



**Centre for Research into Regional Development**

## **Innovation and Rural SMEs**

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### 1 Introduction

This paper is written as a contribution to the Centre for Research into Regional Development (CRRED)'s occasional series of 'position' papers and as precursor for a CRRED research project(s) on innovation and rural SMEs in the South of Scotland. This paper aims to highlight previous research, relevant literature and issues that can be investigated by such a project under the auspices of CRRED. The aim is to develop a number of hypotheses and research questions that can be investigated by such a study. It is hoped that the research will provide information that can be used as the basis for a bid for further funds to ensure the continuation of CRRED, perhaps leading to a wider European project, as it is clear that innovation is of major concern to policy makers in Scotland, especially for rural environments. This paper is different, but complementary, to a previous CRRED paper on innovation, which focused on policy support and the range of innovation grants for rural SMEs, such as; SMART, SPUR SCORE and SEEKIT (Rutherford, 2007: CRRED paper number 1), placing such public policy support in the context of the environment in the South of Scotland. This paper therefore, does not make any specific reference to these national schemes, which, in any case, are targeted largely at technology-based SMEs. Rather this paper seeks to place innovation and rural SMEs within the existing academic literature to provide a contextual basis for further research.

The developing literature on rural entrepreneurship has suggested that there are a number of distinctive characteristics of rural entrepreneurship compared to entrepreneurship in more urban environments (Smallbone, et al. 2002). These may be called 'stylised views'. For example these include:

- Smaller size of businesses, with relatively smaller numbers of growth businesses, although businesses tend to be established longer, giving less 'churn' or volatility in business formation.
- Higher levels of self-employment.
- Relative slowness to take-up innovation and technology, including ICT.
- Shortages of skilled labour, providing difficulties in recruitment, due to net outward migration of younger ages of the population.

- Limited numbers and density of business networks.
- Limited local markets.
- Higher proportions of family-owned businesses with more reliance on family provided labour.
- A business advice and support premium, due to the more spatially dispersed pattern and lack of business networks, for support agencies.

However, some of these stylised views have been disputed, for example, among others, Deakins, et al. (2003) have shown that take up of ICT in small businesses in rural areas of Scotland was higher than expected and Dwelly, et al. (2005) have indicated that small firms in peripheral areas are likely to be quicker to adopt technology, recent research by the Small Business Service (SBS), from their annual survey data, has revealed that the other characteristics of rural small businesses are still evident in rural areas of England (Telford, 2006). The Countryside Agency's report suggested on-going innovation in rural areas in their Stepping Stones report (Countryside Agency, 2003). Although some trends may lead to some changes in these characteristics, for example, through the development of virtual learning environments, we need to take this background environment of characteristics of rural businesses into account when discussing innovation among rural business owners.

## **2 Innovation, Location and SMEs<sup>1</sup>**

Over the recent past there has been a large body of research, which has suggested that there is a spatial element to innovation and SMEs. This spatial element arises for several reasons:

a) The main product of innovative activity is knowledge and knowledge can be classified as being either codified or tacit. Codified knowledge is easily transferable and hence distance does not matter, however, tacit knowledge is not portable and to fully understand it you have to be involved in the production of it, hence there is a spatial aspect to it. In today's knowledge economy, such tacit knowledge is increasingly important for rural SMEs (SQW, 2006).

b) Specific industrial districts exist, which are bounded areas, and which mainly, though not exclusively of SMEs operating in a process of cooperation and competition. The cooperation occurs over input activities such as R&D activities, training etc but there is still competition for contracts and in the final goods and service markets. It is argued that these industrial districts give a particular region a competitive advantage and hence the spatial dimension is important (Oughton and Whittam, 1997).

c) A further aspect of the cooperation which occurs within these industrial

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<sup>1</sup> This section borrows from material written by a colleague, Geoff Whittam, in a previous jointly-authored paper (Deakins and Whittam, 2006).

districts are what is known as 'untraded interdependencies' which are share values and norms of conducting business plus the transferring of ideas and a coming together for the solving of common problems (Lundvall 1992; Cooke and Morgan 1993).

d) Some research has suggested that SMEs in certain regions are more innovative in some regions than others which raises the question of whether this is to do with a particular spatial characteristic, the sector that the innovative SMEs are based in, or a combination of both (Roper, et al, 2006).

e) Other research has concentrated on the differences between urban and rural SMEs ability to innovate (Cosh and Hughes, 2000).

The latter point has become somewhat controversial with Keeble, et al (1992) for example, arguing that the difference between rural and urban has been overplayed and that the real differences occur between accessible rather than remote rural areas (Keeble, et al. 1992). This area is reinforced by a recent survey carried out in West Yorkshire which amongst other things concluded "Evidence suggests that the rural business base is similar in its nature to the urban base, in particular in the types of activities that exist. The main differences tend to be the size and scale of operations." (SQW 2006 p.76) The report further commented "The obstacles facing rural businesses at start-up stage are those we would expect to find for any start-up business" (SQW 2006 p.77) Similarly research undertaken by North and Smallbone (2000) identified on this same topic concluded; "that there is no clear indication from this research that being located in a remote rural environment is having an adverse effect on the ability of SMEs to innovate overall, but rather that it has various influences on the motivation and ability of owner managers to make innovations in different aspects of the firm. To survive in remote rural areas, SMEs need to be able to be adaptable, and this can result in them being more innovative in some respects than firms elsewhere." (North and Smallbone, 2000 p.155).

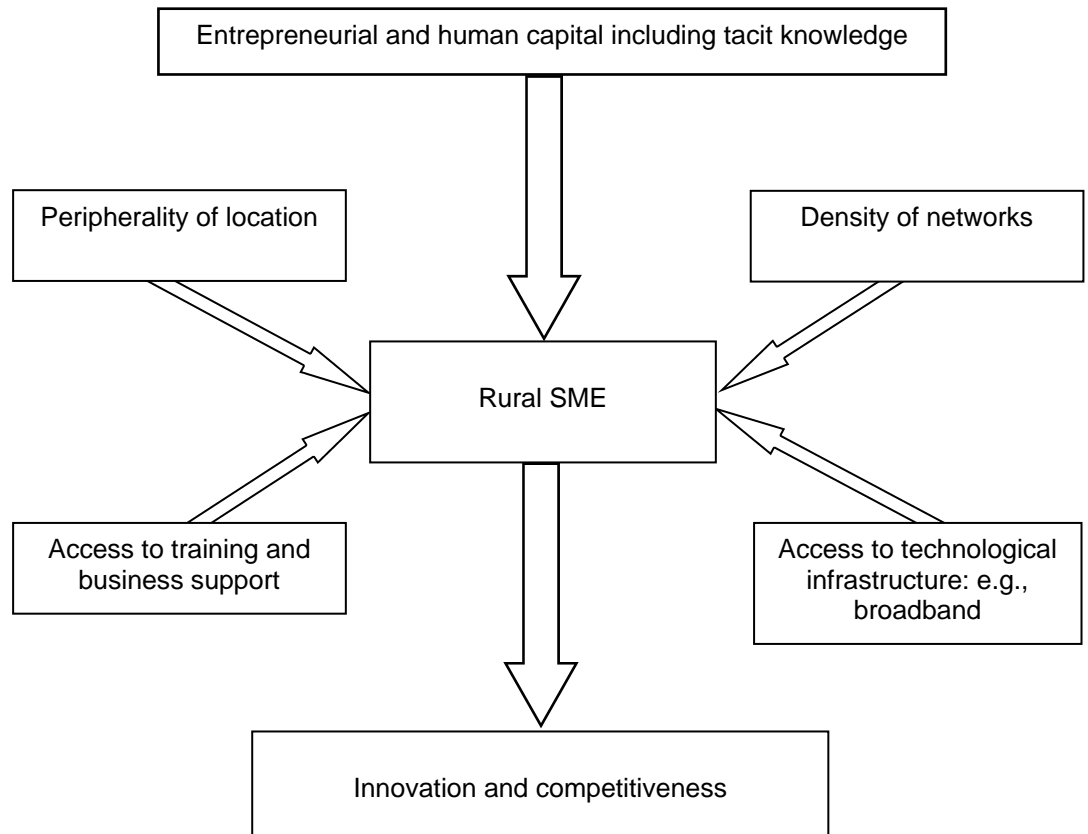
## **2.1 Implications**

A number of hypotheses can be generated from this discussion:

- SMEs in rural and remote regions need to be innovative to survive and access larger markets;
- Innovation will be influenced by the extent and density of business networks;
- Innovation will be influenced by the extent of specialised training and support;
- That innovation will be influenced by the extent of the technological infrastructure; for example the availability of and access to broadband.
- Innovation in knowledge-based SMEs will be reliant on the retention of tacit knowledge.

This schematic framework is illustrated in Figure 1.

Figure 1 Influences on Innovation and Rural SMEs



### 3 The Role of ICT in Rural Entrepreneurship

The traditional view of the rural entrepreneur is one of slowness to adapt to change (North and Smallbone, 2000). In these papers, rural SMEs are presented as being slow to understand the benefits of ICT adoption. Their low demand for new technology results less from market conditions, than from information failures among potential users. One implication is that gaps in knowledge can then be filled through the provision of fuller information, training support and dissemination of good practice. However, more recent work has suggested that such views are erroneous, in fact far from being laggards in the take-up of ICT, a more complete view is that levels of adoption can be high, but the full utilisation of the benefits of ICT may be more limited (Deakins, et al, 2003). This has been supported by recent analysis by the SBS of their annual small business survey, which included questions on the use of ICT. For example, they find that: “for almost all purposes, businesses in rural areas with dispersed dwellings are significantly more likely than those in other types of area to use ICT” (Telford, 2006).

It may be that policy promotion has encouraged the take-up of ICT by rural entrepreneurs, or there may be more generally an increased awareness of the benefits of ICT in rural areas. Whatever the reasons, there is an increased momentum and potential from the increased take-up of ICT.

#### 3.1 ICT E-business and Rural Entrepreneurial Development

Recent rapid developments in ICT and e-business, such as the growth in B2C

and B2B e-business trading offer rural entrepreneurs a number of benefits:

- Access to global markets and overcoming issues of peripherality
- Improved ways of networking and acting collectively
- New marketing and communication methods with customers and suppliers

Vaessen and Keeble (1995) have argued that growth-oriented entrepreneurs in peripheral regions have small local markets that they can tap, and so require to 'export' beyond their home region at an earlier stage in their development than entrepreneurs in core regions.

It is increasingly apparent that in today's fast changing economy it is necessary to have an e-business presence and strategy to be competitive. Rodgers, et al. (2002, page 184) state that "For all intents and purposes, you cannot compete nowadays without some kind of e-business strategy". E-business is one of the drivers of change and competitiveness in rural areas for rural entrepreneurs. The Internet is a medium for achieving growth and global markets, but also opening up new niche market areas, which can facilitate entrepreneurial growth, however, even for low growth rural businesses, some form of internet presence is increasingly important. However, for successful exploitation of opportunities presented, careful planning, strategy and management are said to be essential (Rodgers, et al. 2002).

Strategy, however, can also be developed collectively by rural entrepreneurs. There is evidence that the Internet has provided a means for collective action, for example, through local area marketing of rural areas. Such strategies can benefit member firms that may not have a direct Internet presence. Research on the value of Internet forums in rural localities is limited, but research by Galloway, et al. (2003) found that forums can be highly effective in 'repackaging' a business in that they provide non-Internet based businesses with a new medium through which to access customers. In addition, they served to create additional local markets for their members and accessing additional local customers as well as potential global markets. In addition the research indicated that Internet forums may also include the provision of networking facilities, such as chat rooms and message boards.

### **3.2 Access to Technology**

Recent evidence suggests that rural entrepreneurs are not disadvantaged by the lack of access to technology connections such as broadband. For example, the SBS (2006, page 11) analysis of their annual small business survey, with a sample of over 1300 rural small businesses, considered that "Although it is true that businesses in rural villages and areas with dispersed dwellings were more likely to cite lack of broadband access as an obstacle to success (6% in each case) than those in towns or urban areas (2% and 3%), in all types of area the proportion—was very small." Similar results were found by the recent SQW (2006) report on West Yorkshire with less than 5% of firms that they surveyed mentioning the lack of access to broadband as a constraint.

Of course, such surveys tell us little about actual adoption levels and how technology is actually used. Access levels can be superficially misleading. Rural business that may be affected by low adoption levels are likely to be those that are in emerging and expanding sectors such as knowledge-based and creative sectors. It is likely, however, that there will be some stimulants to demand for higher adoption levels by rural entrepreneurs over the next 10 years. Such demand could be stimulated by:

- Collective action and participation in business networks
- The development of clusters which attract new businesses in specific sectors, such as art and media.
- Educational developments through increased forms of virtual learning.

### **3.3 Implications**

Recent evidence suggests that rural entrepreneurs have not been slow to adopt ICT, although it is more difficult to ascertain the levels and sophistication of use in terms of the DTI's own adoption ladder (DTI, 2000). Internet forums offer the potential for collective behaviour, which will allow:

- Increased access to global markets
- New niche markets, for products and processes
- New local customers and markets
- Forums for discussion and collective action.

Internet trading is still having revolutionary affects on markets, increased use of e-business methods are still developing for rural entrepreneurs and ICT and e-business will continue to be a key driver for change. It provides increased flexibility for rural entrepreneurs, new methods of working and doing business. Trends in society and in businesses will continue to stimulate demand for increased used of web-based forms of communication and technology.

This discussion leads to the following hypotheses:

Access to Internet Forums will increase innovative activity and encourage e-business trading

Attitudes to adoption will be more important than access to advanced technological infrastructure.

The author is currently seeking Carnegie funding to undertake a follow-up study on Internet forums in Scotland, in collaboration with colleagues at Heriot-Watt University<sup>2</sup>.

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<sup>2</sup> Carnegie small grant application May 2007

## 4 Rural SMEs and Innovation Systems

For SMEs to be innovative and high growth, it is arguable that they must have access to a national or regional 'innovation systems'. For example, a high technology-based SME might need access to research facilities in Scotland's Universities or research institutes in order to conduct R&D and develop prototypes. An innovation system is considered to consist of institutions that contribute to the development and diffusion of new technologies and provides the framework for the development of government policies.

A report by Roper, et al. (2006) for the Scottish Executive on Scotland's innovation system concluded that an innovation system did exist in Scotland but only served SMEs in urban locations such as the Central Belt. They suggested that SMEs in rural locations, especially the Highlands and Islands and the South of Scotland were excluded from this system (Roper, et al. 2006, page 73):

*“Geographical factors, and the location of HEIs, create a profound distinction between the situation of the firms in the Central Belt ----- and other rural areas— firms in the Highlands and Islands, Borders and Dumfries and Galloway are excluded from any positive dynamic at the moment.”*

### 4.1 Implications and EU Benchmarking

There is an important opportunity for CRRED to test the Roper et al claim that SMEs in the South of Scotland are excluded from the Scottish Innovation System. This can be achieved by utilising key informant interviews to investigate this research question. Data and results from the interviews can EU benchmarking for innovation which have several categories including:

- Human capital---qualifications and skills of employees in technology-based rural SMEs.
- Institutions including levels of tertiary education
- New product development in manufacturing rural SMEs (survey work could supplement study).
- Knowledge exploitation by knowledge-based SMEs.
- Access to and take-up of existing innovation support polices (e.g., Innovatech).

## 5 Summary and Conclusions

There are still remarkably few studies on innovation in rural SMEs, previous research has been somewhat contradictory on the extent of innovation and creativity in rural SMEs. There have been no separate studies on the extent of Innovation Systems in rural areas. This paper has argued that there is an important opportunity for CRRED to take advantage of this lack of research, this could lead to further funding proposals to build on this investigatory work.

It is recommended that CRRED resources are used to undertake two parallel



investigations:

- A survey of manufacturing SMEs to investigate hypotheses indicated by the paper. This will form the basis of a quantitative analysis on innovative activity. This may focus on the CRRED key sectors: food supply; forestry products and renewable energy.
- A key informant based qualitative study on the role of an Innovation System in the South of Scotland, with benchmarking from secondary data.

These two parallel studies would complement existing CRRED work and research that has already been undertaken or is on-going and would form the basis for seeking additional core EU funding for a future CRRED proposal.

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