purposeful and systematic search for available opportunities and passive search denotes openness to opportunities without searching actively.

2. **Information asymmetry and prior knowledge:**
   Opportunities are not perceived by everyone at the same time due to different people having different information and different knowledge. Particularly Ardichivili et al (2003) emphasise three major dimensions of prior knowledge: prior knowledge of markets, prior knowledge of ways to serve markets, and prior knowledge of customer problems. The knowledge aspect will be discussed further under the heading "Knowledge in an entrepreneurial context".

3. **Personality traits:**
   This factor is based on research indicating that some personality traits, including risk-taking optimism and self-efficacy, and creativity, are related to successful opportunity recognition (e.g. Krueger and Dickson, 1994 and Krueger and Brazeal, 1994)

4. **Social networks:**
   This factor is primarily built on Hills et al. (1997) and De Koning (1999) who assert that networks are important to opportunity recognition. This factor will be discussed more in detail under the next heading "The Entrepreneurial Network".

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**THE ENTREPRENEURIAL NETWORK**

The entrepreneur depends on and interacts with other people (Johannisson & Mønsted, 1997). The network around an entrepreneur is important to the development of the entrepreneurial process (Aldrich et al., 1987). The entrepreneurial network provides the entrepreneur with material as well as immaterial resources. Johannisson (1978) underlines the importance of a "learning enabling environment". This concept includes the availability of resources e.g. premises, labour, capital and closeness to other businesses. Since all resources seldom are controlled by a single individual and most human interaction have social aspects, social networks become intertwined with more instrumental networks. The latter are based on resource exchanges and legal contracts (c.f. Hammarkvist et al., 1982 and Grossman et al., 2007).

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3 Translation of the Swedish term inlärningsmiljö
Although there seems to be consensus about the driving forces behind entrepreneurial networks being driven by both instrumental processes of resource acquisition and social processes, many scholars tend to be biased towards one of the two (Grossman et al., 2007).

Thus, the driving forces in developing entrepreneurial networks are not exclusively instrumental, nor exclusively social. Ties, i.e. connections in the network, can then be social or based on dependence created by instrumental exchange or in practice as a combination of the two. From a social perspective McPherson, Smith-Lovin, & Cook (2001) found homophily to be a formative mechanism in networks. Homophily seems to play a role also in the formation of entrepreneurial teams (Ruef et al., 2003).

Furthermore, the importance of weak and strong ties has been under debate since Granovetter’s (1973) seminal paper (Grossman, 2007). It has been argued that weak ties play an important role in bridging networks of more closed networks with redundant and strong ties (Granovetter, 1973). Other scholars emphasize the importance of strong ties when uncertainty, and need for quality are high (e.g. Uzzi, 1997), or in the early stages of entrepreneurship (Aldrich, 1999; Larson & Starr, 1993; Walker, Kogut, & Shan, 1997).

However, even for more established firms the cultivating of strong ties has been emphasised. Hammarkvist et al. (1982) advocate the cultivation of strong ties in firm relations. They suggest that intra firm exchanges can regard: technology and equipment; coordination of activities; knowledge; contracts and agreements; social contacts. Thus, entrepreneurial networks can be assessed both as interpersonal networks, intra organisational networks and arguably as a combination of the two.

The strength of the ties in the entrepreneurial network could be assessed both from a social perspective where trust, commitment and friendship are important aspects (Aronson et al., 1998); and from an instrumental perspective where the attributes of exchanged resources such as importance of the resources and if the resources could be substituted for something else (Yuchtman & Seashore, 1967) are important aspects. Furthermore the relationship between two nodes is not necessarily symmetrical i.e. part A can be heavily dependent on part B, whereas part B is not dependent on part A.

The structure of the entrepreneurial network is likely neither a perfect hub function of the entrepreneur, nor a network with all the nodes being connected with all other nodes with equally strong ties (Vandekerckhove & Dentchev, 2005). Thus, we are likely to find gatekeepers, i.e. nodes that become valuable for their contacts with other nodes.

Although we can theoretically establish snapshots of the network structure one must bear in mind that entrepreneurial networks by definition are novel and developing, what Johannisson (2002) refers to as in a state of flux. Thus change in the form of mobility of people, resources, knowledge, ideas and structure are inherent in entrepreneurial networks.

Networks have also been emphasised in a similar, although not identical, context – clusters. Porter (2000) defines clusters as:

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4 Homophily refers to similarity between people.

5 Yuchtman & Seashore (1967) suggest five attributes of resources: Liquidity, Stability, Relevance, Universality and Substitution.
“Clusters are geographic concentrations of interconnected companies, specialized suppliers and service providers, firms in related industries, and associated institutions (e.g. universities, standards agencies, and trade associations) in particular fields that compete but also cooperate.” (Porter, 2000 p. 253)

Examples of clusters are Silicon Valley in California or Kista in Stockholm. These clusters are often seen as particularly entrepreneurial (Porter, 2000 and Guiso & Schivardi, 2006). Birch et al. (1997) underlines the importance of infrastructure for the development of clusters.

Thus, clusters are also networks of people and organisations. However, in Porters definition they are geographically concentrated, which is not necessary for entrepreneurial networks in general. Furthermore, cluster in Porters meaning are generally larger entities then entrepreneurial networks referred to by e.g. De Koning (1999) and Aldrich et al. (1987).

KNOWLEDGE IN AN ENTREPRENEURIAL CONTEXT

Knowledge is a central part of entrepreneurial networks. However, knowledge is a wide concept that has many dimensions e.g. knowledge can be an explicit resource (e.g. access to a database); it can be an tacit resource (when there is a need for a certain competency); it can be part of the structure (e.g. when knowledge about IT facilitates or inhibits interaction); it can be a recursive function of the network itself (e.g. knowledge about the network). Thus there are many dimensions of knowledge that are relevant to entrepreneurial networks and the entrepreneurial process.

However, it is not required that the entrepreneur has all knowledge himself since it can be obtained elsewhere in the network, but he needs access to it. Consequently personal or organizational networks play an important role in accessing knowledge. According to Holdt Christensen (2007), lack of networks implies no opportunity to access knowledge. Besides access to the network, Singh (2008) add mobility as important for knowledge flow, especially mobility of highly educated labour (Graversen et al., 2002).

Knowledge is a very general term and it is the entrepreneurial process that decides what kind of knowledge that is required. However, all knowledge can be divided in two dimensions; explicit and tacit knowledge.

There are vital distinctions between tacit and explicit knowledge (Polanyi, 1958, 1966; Nonaka, 1990; Nonaka and Takeuchi, 1995). Tacit knowledge is personal, acquired from experience and active reflection (Kakabadse, 1991). Tacit knowledge is very difficult to transfer unless it is translated and formalized into words, numbers or pictures that can be understood by others (Polanyi, 1966). However, there are two categories of tacit knowledge; knowledge that has not yet been formalized (Zander and Zander, 1993) and knowledge that cannot be formalized (Grant and Gregory, 1997). The first category implies that the tacit knowledge can be formalized and transferred to explicit knowledge. Hence explicit knowledge is identified as expressed knowledge, i.e. patents, scientific articles, books etc., that can be shared. It is acquired by active search through education, repositories and work context (Kakabadse et al, 2001). But, to assimilate this explicit knowledge it must be tacitly understood and applied. Therefore, “all knowledge is either tacit or rooted in tacit knowledge” (Polanyi, 1966).

To deeper understand the width of tacit knowledge Nonaka and Takeuchi (1995) expand Polanyi’s (1966) interpretation of tacit knowledge further into two dimensions, technical and cognitive. The cognitive dimension encompasses ‘mental models’ (Johnson-Laird, 1983) such as schemata, paradigms, perspectives, beliefs, images of reality and visions of the future. The technical
dimensions are described as concrete “know-how”. It is the craft and skills that can be learned only in a network of relationships e.g. the parent – child and the master – apprentice relationship. It is based on the cultural norms and beliefs and plays an important role in management effectiveness (Kakabadse et al, 2001) since the managers need to understand employees, customers, suppliers and other stakeholders and be able to act on that knowledge in appropriate ways.

MOBILITY IN AN ENTREPRENEURIAL CONTEXT

The purpose of this report is, as addressed in the introduction, to find new aspects of mobility relevant to the entrepreneurship field. Since the term is rarely used in entrepreneurship research this section will primarily be based on research in related fields such as innovation and regional development, where the term mobility has become popular when discussing innovation systems.

Previous studies have predominantly focused on mobility of labour (e.g. Bienkowska, 2007; Power & Lundmark, 2004; Michie & Sheehan, 2003; Andersson and Tegsjo, 2006b; Graversen et al., 2002). Studies show that mobility of labour increases during a business boom (c.f. Bienkowska, 2007). One reason for this is that new job opportunities arise. Generally the labour market seem to be more geographically mobile in the new world e.g. in the USA, as compared to the old world e.g. Europe (Cheshire & Malecki, 2004). A factor that can affect labour mobility is inequalities between regions (Ibid) i.e. people moving from poorer to richer regions or from less innovative regions to more innovative regions.

The Swedish workforce commute more now than in the past, in the sense that more people work in local municipality where they do not live (Statistics Sweden, 2005c). Reasons for this might be better infrastructure and communications. In addition, since the popularisation of the Internet, there seems to be an increase in the number of people who work at a distance. In 1997, 7% of the Swedes regularly worked at a distance whereas that number was 11% in 2003/2004 (SIKA, 1998,2006). Distance working is most common among people in major cities with high incomes (SIKA, 1998).

Seen on an aggregate level there is a dramatic increase in travelled distance within Sweden, compensating for the increase in population the average distance has increased with 450% between 1950 and 2006 (SIKA, 2008; Statistics Sweden, 2008). Furthermore, people seem to initiate more contacts using information and communication technology (ICT, e.g. Phones and Internet) (c.f. SIKA, 1998 and SIKA, 2006). People who travel more seem to initiate more contacts using ICT (SIKA, 1998).

On the organizational level, labour mobility often occurs due to increases or reductions of personnel in the organization, but also due to strategies and guidelines (Bienkowska, 2007), e.g Graversen et al (2002) mention temporary exchanges of staff as a tool to increase the dissemination of knowledge. However, not all attempts at spreading knowledge would require employees changing workplaces, Graversen et al. (2002) suggests channels such as co-operations, various types of networks, buyer-supplier relationship and R&D collaborations.

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6 A comparison between these two reports should be done with some caution due to the different methodologies used.
There are both positive and negative aspects of labour mobility in an organisational context. Bienkowska (2007) suggests that labour mobility increases knowledge transfer as a positive result but also that labour mobility can cause dissemination of an organisation's confidential information. The latter might damage the particular organisation, but it might benefit other organisations. Labour mobility may also imply costs for training and education (Power & Lundmark, 2004). Moreover, too much labour mobility can lead to reduced loyalty, short term strategies and ultimately, reduction of innovations (c.f. Michie & Sheehan, 2003).

Analysing previous research Power and Lundmark (2004) suggest three effects associated with labour mobility:

1) Labour mobility is likely to speed up knowledge dissemination and thus learning processes.

2) Labour mobility is likely to create new combinations of knowledge and ideas embodied in people.

3) Labour mobility is likely to create bonds/links between firms, workplaces and institutions and thereby be an active part of cluster and network building.

As becomes clear from the discussion above the mobility of people and in particular labour, has been in focus when relating mobility to entrepreneurship, innovation and economic growth. However, the term mobility is also used in the entrepreneurship field in another context – social mobility. In this context studies has been made trying to assess the socioeconomic effects of entrepreneurship (e.g. Quadrini, 1999). Possibilities of improving socioeconomic status are seen as an incentive for productive entrepreneurship (Baumol et al., 2007).

However social aspects of mobility has been mentioned also in relation to labour mobility, e.g. Power & Lundmark (2004) point out that changing employer often results in lost social contacts and efforts in building new social relations for the employee. Social capital is also commonly referred to in entrepreneurial contexts (e.g. Davidsson & Honig, 2003), who assess the effects of contacts and networks on entrepreneurial activities and success. Social capital can influence e.g. possibilities to acquire capital or to close deals. Social aspects of mobility are thus related both to incentives for engaging in entrepreneurship and for underlying parameters affecting the success of ventures.
3. ASPECTS OF MOBILITY IN ENTREPRENEURSHIP

In this report we aim at widening the concept of mobility through establishing aspects of mobility related to entrepreneurship. Above we have provided a framework for studying entrepreneurship. The framework is a synthesis based on previous research by known and well-recognized entrepreneurship scholars. It is developed through discussions with established entrepreneurship scholars. The framework emphasizes that entrepreneurship should be viewed as a process and that entrepreneurship is a social phenomenon always including interaction between people.

Through our framework it is obvious that entrepreneurship requires some form of mobility e.g. ideas and knowledge are disseminated (move) through the network; and resources and people are organized in new ways, which will include some mobility of these entities. While all entrepreneurship is associated with some form of mobility, all mobility is not associated with entrepreneurship.

We attempt widening the concept of mobility relevant to the entrepreneurial process in two ways: Firstly, we reassess the previous research described above to identify explicit or implicit aspects of mobility. Secondly, from our framework we establish aspects of mobility that, at least theoretically should be important to entrepreneurship. Thus, from previous research and our framework we derive aspects of mobility that we believe could be fruitful for studies of entrepreneurship.

ASPECTS DERIVED FROM PREVIOUS RESEARCH ON MOBILITY AND ENTREPRENEURSHIP

Although most previous research focuses on the mobility of people or more specifically labour, there are implicit assumptions about the effects of this corporeal mobility on other forms of mobility. E.g. Power and Lundmark (2004) suggest that mobility of labour will affect dissemination of knowledge and ideas, which are two entities highly relevant for entrepreneurial processes. Thus, although the term mobility has not been used for knowledge and ideas the implicit assumption is that these entities are mobile.

Additionally, Power and Lundmark (2004) suggest that labour mobility will affect social relations through creating new ties between people and organisations. Quadrini (1999) refers to social mobility – that is how entrepreneurship affects the socioeconomic status of the entrepreneurs. Here we talk about mobility in a social sphere. This could refer to how relations are built or dynamics within social groups. Furthermore, the possibilities of moving up the social ladder could affect incentives for entrepreneurship.

Previous research on corporeal mobility related to the entrepreneurship field has predominantly used the concept of labour mobility. However, it would be premature to exclude the possibility that other forms of mobility of people are associated with similar effects e.g. collocation of supplier and customer could contribute to the dissemination (mobility) of ideas and knowledge. People in general, moving to new places could affect social mobility as well as mobility of ideas and knowledge. Thus we suggest that labour mobility should be widened to include also other categories of mobility of people.
Finally Birch et al. (1997) suggests that *infrastructure* is important to the development of entrepreneurial clusters. Infrastructure can be the foundation for entrepreneurial clusters e.g. lumber mills by a river or a village becoming an entrepreneurial centre due to becoming a railway hub. More recently we have seen how the spread of the Internet has given rise to new business opportunities and facilitated the spread of ideas and knowledge (c.f. Härén, 2007). Thus, mobility of infrastructure is interrelated with other kinds of mobility discussed in this section and consequently also with entrepreneurship.

In summary, from previous research we derive five aspects of mobility that could be relevant to entrepreneurship: Mobility of people, mobility of knowledge, mobility of ideas, mobility of infrastructure and social mobility. These aspects will be further explored under the heading "The Eight Aspects of Mobility in Entrepreneurship".

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**ASPECTS DERIVED FROM OUR FRAMEWORK**

Our framework suggests a few key concepts in relation to entrepreneurship: Opportunity, idea, knowledge and networks. In the previous section we have already touched upon two of these – ideas and knowledge. Thus we focus the discussion in this section on the other two.

As we have mentioned there is an environmental aspect of opportunities (what is discovered) and an entrepreneurial aspect (what is created). The latter is rather the result of action from the entrepreneur and thus a consequence of mobility caused by the entrepreneur. However, this perspective on opportunities implies that opportunities are developed by the entrepreneur and thus move from one state to another. The former is the existence of opportunities in the environment, e.g. what Shane and Venkataraman (2000) refer to as situations where new goods, services, raw materials, and organising methods can be introduced and sold at greater than their cost of production. More generally we can talk about unmet needs or changes in society that opens up for new ways of organising.

According to this perspective on opportunities, they are not stable but highly mobile – they will appear and vanish, as in the expression – a window of opportunity. Societies can be ready for certain ideas or inventions at a particular time e.g. writing has been invented many times but prevailed only when there was a need for it e.g. keeping track of goods and services (c.f. Diamond, 1997). Thus, the environmental sides of opportunities are mobile and related to the development in society.

The other concept we intend to discuss in this section is networks. We modelled entrepreneurial networks as consisting of nodes of people and organisations interconnected by social and instrumental ties. As discussed above, people are mobile and their movements are relevant to entrepreneurship. With globalisation, not only people but also organisations have become more mobile. Although *mobility of organisations* could be seen as the collective mobility of people, we argue that it should be seen as a separate aspect of mobility. As firms or workplaces are bought and sold, organisations and organisational culture can move without much movement of people. Furthermore, when workplaces move the employees do not always follow.

The social aspect of networks ties is important (Grossman et al., 2007) and further underlines the importance of social mobility as discussed above. We also refer to instrumental ties in entrepreneurial networks, i.e. ties created by interdependence on each other's resources. The strength of these ties is affected by e.g. how important and replaceable theses resources are (Yuchtman & Seashore, 1967). Thus the ties in an entrepreneurial network can depend on the resources controlled by each node in the network but also on the inflow and outflow of
resources to and from the network. Consequently, **mobility of resources** is important to entrepreneurial networks and thus to entrepreneurship.

However, resources are a wide concept that could include material resources such as buildings, tools and commodities as well as immaterial resources such as knowledge and status. The same entity can thus be included in more than one aspect e.g. knowledge is incorporated under the aspect knowledge but could also be seen as a resource and status could be included in social relations but also in resources.

In summary from previous research and from our framework we derive the following eight aspects of mobility:

1) Mobility of people
2) Mobility of knowledge
3) Mobility of ideas
4) Mobility of opportunities
5) Mobility of resources
6) Mobility of social relations/networks or Social mobility
7) Mobility of infrastructure
8) Mobility of organisations

We will explore these aspects further under the heading “Eight Aspects of Mobility in Entrepreneurship”.

**OTHER POSSIBLE ASPECTS**

The list above is not exhaustive; it is only the result of exploring our framework and previous research considering aspects mobility in an entrepreneurial context. There are other ways of categorising mobility. E.g. Inspired by Lefebvre (1974/1991) one could suggest three dimensions of mobility: (1) mobility in physical space, (2) mobility in social space and (3) mobility in mental space. These three spaces interact. Mobility in one is likely to induce mobility in the others. One could categorise our aspects in these dimensions. However, many aspects would surely fit in more than one dimension.

There are also different aspects of mobility that our approach did not capture. E.g. one could consider emotional aspects of mobility. Assessing how emotions change and develop over time has been done in other fields e.g. management of information systems (Askenäs, 2004). In an entrepreneurial context one could assess how emotions of the entrepreneur or other actors in the process change and develop. This is just one aspect not captured by our method and there are surely other conceivable aspects of mobility in relation to entrepreneurship.

However, we do not claim to present the only categorisation of relevant aspects of entrepreneurship or all possible aspects. The rest of the discussion will focus on the eight aspects of mobility derived above.
THE EIGHT ASPECTS OF MOBILITY IN ENTREPRENEURSHIP

As indicated by the example of knowledge above the aspects of mobility proposed here are interrelated. Not only in the sense that the same entity can be included in more than one aspect but also in the sense that mobility in one aspect is likely to be related to mobility in other aspects e.g. mobility of organisations would often imply mobility of people, which in turn could be related to mobility of ideas and knowledge. Consequently some of the discussion below could be placed under more than one aspect. In those cases we have put the discussion under the aspect we find most suitable and in some cases referred to the discussion under other aspects.

PEOPLE

To date the most frequently used approach of relating mobility of people to entrepreneurship is to assess labour mobility (e.g. Bienkowska, 2007; Power & Lundmark, 2004; Andersson and Tegsjo, 2006b; Graversen et al., 2002), e.g. employee turnover in entrepreneurial environments and comparing that to employee turnover in less entrepreneurial environments. However, mobility of people could include more than labour mobility. In the same quantitative spirit one can relate entrepreneurship to other forms of corporeal mobility e.g. immigration or urbanisation.

Although these quantitative measures can give us a general picture, they cannot tell us how mobility of people contributes to or impairs entrepreneurship. Thus, qualitative studies could be directed at identifying how mobility of people affects entrepreneurship. It is important to focus both on the positive effects (c.f. Bienkowska, 2007) and the negative effects (c.f. Michie & Sheehan, 2003).

Furthermore, mobility of people can be assessed through studying other types of corporeal mobility e.g. what influences the entrepreneurs’ choice of location and travelling patterns and what consequences does the choice have. Previous research in the innovation diffusion field has shown that early adopters of innovations generally are more cosmopolitan i.e. travel more and interact with more people, than late adopters (Rogers, 2003). Could similar behaviours, i.e. travelling and interacting, benefit opportunity recognition?

Mobility can also serve as an incentive for entrepreneurship both for those who want to leave their region or country and for those who want to stay; e.g. many entrepreneurial ventures have been started so that the entrepreneur could avoid moving from his or her home region

KNOWLEDGE

Knowledge is the key to business success (Chen et al., 2006). As discussed earlier explicit knowledge is transferred every day while tacit knowledge is difficult to transfer due to its nature, i.e. it is difficult to formalize. However, explicit knowledge is not always easily understood. In most cases you need a base of knowledge (explicit and tacit) from where you can start the discussion. This implies that what is explicit knowledge to some people might not be so for others, which affects the mobility of knowledge. Moreover, the mobility of knowledge in a network is dependent on a joint framework. To profit from new knowledge we need some overlapping knowledge on an adequate level

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7 For an example of this read about how the glass artist Mats Jonasson became an entrepreneur and turned the local factory in Målerås (Sweden) threatened by close down, into a profitable business (Lundmark, 1996).
between the transferor and receiver. On the other hand, if our knowledge bases are completely overlapping there will be no knowledge transfer at all.

The mobility of tacit knowledge is challenging, it takes time and energy. Most efficiently, tacit knowledge is transferred through teamwork or traditionally from parents to child or from master to apprentice. The tacit knowledge can facilitate the understanding of a problem and hence, the ability to use the tacit knowledge can be seen as an enabler for innovations. Yet the area of tacit knowledge transfer is relatively sparsely investigated (Li-Hua, 2003).

Based on the literature, we consider that the entrepreneur needs access to the idea, which is obvious, but he also needs knowledge about the network, i.e. who knows who and who knows what and what knowledge is missing as well as knowledge about how to manage and administer people and organisations. Since the entrepreneur is the manager of the entrepreneurial process, he needs knowledge about resource requirements as well as when the opportunity arises. The entrepreneur is thus dependent on the network’s willingness to share knowledge (Holdt Christiansen, 2007).

Depending on the nature of the entrepreneurial work the need for knowledge differs. For example, the entrepreneurial process of business development needs knowledge in the area of products/services, administration and market. As the entrepreneur is dependent on the network’s willingness to share knowledge, the entrepreneurial process is dependent on the entrepreneur’s willingness to share knowledge.

**IDEAS**

Ideas spread in similar ways as do knowledge. As with knowledge the dissemination of ideas is dependent on a frame of reference e.g. spreading the idea of boiling water to make it safe to drink is vastly facilitated if the concept of germs and parasites are familiar to the “receivers” of the idea (Rogers, 2003). However, ideas are not just existing entities that are adopted or rejected. The change of ideas as they spread has been studied in the field of memetics (c.f. Blackmore, 2008).

The field builds on Dawkins (1976) concept of memes i.e. cultural replicators. In memetics they study how these ideas (memes) are spread among humans but also how memes “mutate” and change and how this leads to evolution of ideas. However, what we usually refer to as an idea can be broken down into sub-ideas e.g. the idea behind IKEA – selling furniture that the customer assembles – requires an idea about selling, customer, furniture and assembly. Thus what we refer to as ideas is in fact systems of ideas and when we talk about a new idea it is just a part of that system that is added or exchanged for something else.

As suggested by Power & Lundmark (2004) labour mobility can contribute to the combination of ideas into new ideas. Arguably other kinds of mobility of people can also have this effect. Furthermore, Härén (2007) asserts that the rise of the Internet substantially contributes to the generation and dissemination of ideas. Klofsten (2005) emphasise that ideas change during the entrepreneurial process and he underlines the importance of not taking the idea behind a venture as a given and stable entity in the early stages of the entrepreneurial process.

Idea generation can be measured quantitatively through the number of patents filed for by organisations or people (Madsen, 2008; Pessoa, 2005). However, it is not only the creation of ideas that is important but also the dissemination e.g. the invention of wired transmission of speech was developed by different entrepreneurs in different countries, i.e. the idea spread and
contributed to entrepreneurship in new countries. Thus, replicative entrepreneurship (Baumol et al., 2007) is also part of this aspect of mobility.

**OPPORTUNITIES**

As described in the framework, there are two components of entrepreneurial opportunities – the existence of opportunities in the environment and the creation of opportunities by entrepreneurs. Thus there are two ways of looking at the mobility of opportunities. On the one hand we can view opportunities as created and then follow the development of the opportunity as the entrepreneurial process progresses.

On the other hand we can view opportunities as something that exists in the environment and then study how and when opportunities are discovered and acted upon by entrepreneurs. Since it lies in the nature of opportunities that they are not discovered by everyone at the same time (Shane & Venkataraman, 2000), this type of studies are likely to be conducted retrospectively.

Laws, regulations, technological advancement, income distribution and culture are examples of factors that are likely to shape the environmental aspects of opportunities and consequently affect how entrepreneurs act (c.f Baumol, 2004). People tend to be less alert to opportunities in environments familiar to them; e.g. newly employed people often spot more opportunities in the organisation than do people who have been employed for a long time (c.f. Lundmark & Westelius, 2006). There can be many reasons for this e.g. newly employed people may have a different frame of reference and thus see opportunities that are hidden to people who have become institutionalised; or newly employed people may lack vital understanding of the organisation and thus fail to see obstacles to change.

Mobility might have different effects on the two components of opportunities e.g. in turbulent environments opportunities could appear more frequently but they might not be easier to create.

**RESOURCES**

Globalization has made physical assets as well as monetary capital more mobile. It is clear that movement of resources from one place to another can have profound consequences for people e.g. the closedown of a factory in Sweden and opening of a corresponding one in China, can lead to the movement of people both between and within the countries. These types of mobility can be seen as results of the exploitation of entrepreneurial opportunities, if one uses the same definition of opportunity as Shane & Venkataraman (2000). As described above, they define entrepreneurial opportunities as situations where new goods, services, raw materials and organizing methods can be introduced and sold at greater than their cost of production. With this definition, the availability or shortage of resources strongly influences the presence of entrepreneurial opportunities.

However resources are also fundamental to understanding instrumental ties in entrepreneurial networks. As resources become standardised and tradable over longer distances one could argue that there is a process of commodification, i.e. many resources become less unique and thus weakens the instrumental ties they create. Put another way, what Yuchtman & Seashore (1967) refer to as liquidity, universality and substitutability of resources, increase. Consequently, resource mobility could have a weakening effect on some instrumental ties. However, the opposite may be equally true e.g. when resources are standardised and imported
from other countries, local business can form stronger ties to promote regional products e.g. a
restaurant selling only regional food.

Certainly one can argue that available resources will contribute to entrepreneurship e.g. through
available venture capital. To the contrary, as in the idiom “necessity is the mother of invention”,
one can argue that scarce resources will contribute to entrepreneurship. An example of this is
when entrepreneurs in Uganda created a system for transferring money via cell phones that
substituted for an inadequate banking infrastructure (Chipchase, 2007).

Brockner et al. (2004) claim that procuring necessary resources, e.g. financial, technological, and
human, is central to the entrepreneurial process. Consequently, the necessary resources must be
mobile, i.e. resources move not only in and out of the network but also within the network.

Social aspects of mobility includes studies on how interaction patterns between people and
organisations change over time. Most of the other aspects of mobility are understood better
when seen from a social network perspective e.g. ideas and knowledge are disseminated
through social interaction; infrastructure can facilitate or inhibit social interaction; people and
organisations are part of social networks; opportunities are discovered and created in social
networks; finally resources are often valued through social processes. Thus since
entrepreneurship by our definition is a social phenomenon social networks link all the other
aspects of mobility together.

Also for this aspect one can focus on a macro perspective such as how socioeconomic status is
affected by entrepreneurship (e.g. Quadrini, 1999). On the other hand one can also focus more
narrowly on how interaction patterns change in entrepreneurial networks (e.g. Elfring &
Hulsink, 2007).

An important aspect of entrepreneurial networks is the strength of the ties. In our framework
we divided the ties in two types – social and instrumental. There is reason to believe that
mobility can affect both the strength and creation of these ties.

Mobility of people, from one social context to another, increases the chances of new relations i.e.
new ties. But if the change is long term, the possibilities of upholding ties to previously acquired
nodes (people/organisations) or even entire networks can be reduced. Thus there is reason to
believe that when strong value is generated by the present network the propensity to move
would be reduced. This has been found to be true on firm level; Knoben & Oerlemans (2007)
found that firms with strong ties to local partners are less likely to relocate.

Consequently, in a context of moving between social contexts one could hypothesise that strong
ties could reduce mobility, and mobility could reduce the strength of the ties but also increase
the number of ties. Furthermore as discussed above, mobility of resources can affect the
strength of instrumental ties.

Possibly one can make analogies between entrepreneurial clusters (in the meaning used by
Porter, 2000) and entrepreneurial networks (in the meaning used by Aldrich et al., 1987). Porter
(2000) argues that both material resources and immaterial resources are important in cluster
creation. He also points out that under certain circumstances clusters can inhibit innovation; it
can lead to groupthink and suppress new ideas. Thus a culture that embraces change and
innovation is an important factor in innovative clusters (Birch et al. (1997) c.f. Rogers, 2003).
This might be equally true for entrepreneurial networks and it is in line with Ardichivili et al. (2003), who argue that social networks are pertinent to opportunity discovery and creation.

Furthermore, successful entrepreneurial clusters are signified by high mobility of knowledge, ideas and people within the cluster but also new input from outside the cluster (Bienkowska, 2007). A possible reason, mobility within a cluster can be more advantageous than mobility to and from clusters, is that mobility within the cluster allows for greater possibilities to upholding old ties while creating new ties, thus creating bridges between networks (Granovetter, 1973). Analogous to this the social and geographical dispersion of entrepreneurial networks might be an important parameter.

**INFRASTRUCTURE**

With infrastructure we mean basic facilities needed for the functioning of a community or society such as transportation systems e.g. airports, railroads and highways; and communication systems e.g. historically telegraphs and more contemporary Internet accessibility. Possibly this aspect of mobility in relation to entrepreneurship can be studied in retrospect e.g. through measuring entrepreneurship directly and indirectly associated with the spread of new infrastructure.

Furthermore, this aspect is closely associated with how communication takes place in entrepreneurial networks e.g. how ties are affected by physical distance, and to what degree modern communication channels compensate for physical distance in tie creation and development.

As becomes apparent with the popularisation of the Internet, social and mental aspects of the infrastructure might be as important as physical aspects of it (Lundmark et al., 2008). In other words, although people might have physical access to Internet they might not use it due to lack of knowledge, awareness or social norms.

Although there are many interesting facets of the relation between entrepreneurship and infrastructure we will focus the rest of this section on the topic of modern information and communication technology (ICT) and how it affects the possibilities of creating sustaining ties.

Modern information and communication technology (ICT) can sustain ties even when people are far apart (Mascheroni, 2007). Nevertheless, it is clear that ICTs have not made corporeal movement obsolete (Urry, 2002). In fact, we travel more than ever before (SIKA, 2008; Tegsjö, 2004; Statistics Sweden, 2005c).

It would be premature to draw the conclusion that there is, generally, a negative relation between the use of ICT and corporeal mobility. On the contrary, there are several reasons for a positive relation between the use of ICT and corporeal mobility:

1) People who are cosmopolitan, i.e. travel much, have a propensity to adopt new innovations earlier (Rogers, 2003)

2) People who travel much have a higher need to keep in contact with people at different locations, thus would benefit more from the use of ICT.
3) People who keep in contact with people in different locations have stronger incentives to travel to meet these contacts “in real life”.

4) The fact that ICT makes it easier to keep in contact might make the thresholds to moving lower, e.g. accepting a job in another city or country is less problematic if one can easily keep in contact with friends and family through affordable technologies.

Having said that there are also situations where ICT can substitute for corporeal movement e.g. distance working (c.f. Davenport & Pearlson, 1998) and videoconferences. ICT could also be a tool to sustain larger networks through making communication cheaper e.g. it is easy to send e-mail to multiple recipients (c.f. Lundmark & Westelius, 2008). But there are also several applications specifically aimed at sustaining large networks e.g. facebook and linkedin.

The increased use of ICTs (Statistics Sweden, 2004a; 2004b; 2005a; 2005b) combined with increased travelling (SIKA, 2008; Tegsjö, 2004; Statistics Sweden, 2005c) suggests that people sustain larger social networks, perhaps at the cost of the strength of the ties (Granovetter, 1973). If so that would have implications for entrepreneurship since it is dependent on the networks in which it takes place (Aldrich et al. 1987; Hoang & Antoncic, 2003).

ORGANISATIONS

Like people organisations can be nodes in entrepreneurial networks. But unlike people organisations are social networks themselves. These social networks can be more or less entrepreneurial. Entrepreneurship within organisations is sometimes referred to as intrapreneurship (e.g. Antoncic & Hisrich, 2001) and then focus on entrepreneurial behaviours by firms or people within firms.

According to Baumol et al. (2007) the existence of large corporations that can contribute with their extensive resources to emerging entrepreneurial ventures, is crucial to innovation and economic growth.

“A small set of entrepreneurs may come up with the “next big things,” but few if any of them would be brought to market unless the new products, services, or methods of production were refined to the point where they could be sold in the marketplace at prices such that large numbers of people or firms could buy them. It is that key insight that led us to the conclusion that the best form of “good capitalism” is a blend of “entrepreneurial” and “big-firm” capitalism.” (Baumol et al., 2007 Preface IX)

Thus the presence or absence of organisations can affect the conditions for entrepreneurship. Firm movement into new markets can be an indicator of organisational entrepreneurship. Furthermore, mergers and acquisitions can not only extend organisations but also create or inhibit opportunities for intrapreneurs within the merging organisations.

The importance of entrepreneurial cultures has been underlined (e.g. Porter, 2000). A related issue is to what extent entrepreneurial firms are entrepreneurial because of an entrepreneurial culture and to what extent they are entrepreneurial due to entrepreneurial individuals.

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8 In real life (IRL) is a term used by internet users to describe actual meetings face to face.

9 These are two web applications for keeping in touch with friends and business associates see www.facebook.com and www.linkedin.com.
4. CONCLUSION

In this report we have studied the relation between entrepreneurship and mobility. Our aim has been to widen the concept of mobility through establishing aspects of mobility relevant to the entrepreneurial process.

Based on previous research and the presented framework we have proposed eight aspects of mobility in relation to entrepreneurship:

1) Mobility of people
2) Mobility of knowledge
3) Mobility of ideas
4) Mobility of opportunities
5) Mobility of resources
6) Mobility of social relations/networks or Social mobility
7) Mobility of infrastructure
8) Mobility of organisations

Mobility of people
To date this aspect has primarily been assessed in the form of labour mobility. We suggest that mobility of people should be assessed also in other forms e.g. mobility of people could include effects of immigration and urbanisation on entrepreneurship. Furthermore, mobility of people can include the mobility of entrepreneurs e.g. what influences the entrepreneurs’ choice of location and travelling patterns.

Mobility of knowledge
Knowledge is fundamental in the entrepreneurial process and knowledge needs to be shared to increase the number of innovations as well as innovation heights. Knowledge is divided into explicit and tacit knowledge and the dissemination conditions for the two are very different. While explicit knowledge can be transferred by books tacit knowledge comes by experience.

Mobility of ideas
Idea generation has been measured quantitatively through the number of patents filed for by organisations or people (Madsen, 2008; Pessoa, 2005). However, ideas are not just existing entities that are adopted or rejected, they change as they spread. What we refer to as ideas is in fact systems of ideas and when we talk about a new idea it is just a part of that system that is added or exchanged for something else.

Mobility of people contributes to the combination of ideas into new ideas. Furthermore, Härén (2007) asserts that the rise of the Internet substantially contributes to the generation and dissemination of ideas. Klofsten (2005) emphasise that ideas change during the entrepreneurial
process and he underlines the importance of not taking the idea behind a venture as a given and stable entity in the early stages of the entrepreneurial process.

**Mobility of opportunities**
Opportunities are fundamental to the entrepreneurial process. There are two components of entrepreneurial opportunities – the existence of opportunities in the environment and the creation of opportunities by entrepreneurs. On the one hand we can view opportunities as created and then follow the development of the opportunity as the entrepreneurial process progresses. On the other hand we can view opportunities as something that exists in the environment and then study how and when opportunities are discovered and acted upon by entrepreneurs. Mobility might have different effects on the two components of opportunities e.g. in turbulent environments opportunities could appear more frequently but they might not be easier to create.

**Mobility of resources**
The availability or shortage of resources strongly influences the presence of entrepreneurial opportunities. However resources are also fundamental to understanding instrumental ties in entrepreneurial networks. We argue that globalisation and the following commodification of resources can have both strengthening and weakening effects on ties in entrepreneurial networks. Brockner et al. (2004) claim that that procuring necessary resources, i.e. financial, technological, human etc. is central to the entrepreneurial process. Consequently, the necessary resources must be mobile.

**Mobility of social relations/networks or Social mobility**
Mobility in a social context can be studied from on a macro perspective such as how socioeconomic status is affected by entrepreneurship (e.g. Quadrini 1999). On the other hand one can also focus more narrowly on how interaction patterns change in entrepreneurial networks (e.g. Elfring & Hulsink, 2007). Since entrepreneurship by our definition is a social phenomenon, social networks link all the other aspects of mobility together, e.g. knowledge is often transferred in a social setting, infrastructure can facilitate or inhibit social interaction; people and organisations are part of social networks; opportunities are discovered and created in social networks; and resources are often valued through social processes.

**Mobility of infrastructure**
This aspect of mobility in relation to entrepreneurship can be studied in retrospect e.g. through measuring entrepreneurship directly and indirectly associated with the spread of new infrastructure. This aspect is also closely associated with how communication takes place in entrepreneurial networks e.g. how ties are affected by physical distance. Particularly, we find studies of how modern communication technology based on the Internet affect entrepreneurship, interesting.

**Mobility of organisations**
Like people organisations can be nodes in entrepreneurial networks. Organisations can be more or less entrepreneurial. Entrepreneurship within organisations is sometimes referred to as intrapreneurship, which focuses on entrepreneurial behaviours by firms or employees. The presence or absence of organisations can affect the conditions for entrepreneurship. Firm movement into new markets can be an indicator of organisational entrepreneurship. Furthermore, mergers and acquisitions can not only extend organisations but also create or inhibit opportunities for intrapreneurs within the merging organisations.
LIMITATIONS

The framework we base our analysis on influences heavily what aspects of mobility we identify as important to entrepreneurship. Another framework might have revealed additional aspects of mobility. Furthermore, we might have missed important previous research on the topic of entrepreneurship and mobility.

Since we aim at widening the concept of mobility in relation to entrepreneurship, attempts at finding other aspects not included in our list are welcomed and we want to emphasise that our list might not be exhaustive.
5. REFERENCES


Li-Hua, R., (2003). From technology transfer to knowledge transfer - a study of international joint venture projects in China, IAMOT.


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Managing Mobility for Learning, Health and Innovation

The vision for the HELIX Vinn Excellence Centre is to create a long-term research and innovation partnership between university, private companies and public sector organizations with a focus on the management of mobility - of people and ideas - as driving forces for individual and organizational, health and entrepreneurship, and to achieve a position - nationally and internationally as a leading research and innovation centre in this field. Research is conducted within three research areas:

- Mobility in relation to Learning and Competence Development
- Mobility in relation to Health Promotion and Development
- Mobility in relation to Idea Development, Entrepreneurship and Innovation