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Networking, trust and embeddedness amongst SMEs in the Aberdeen oil complex

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Over the last decade or so, networking has become a 'vogue concept' in small business research, connecting with wider debates on learning and regional development. Participation in inter-firm networks is seen to provide small firms with access to a broader pool of resources and knowledge, helping them to overcome size-related disadvantages. In particular, the role of such networks as channels for innovation and learning within regions and localities has been emphasized in the context of an apparent shift towards a knowledge-driven economy. In this paper, we provide an empirically-grounded analysis of networking, trust and embeddedness amongst small and medium-sized enterprises (SMEs) in the Aberdeen oil complex. Drawing upon survey and interview data, it is argued that connections to extra-local networks play a crucial role in providing access to wider sources of information and knowledge. At the same time, an Aberdeen location still matters to oil-related firms because of the access it offers to crucial forms of industry-specific information and expertise. In concurring with recent calls for more empirically-grounded research which seeks to 'test' theoretical propositions against relevant data, we suggest in conclusion that a combination of firm surveys and face-to-face interviews provides an appropriate way forward.

Keywords: networks; embeddedness; trust; learning; SMEs; oil industry.

1. Introduction

Networking has become a 'vogue concept' in small business research over the last decade or so (Monsted 1995: 193, Chell and Baines 2000: 195), connecting with wider debates on learning and regional development (Amin and Thrift 1994, Crewe 1996, Keeble *et al.* 1999). A key assumption here is that participation in inter-firm networks can provide small firms with access to a broader pool of resources and knowledge, helping them to overcome size-related disadvantages (Szarka 1990, Maillat 1995). According to the influential flexible specialization thesis, the success of certain industrial districts in the 1970s and 1980s was associated with collaborative inter-firm relations and support from social and political institutions (Brusco 1982, Piore and Sabel 1984, Storper and Scott 1989). More recently, the role of inter-firm networks as channels for innovation and learning within regions and localities has been emphasized in the context of an apparent shift towards a knowledge-driven economy (Lundvall and Johnson 1994, Storper 1997, Cooke and Morgan 1998, Maskell *et al.* 1998, Hodgson 1999). At the same time, the concept of embeddedness has assumed particular importance in emphasizing the extra-firm dimension of networks that

encompasses contacts with institutions such as business associations, development agencies and local authorities (Granovetter 1985, Amin and Thrift 1994, Yeung 1994, Morgan 1997).

In this paper, we provide an empirically-grounded analysis of networking, trust and embeddedness amongst small and medium-sized enterprises (SMEs) (defined as firms with 500 or fewer employees) in the Aberdeen oil complex¹ in North East Scotland, relating this to broader debates on knowledge and regional development. As an established localized 'cluster', the Aberdeen oil sector provides an appropriate 'laboratory' for exploring SME networks. Since the initial phase of oil-related development in the mid-1970s, the industry has become increasingly embedded in Aberdeen, and its future development will be shaped by the interaction of local and global forces. Our analysis of networking in the Aberdeen oil complex is structured around the following questions.

1. To what extent do SME owner-managers regard networking as an important part of their business activities?
2. Are inter-firm and extra-firm relationships in the Aberdeen oil-related sector characterized by 'institutional thickness' and trust?
3. How important are localized networks relative to extra-local sources of information and expertise?

While the importance of networking activities to SMEs based in Aberdeen is apparent, the paper argues that connections to extra-local networks play a crucial role in providing access to wider sources of information and knowledge. In the next section, we review recent debates on networking, trust and embeddedness. After briefly outlining our research design and methods, the paper considers firms' networking and learning activities. The fifth section examines local 'embeddedness' and institutional support before we explore extra-local forms of networking. Following a discussion of trust and credibility amongst firms, we consider the significance of our findings in conclusion.

2. Networks, embeddedness and trust

Given that economic theory has conventionally regarded firms as atomistic actors governed by rational choice considerations, the network concept is significant because it stresses that firm growth and development depends on broader relationships and linkages (Johannisson 1995, Storper 1997). It is associated with a distinct approach to entrepreneurialism which is seen as a dynamic process channelled and conditioned by the social relations between individual actors (Aldrich and Zimmer 1986, cited in Bryson *et al.* 1993: 267). In this sense, participation in wider networks can facilitate processes of learning and innovation amongst SMEs through the sharing of resources and capabilities within an uncertain economic environment. As such, inter-firm networks, supported by local institutions and conventions, function as channels for the transfer of information, ideas and skills (Maillat 1995, Storper 1997). Despite this widespread interest, however, some researchers are more sceptical about the importance of networks (Bryson *et al.* 1993, Chell and Baines 2000), with Curran and Blackburn (1994, Curran *et al.* 1993) arguing that firms' networking activities are limited by owner-managers' desire for independence, time commitments and doubts about the quality of much public sector assistance. In response, advocates of the

network concept have been highly critical of the contention that independence leads to a 'fortress enterprise' mentality (Johannisson 1995, Monsted 1995, Bryson and Daniels 1998). Instead of networking activity leading inevitably to dependence, Johannisson (1995: 216) argues that it 'encompasses a generic dependence/independence paradox'. The ties of mutual dependence which are created through the formation of networks reflect the actions of individual entrepreneurs, and remain open to further transformation.

In view of the potential vagueness and ambiguity of networks as objects of study (Johannisson 1995), the work of Mitchell (1973) and Szarka (1990) serves to clarify and 'unpack' the concept, distinguishing between three types of network (cf. Johannisson 1987). The first of these refers to exchange networks, encompassing a firm's commercial relations with customers and suppliers. Second, communication networks incorporate the organizations and individuals which provide a firm with contacts and knowledge to inform its business activities. These might include consultants and advisors, industry bodies and government agencies (Szarka 1990: 12). Third, social networks are made up of relatives, friends and acquaintances who provide support to SME owner-managers within a broader framework of shared norms and expectations. In practice, however, these are likely to function as inter-related dimensions of firms' networking activities rather than completely separate types. While most accounts have focused upon exchange networks (Johannisson 1987, Szarka 1990), this paper places more emphasis on communication and social networks.

Whereas the work of Mitchell (1973) and Szarka (1990) identifies different types of networks, the distinction between strong and weak ties (Granovetter 1973) refers to the strengths of the linkages between participants. The notion of strong ties emphasizes closely-textured networks of family, friends and kin, with weak ties referring to more dispersed relationships with a range of individuals, groups and organizations. An over reliance on localized strong ties can lead to problems of 'lock-in', in the parlance of evolutionary economics, through the progressive closure of local networks in the face of wider technological shifts (Grabher 1993). As such, the 'strength of weak ties' can play a crucial role in offsetting tendencies towards local closure and introversion by providing access to wider sources of information and expertise (Granovetter 1973, Monsted 1995, Bryson and Daniels 1998). At the same time, however, it is important to recognize that strong ties are not necessarily localized and weak ties are more dispersed over space. Indeed, social scientists have sometimes used the term network as an alternative to traditional conceptions of community as locally bounded. In this context, Wellman *et al.* (1988) have introduced the concept of personal community to refer to informal ties and networks which are socially close but may be physically distant. This points to an important distinction between spatial proximity and social proximity (see below).

The generation of trust between firms, and firms and institutions, has been identified as an important intangible or relational asset (Storper 1997) that is associated with economic success in local and regional economies (Camagni 1991, Sabel 1994, Cooke and Morgan 1998). In broad terms, trust can be defined 'as the judgment one makes on the basis of one's past interactions with others that they will seek to act in ways that favour one's interests, rather than harm them, in circumstances that remain to be defined' (Lorenz 1999: 305). Given that they are rooted in a partial knowledge of the other parties, rather than an accurate expectation of a particular outcome, trusting judgements will tend to remain tentative (cf. Child and Faulkner 1998: 45–47).

One important distinction is that between ‘competence’ and ‘intentions’ forms of trust. While the former refers to the belief that partners are capable of meeting their commitments, the latter refers to the belief that they intend to uphold such commitments (Lazarcic and Lorenz 1998: 2). As such, ‘competence trust’ is likely to overlap with notions of reputation, although reputation can be seen as a more concrete and impersonal asset compared to the intangible and relational nature of trust (Lazarcic and Lorenz 1998: 4). Beyond this, ‘goodwill trust’ is a feature of relationships where the partners are willing to proceed beyond explicitly-stated commitments in developing a particular venture or initiative (Sako 1998: 27–28).

The concept of embeddedness has assumed particular importance in emphasizing broader social and institutional aspects of extra-firm networks (Amin and Thrift 1994, Yeung 1994: 475). In a seminal contribution to this literature, Granovetter (1985) sought to challenge the seriously under-socialized notion of the ‘economic’ held by orthodox forms of economic theory by stressing the ways in which economic processes are grounded in social relations. Beyond this, economic geographers and others have sought to spatialize the embeddedness concept, arguing that social relations are themselves shaped by the geographical contexts in which they are situated (Amin and Thrift 1994). In this context, Amin and Thrift (1994) emphasize the need for regions to develop institutional ‘thickness’ – defined as the existence of high levels of trust and a shared framework of understanding between key institutions – in order to generate a pool of collective resources that supports entrepreneurship and innovation. Similarly, Storper (1997) suggests that those regions able to build a stock of ‘relational assets’ through routine interactions between firms and institutions will develop a capacity for learning that enables them to adapt to change within an increasingly uncertain economic environment.

Much of the literature on industrial districts and, more recently, learning regions (Morgan 1997) is underpinned by a common assumption regarding the benefits of spatial proximity in facilitating processes of interaction between firms and creating trust (MacKinnon *et al.* 2002). This is generally framed in terms of how ‘clustering’ eases the flow of information and knowledge, with one pair of influential commentators pointing to the importance of the regional scale as the lowest strategic level at which firms can sustain the levels of interaction needed to build trust (Cooke and Morgan 1998: 80). While this emphasis on information flows and learning helps to account for the persistence of local and regional clusters of economic activity against a backdrop of globalization (Maskell *et al.* 1998, Malmberg and Maskell 2002), it is important not to overlook the potential role of extra-local networks in providing information to firms in local and regional clusters (MacKinnon *et al.* 2002). In this sense, a number of authors have suggested that ‘proximity’ need not be spatial; it can also assume organizational and relational forms (Amin and Cohendet 1999, Hudson 1999, Gertler 2001). The key point here is that questions about the spatial organization of networking processes should remain open to empirical analysis rather than being subject to *a priori* theoretical assumptions about the importance of localized relations.

3. Research design and methods

Our study of SMEs in Aberdeen was based on a two-stage research design where an extensive telephone survey was followed by a smaller number of face-to-face inter-

views. This approach allowed us to explore both structural properties of networks, in terms of frequency of contact between actors, for instance, and the networking process through the accounts of individual participants. The employment of face-to-face interviews with a smaller number of firms as a follow-up to an extensive telephone survey provided insights into the broader social and institutional dimensions of networks and 'embeddedness', while also allowing us to explore issues of 'interpretation, language and meaning' (Schoenberger 1991: 183) that had been necessarily suppressed in the survey.

The sampling frame for our survey was constructed from listings of firms in various industry and local business directories. These listings are generally based on self-reporting rather than any statistical cut-off point such as proportion of overall turnover derived from oil and gas. This process produced a total of 1027 firms (including 73 known large firms which were subsequently removed), which matched existing estimates of the number of oil-related firms operating in the Aberdeen area.² A systematic sample was then conducted by selecting every third firm from the sampling frame. Rather than stratifying according to sector from the outset, the sample was monitored and adjusted as the survey proceeded to make it representative. A total of 192 firms completed the full survey in May–June 2000, a response rate of 54.5% after adjusting for firms that were defunct, not oil-related or in sectors that were already over-represented.³ Information derived from the telephone survey was used to identify firms for face-to-face interviews,⁴ and 34 semi-structured interviews were completed with SME managers between August and November 2000.

Before proceeding to discuss empirical findings, it is important to stress that our study incorporates a wide range of business activities. This reflects the fact that the population of firms was defined geographically (according to their position within a localized cluster of economic activities) rather than functionally. This is best understood in terms of the basic structure of the North Sea oil industry, encompassing three distinct groups of firms: the oil operators, including major multinationals such as BP Amoco, Shell and Elf, which licence the oil and gas rights; the contractors, again mainly large trans-national firms, which provide services on behalf of the operators; and supply firms providing various products and services to contractors and operators (Crabtree *et al.* 1997: 183). We focused largely on this third group, which encompasses a wide spectrum of activities from drilling services to the provision of mechanical equipment and the supply of skilled personnel.⁵

4. Networking and learning activities

The industrial context in which Aberdeen-based SMEs are operating has changed considerably in recent years as the large oil operators have sought to reduce costs by rationalizing the supply chain and out-sourcing certain non-core activities. This has resulted in the emergence of a group of large integrated contractors managing the supply chain on behalf of the operators, and SMEs now tend to deal with this group of lead contractors rather than with the operators themselves (figure 1). The emphasis on cost-reduction also led to the establishment of a government-sponsored initiative CRINE (Cost Reduction in the New Era) in 1993, which aimed to reduce operating costs in the North Sea relative to other overseas locations (Woolfson *et al.* 1997). While purportedly an industry-wide initiative, CRINE was essentially driven by the interests of the oil companies and major contractors with SMEs and local business

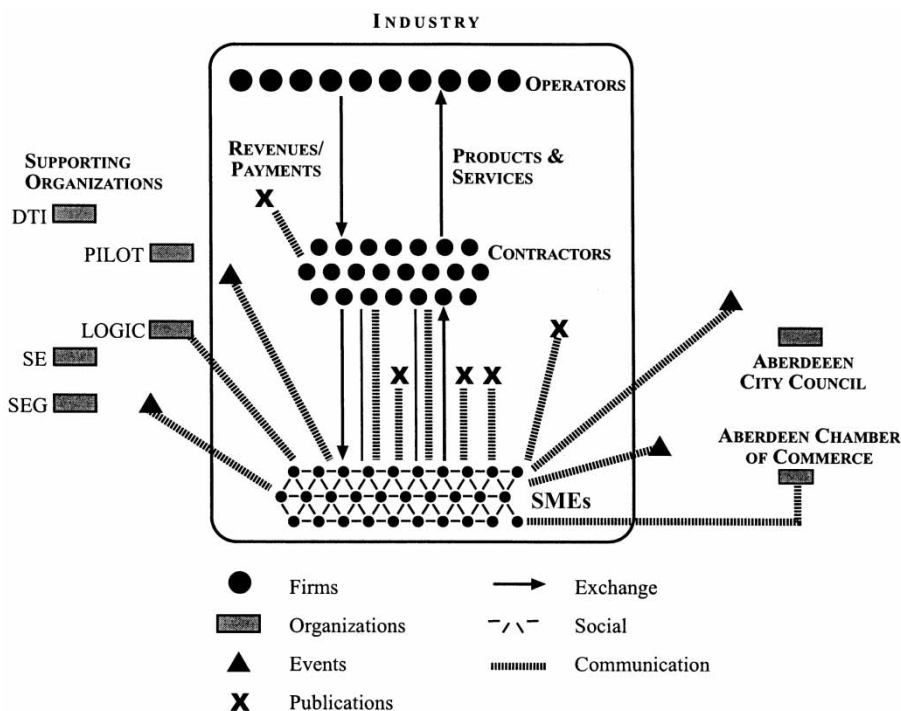


Figure 1. The networking pattern of SMEs in the Aberdeen oil complex.

interests being largely unrepresented (Cumbers 2000b). In 1999–2000, following the recommendations of the Oil and Gas Industry Taskforce – now renamed PILOT – a joint industry-government initiative, CRINE was succeeded by LOGIC (Leading Oil and Gas Industry Competitiveness) (figure 1).

When asked to identify why their firm was established in Aberdeen specifically, 72.4% of the SMEs in our survey cited the need for proximity to a growing market or group of customers. Material derived from the face-to-face interviews provides further insights into these relationships. In spite of the growing importance of information and communication technologies, several respondents indicated that spatial proximity remained important in terms of offering customers a responsive and flexible service. The following quotation illustrates this point:

I think, in a business sense ... it's still important to be close to your customers. Even in today's world, they still like to see a face, they still like to be reassured that they can call you and you can be there in half an hour if there's a problem, whatever. So, I think, in a business sense, close proximity is still important (SME manager, September 2000, authors' interviews).

The underlying emphasis on spatial proximity which runs through much of the literature on industrial districts and learning regions also seems to be an important factor in sustaining exchange networks between customers and suppliers in Aberdeen. In practice, though, such exchange tends to be bound up with other dimensions of business networks (Mitchell 1973, Szarka 1990). In terms of the social networks between individuals and firms, a form of personal 'embeddedness' (Oinas 1997) within the local area can be important in establishing and maintaining business relationships.

One respondent reported that he was actually recruited by a Manchester-based firm that had moved into Aberdeen from outside because of his connections and knowledge of the Aberdeen area, enabling him to use his 'local Scottishness' to gain advantage for the company (authors' interviews).

While close relationships with certain key customers may be seen as a fairly routine aspect of everyday practice in exchange networks, we are also concerned with the participation of SMEs in wider communication and social networks (Mitchell 1973, Johannisson 1987, Szarka 1990). A survey question on the frequency of informal social contact with other business-people in the Aberdeen oil-related sector was designed to provide information on firms' participation in local and industry-based networks. In response, 51% of SME owner-managers stated that they had such contact once a week or more often, with 19.8% saying that such contact took place at least once a month and 20.8% reporting that it took place less than once a month. Some 5.7% of firms stated that they had no such contact. These responses appear to point to a relatively high level of social contact, providing some empirical support for the notion that social networks and relations within localities are important in fostering communication and collaboration between firms and managers (Cooke and Morgan 1998, Lawson *et al.* 1998).

The interviews were designed to go beyond this limited emphasis on frequency of social contact by providing insights into the networking process, particularly in terms of the involvements and experiences of individual firms. The importance of being connected to industry networks was certainly recognized by the majority of respondents (figure 1). Such linkages are particularly important in terms of communication, providing information and knowledge about forthcoming contracts and projects:

If you are in the oil and gas business you need to be in Aberdeen, particularly in the service part of the industry. It may be possible to develop a product outside Aberdeen and then sell it to the offshore industry but if you are in the service business, you need to be here, you need to have your ear to the ground and have your networks established to get that information going back. Who's going to be doing what? And getting yourself in the door as soon as possible (SME manager, September 2000, authors' interviews).

In this context, it is not uncommon for Aberdeen to be described as an 'industrial village' where information about forthcoming events and opportunities is quickly circulated through localized networks in a relatively small and geographically peripheral city where all the key decision-makers will tend to know one another (authors' interviews). For instance, one respondent stressed the growth of a 'village mentality' as oil-related development generated a strong sense of distinctiveness and identity in the face of geographical isolation and the environmental challenges confronting the North Sea industry (authors' interviews).

Several respondents emphasized the importance of having a visible presence within the local area, of being seen to be involved and attending key events. In many cases, such presence will be a product of an existing reputation developed over many years of business activity. From this perspective, new businesses face a struggle to develop contacts and establish themselves (SME owner-manager), although it is worth pointing to the importance of strong ties within social networks through contacts from previous employment, friends and family in this respect (Bryson *et al.* 1993, Chell and Baines 2000). For the owner-manager of one established firm, involvement in local networks and events can give the impression that a firm is an important player:

Oh yes, they're [social events] important as well, like the oil show, like things like the golfing days where you can meet some of these people that come in, yeah, that's important ... A lot of it you know you say well I needed to speak to you and you can contact him on Monday, there's a lot of that sort of that type of business if you're known. You've got to keep yourself high profile, ... if you're not seen you're forgotten about ... especially in the smaller companies. I mean to a lot of people we're probably be a lot bigger company in their eyes than we actually are because we have presence, we push and we promote (August 2000, authors' interviews).

While this local presence may not necessarily lead directly to the awarding of contracts and business, it can help in offering access to new exchange networks, helping to get firms onto lists of prospective vendors and suppliers (authors' interviews).

Beyond this access to potential business opportunities, the importance of industry and social events to the operation of communication networks was apparent in terms of the circulation and exchange of information and knowledge (figure 1). In this context at least, networking has to be a reciprocal process to work effectively (Johannisson 1987). One respondent described how his firm goes 'round these exhibitions giving and receiving' information about products and opportunities within the industry (authors' interviews). Another referred to specific events directly related to his firm's business activity (shipbroking) where the company organizing the event might charter an aircraft to take guests to Norway for a night, 'and you can socialise then, and often in the corner ... there's a lot of banter going on and information exchanged' (authors' interviews). More formal events organized by bodies such as the Chamber of Commerce and Grampian Enterprise can also provide opportunities for interactive learning from the experiences of other companies:

what I've found, is that ... it's the way that other people have improved their business, that's the sort of thing we tend to get from it. You know you get an organisation that's maybe got an award this year, okay how did they go about that, what did they do, what was involved, and really understanding how other people are doing business, which we find a bit useful, because you can get a bit blinkered, you know, within your organisation, you're not looking outwards ... (SME owner-manager, September 2000, authors' interviews).

More routinely, exchanges with companies operating in the same business sector often involve the exchange of information and ideas, and can result in processes of incremental learning associated with the development of new initiatives or ventures. In particular, social contacts with key individuals in other companies are often crucial in providing access to sources of information and expertise (Bryson and Daniels 1998), again emphasizing that the communicative and social dimensions of business networks are inseparable in an empirical sense (Mitchell 1973, Johannisson 1987). Such forms of contact and exchange are not necessarily localized, however, and organizational and inter-personal networks can provide information about projects and activities occurring within the industry more broadly.

At the same time, some respondents expressed scepticism regarding the benefits of networking as a business activity, and such comments tended to be directed towards formal events organized by development agencies or industry bodies in particular. These events were viewed as both superficial, in terms of being about image and self-promotion, and ineffective in terms of generating business opportunities:

You will not find me, for example, going to one of Grampian Enterprise's 'come and join us and meet everyone'. You will not find me walking about with a permanent hand out shaking everybody's hand and passing business cards. I avoid these individuals like the plague. And that is my concern about some of the initiatives I have seen in this area. If you

think ‘networking’ is about standing there with a gin and tonic, basically ‘masking’ – I use the word ‘masking’, people ‘mask’ all the time . . . in networking circles, particularly formal networking circles, everyone’s ‘masking’. They’re probably spending so much time meeting and interviewing and evaluating people . . . you can spot it a mile away. I find these, personally, I find that type of networking very uncomfortable (SME owner-manager, August 2000, authors’ interview).

The term ‘masking’ is used to emphasize a perceived emphasis on image and performance while another respondent claimed that organized events provide little opportunity for real social contact and information exchange. Other respondents’ comments suggested that industry events can be affected by the unequal power relations between operators, contractors and SMEs, which structure exchange networks (figure 1). Such respondents tended to be critical of recent industry/government initiatives such as CRINE and LOGIC, claiming that these have been driven by the cost reduction agenda of the large operators and contractors and pay little attention to the needs of the SME sector (authors’ interviews). While Aberdeen is sometimes described as an ‘industrial village’ where close contact between key power-brokers creates a framework for decision-making, there is a sense in which many small business operators felt that they were not really part of this process. As such, the ‘industry’ view tends to be expressed by representatives of the large operators and contractors whose continuing commitment to Aberdeen is seen as crucial to its future prosperity. This apparent lack of a common agenda shaping the interests of different groups of actors within the industry suggests that relations within the oil-related sector in Aberdeen are not characterized by the level of institutional ‘thickness’ characteristic of successful local districts and milieux (Camagni 1991, Amin and Thrift 1994, Keeble *et al.* 1999).

5. Local embeddedness and institutional support

Firms’ use of locally-provided services and support from public agencies can be seen as important aspects of local embeddedness. Table 1 shows the number of firms relying on specific forms of external support from other firms in the Aberdeen area. From the table, it is clear that firms make quite significant use of local services. These can be seen as exchange-based relationships which are based upon commercial transactions where SMEs buy services from other firms. The general pattern is one where firms’ reliance on local forms of support tends to be higher for fairly basic functions such as financial advice and recruitment/training. The percentage of firms drawing on more

Table 1. Use of external forms of support in Aberdeen.

<i>Type of support</i>	<i>Number</i>	<i>Percentage of total, (N = 192)</i>
Financial advice	75	39.1
Technical advice	57	29.7
Management consultancy	19	9.8
Marketing	41	21.4
R and D/product development	23	12.0
Recruitment/training	72	37.5
Other	25	13.0

Source: authors’ survey.

Table 2. Sources of organizational support.

<i>Specific Organization</i>	<i>Number</i>	<i>Percentage of total, (N = 192)</i>
Department of Trade & Industry/British Trade International	67	34.5
Scottish Enterprise/Scottish Enterprise Grampian	85	44.3
Local authorities	13	6.8
Enterprise Trust	13	6.8
Chamber of Commerce	42	21.9
Other	4	2.1

Source: authors' survey.

sophisticated high-level services such as research and development (R&D)/product development and management consultancy is considerably lower, although the category technical assistance has elicited a somewhat higher response. These findings are broadly consistent with the results of a previous survey carried out by one of the authors (Cumbers 2000a: 379).

The other main aspect of local embeddedness that we focused upon concerns support from local and national institutions, relating largely to the communication-based dimension of business networks. Table 2 shows the number of firms relying on specific sources of organizational support. The survey question from which this information is derived was designed to ask about specific forms of advice or support rather than just contact with these agencies. The 'reach' of Scottish Enterprise (SE), including its local subsidiary Scottish Enterprise Grampian,⁶ is clearly apparent with 44.3% of firms receiving advice or support, followed by the Department of Trade & Industry and British Trade International (DTI/BTI).⁷ The number of firms supported by SE/SEG appears to be high, reflecting this organization's role as the principal source of government support for business development and training in Grampian. The fact that fewer firms have received support from DTI/BTI is to be expected since this source provides higher-level specialist services related mainly to export and overseas activities, and firms will sometimes be referred there by SE (meeting with SE/SEG staff, February 2001). The level of support and advice received from the Aberdeen Chamber of Commerce might have been expected to be higher since this is a relatively large Chamber, which offers a range of services to both members and the wider business community.

Although the data presented in table 2 is in some respects indicative of a high degree of local 'embeddedness', the differences between particular sources of support are crucial. The fact that firms are more orientated towards agencies that can provide more resources and a broader range of services is far from surprising. What this implies, however, is that the most important agencies are those which function as part of broader governmental networks rather than those that are more locally autonomous (local authorities, chamber of commerce, enterprise trusts), and it is this latter group of agencies that the literature on industrial districts and local milieux has been most concerned with (Piore and Sabel 1984, Camagni 1991, Lawson *et al.* 1998, Keeble *et al.* 1999). In terms of the prospects for the local Aberdeen economy, table 2 suggests that significant numbers of firms are connected to broader sources of information and knowledge. In contrast to a situation where the majority of firms are dependent on strong ties within the locality (Grabher 1993, Bryson and Daniels

1998), this should help to facilitate adjustment to broader changes in the economic environment.

At the same time, it is important to recognize that the data in table 2 refers only to levels of contact. In particular, it tells us little about firms' experiences of contact and their views on specific agencies. In this respect, material derived from face-to-face interviews allows further analysis. The general impression provided by this material is that many firms were critical of public agencies, and analysis of interview transcripts showed that this was broadly representative with 15 firms having negative views, compared to 9 expressing positive opinions.⁹ Interestingly, however, there does seem to be a tendency for positive views to be based on first-hand experience of support (true for all 9 firms) whereas only 6 of the 15 firms with negative views seem to be basing this on direct experience.

Alongside criticisms of the function and activities of public agencies, some respondents did point to more positive contributions to business development. These included the benefits of objective appraisals of selected aspects of business activity; offering awards for innovation; organizing business events; and easing the potential problems of moving into overseas markets by supplying contacts and knowledge of local conventions and rules (authors' interviews). Again, it is largely the communication-based properties of business networks that are being invoked here. At the same time, other respondents pointed to public agencies' lack of direct experience and knowledge of the problems facing small businesses. This view generally tended to be framed by a small business ideology which portrays the public sector as bureaucratic and overly rule-bound. The following quotation illustrates some of the force of this discourse.

I think Grampian Enterprise does a reasonable job but I think the difficulty they have is . . . they cannot and will never be able to employ the type of people who make a difference because, fundamentally, they are, what I would define as civil servants and they focus on a spend. And as soon as you get an organisation that focuses on spending as opposed to saving, it creates a whole different culture in terms of people – mindsets . . . they're trapped in a halfway house between the real world and the quasi-public sector type environment. They've got a difficult job, because they've got the political ramifications. It's a statistic-driven environment, stats are what it's about (SME Managing Director, August 2000, authors' interviews).

Such comments would appear to reflect broader perceptions of the Enterprise Networks⁹ in particular as ineffective 'talking shops' among the small business community (Federation of Small Businesses 1996). At the same time, the fact that all firms with first-hand experience of dealing with public agencies had a reasonably positive attitude towards them, compared to a minority of firms with negative views, suggests something of a communication problem whereby firms' views are coloured by a long-standing suspicion of the public sector. This would seem to reflect entrenched divisions between public and private sectors in the UK. More broadly, suspicion of public bodies can be seen as a feature of business culture in Anglo-Saxon countries, relative to the European model of partnership (Hutton 1995). Adopting a more positive perspective, the interview material suggests that such attitudes are often dispelled through direct contact and exchange. One important question, beyond the scope of our research, concerns the extent to which negative impressions prevent firms from approaching public agencies in the first place.

While increased contact can generate a degree of co-operation between SMEs and public agencies, the critical comments expressed by some respondents points to a

certain lack of trust and mutual understanding. Institutional ‘thickness’ in the sense of a common agenda supported by different agencies has been identified as a key feature of successful local districts and milieux (Amin and Thrift 1994, Keeble *et al.* 1999), yet the situation in Aberdeen seems to be characterized by considerable distance and misunderstanding between public agencies and small firms. In particular, apparent overlap and duplication between agencies can impede the communicative dimension of networks by creating an impression of confusion and complexity amongst SMEs. As one SME manager put it, ‘you know I’m confused, Chamber of Commerce, Grampian Enterprise, Scottish Enterprise, the Department of Trade and Industry, it’s a whole melee of organisations’ (September 2000, authors’ interviews). Other respondents claimed that the public agencies were only interested in a small number of high profile innovative companies, and complained of a ‘maze of paperwork and a maze of people to talk to’ (authors’ interviews). While the accuracy of these perceptions might be questioned, our research indicates that they have real effects in perpetuating long-standing divisions between small businesses and the public sector. In contrast to accounts of successful local districts and milieux which emphasize the importance of institutional support (Amin and Thrift 1994, Cooke and Morgan 1998, Maskell *et al.* 1998, Keeble *et al.* 1999), relationships in Aberdeen are not characterized by a similar degree of trust and collaboration. The effects of broader tensions between public and private sectors seem to have been magnified by imbalances of power within the Aberdeen oil industry, with small firm representatives indicating that public agencies’ appreciation of the issues facing the North Sea oil industry tends to be informed by the interests of the large operators and contractors.

6. Extra-local forms of networking

Table 3 provides a useful ‘snapshot’ of the operation of communication networks in the North Sea oil industry in terms of the particular sources that firms derive information from. It shows the importance of the internet, with ‘informal contact’, ‘specialist trade press’ and ‘conferences/trade fairs’ also eliciting high levels of response. The fact that 70.8% of firms indicated that informal contacts were significant as a source of information provides further support for the idea that social networks and relations play an important role in sustaining inter-firm relationships. It is clear that most of

Table 3. Sources of information.

<i>Source</i>	<i>Number</i>	<i>Percentage of all cases, (N = 192)</i>
Specialist trade press	130	67.1
Conferences/fairs	113	58.9
Business press	42	21.8
Internet	142	74.0
Informal contact	136	70.8
Other	50	26.0
No response	6	3.1

Source: authors’ survey.

information channels listed in table 3 operate globally, although some publications focus on North Sea activities. In view of the geographic peripherality of Aberdeen, the fact that the overwhelming majority of firms are 'plugged into' wider sources of information is particularly significant.

Given that the above information is derived from a pre-defined survey question, interview material was important in offering further insights into firms' use of different sources of information. While the internet was increasingly used to supplement more traditional communication methods, other sources of information remained important, particularly industry publications, trade shows and other events. Industry journals and publications were generally seen as a valuable way of obtaining information about forthcoming activities and projects with several respondents reporting that they seek to 'target' prospective customers on the basis of information provided by industry journals (authors' interviews). Such activity is not confined to Aberdeen, with industry publications enabling firms to identify operations by prospective customers in overseas locations.¹⁰

In response to a survey question asking if informal forms of communication (word of mouth/gossip) are important as sources of information for business development, the overwhelming majority of firms, 86.5%, indicated that this was the case. This provides some confirmation for the notion, prevalent in the literature, that informal processes of networking and communication play a significant role in transmitting information and contacts between firms (Saxenian 1994, Cooke and Morgan 1998, Keeble *et al.* 1999, Henry and Pinch 2000). A total of 44% of responding firms ($N = 166$) stated that such communication took place mainly within Aberdeen, with 53.6% reporting that informal communication occurred on a wider geographical basis than this (four firms were unable to distinguish between these two forms of communication).¹¹ Most firms emphasizing wider channels of communication indicated that these were organized on a global basis, although some stated that such communication tended to be national. While much of the literature tends to stress the importance of local networks as channels for the circulation of knowledge and ideas (Camagni 1991, Saxenian 1994, Crewe 1996, Capello 1999, Henry and Pinch 2000), the fact that a majority of firms indicated that wider channels of communication are more important should be regarded as a positive sign that Aberdeen-based SMEs benefit from a range of contacts through wider (global) networks of communication. Although the literature on industrial districts and learning often views these extra-local contacts as weak ties compared to more localized forms of co-operation, our research suggests that both local and extra-local networks are comprised of a mix of strong and weak ties (Wellman *et al.* 1988).

In terms of how processes of informal communication actually operate, interview material again points to the importance of personal contacts within social networks. In particular, established personal links developed in Aberdeen can generate further opportunities. This reflects the general mobility of people within the industry, and contacts that result from joint working in the past can be particularly important in securing business relationships in the future because of the credibility and trust that has been built (SME manager, authors' interviews). Given the general expansion of activity in emerging overseas locations in recent years, such contacts can offer Aberdeen-based companies opportunities to develop a presence in these areas. In terms of operating in overseas markets, the ability to tap into industry and social networks is again crucial:

... just sort of being in the right bars, listening to the right gossip, ... I mean intelligence comes from all sorts of places, and it's a relatively small business ... it's often quoted it's the same 50,000 arseholes drifting around the world you run into, and there's an element of truth in that because ... it's a very mobile industry, the oil industry. So you do have a guy I dealt with in Peru who's now in Indonesia who will then be in Sudan, who will then be in Mozambique, and back to Aberdeen networking, and you think I sold a pipe to these guys or I bought a pipe from these guys, and you know you just get into the system that way [networking], ... you can learn a lot by listening (SME owner-manager, September 2000, authors' interviews).

Similarly, another respondent stressed the importance of developing a presence in overseas markets, in terms of the need to build networks and 'pick up the local gossip' with bars again identified as key sites of interaction (authors' interviews). Much of this material illustrates the fact that the exchange, communication and social dimensions of business networks are inseparable with social contacts often providing important information that can generate new commercial opportunities for firms.

In broad terms, respondents indicated that an Aberdeen base provides firms with an immediate source of recognition and credibility in international markets because of Aberdeen's position as the main operations base for North Sea activity. Furthermore, the nature of the North Sea environment means that many products and technologies will have been tested and developed in difficult conditions (authors' interviews). For firms providing business services such as training, this form of technical competence and recognition is perhaps more difficult to generate, and one such firm reported targeting markets where there is a substantial presence of customers from Aberdeen who will be aware of the firm's reputation, a process that is sometimes aided by referrals from oil operators or the likes of Scottish Enterprise (authors' interviews). While all this suggests that a history of Aberdeen operations is often important in helping to provide access to emerging opportunities in overseas markets, several respondents stressed the continuing need to maintain an active presence in Aberdeen, with its locational advantage often viewed in terms of a concentration of industry-specific knowledge and intelligence (authors' interviews). In this sense, Aberdeen forms a key node within the communication and social networks that structure the global oil industry.

7. Trust and credibility as relational assets

In general terms, respondents recognized the importance of trust in structuring business relationships through various parties' expectations of delivery and performance (authors' interviews). Trust was seen as particularly important in terms of the need to remain flexible and responsive to customers' enquiries and demands. These relationships would conventionally be defined as exchange-based in the sense that they are grounded in commercial transactions. At the same time, however, the expectations of both customers and suppliers are crucially supported and sustained through social relationships between key individuals, which provide a basis for communication and negotiation (authors' interviews). As such, it is clear that the exchange dimension of inter-firm networks in the Aberdeen oil complex cannot easily be separated from social contacts and information transmission. The form of trust that is being invoked here relates more to 'competence' than 'intentions' or 'goodwill' trust (Lazaric and Lorenz 1998, Sako 1998). In this sense, it can be seen as more basic and limited than the higher-level and collaborative forms of trust emphasized in much of the literature

on industrial districts and learning regions (Piore and Sabel 1984, Morgan 1997, Storper 1997). Two key aspects of the local milieu help to explain this emphasis on competence rather than higher-level forms of trust. First, one effect of the unequal power relations between the large operators and contractors and SMEs is to lock the latter into dependent relationships where reputation and competence are regarded as vital for sustaining business. Second, the nature of Aberdeen as a small industrial village means that news of inadequate performance or failure will tend to circulate and spread through overlapping industry and social networks. In this specific context, then, contrary to the assumption running through much of the literature on industrial districts and milieu (Piore and Sabel 1984, Saxenian 1994, Morgan 1997), localization seems to work against the development of high-level forms of trust.

Alongside the emphasis on competence trust, several respondents stressed the notion of credibility. The two concepts are closely related, with credibility also referring to firms' reputation and standing within certain industry and spatial contexts. As one respondent remarked, 'when you approach a new client you have no credibility, other than the word on the street', underlining the importance of performance and responsiveness to the demands of clients. In this sense, credibility is generated indirectly through industry networks as firms develop a track record and presence:

... Credibility is a funny thing, a strange thing, ... after 6 years and 11 months do you have credibility? No, after 7 years you've got credibility, wah you know what happened that month? ... If you listen to the words of the song you can't hurry love, and I don't think you can hurry credibility either ... But I think there's a certain natural progression for companies, ... there's a natural sort of growth pattern ... (SME owner-manager, October 2000, authors' interviews).

As essentially an effect of a firms' reputation and performance, credibility is developed over time as a firm becomes established within a certain area of business activity. Several respondents who stressed the importance of credibility felt that it was difficult to specify the process through which it emerges, suggesting that it can perhaps be viewed as an intangible asset that reflects a firm's presence and position within its immediate business networks. While reputation and credibility can only be developed gradually as a firm becomes known, respondents commented that it was much easier to lose these assets through one instance of perceived failure or inadequate performance. An owner-manager of an internationally-orientated technical consultancy reported that the need to maintain its reputation and standing had prevented the firm from expanding its business in line with the current upturn in oil-related activity because of the difficulties of recruiting staff with the requisite level of experience and knowledge. For the more sophisticated, knowledge-based firms in particular, then, the emphasis on maintaining credibility can encourage an orientation towards consolidation and incremental forms of expansion rather than all-out growth.

At the same time, it is clear that the development of credibility and reputation can generate new business opportunities for SMEs. One respondent stated that most of his firm's growth had been generated through informal communication and reputation, with almost 100% of business coming from people whom the company already knew. By contrast, very little business resulted from advertising or speculative inquiries (authors' interviews). Another innovative, knowledge-based company recently introduced a service offering certain key customers a fuller consultancy service at times of peak business, which involved investing considerable time and effort in building quality relationships with these clients in the expectation that the levels of trust

generated would result in further ‘repeat business’. Of particular significance in this respect are opportunities in emerging overseas markets, and a history and presence in Aberdeen as an internationally-recognized centre of oil-related activities provides firms with an immediate source of recognition and credibility in these markets. Interestingly, one respondent suggested that this can be viewed as a two-way relationship whereby ‘people internationally thought we had credibility because we were Aberdeen-based, [and] the Aberdeen-based companies thought we had credibility because we worked internationally’ (SME owner-manager, October 2000, authors’ interviews). Thus, while much of the literature implies that credibility and competence forms of trust are localized assets, our research suggests that they can also be developed through internationally-orientated networks. In pointing to a direct connection between Aberdeen as a recognized centre and access to international markets, this observation tends to support the notion that Aberdeen can be viewed as key location where wider industry networks converge and intersect (Massey 1994, Allen *et al.* 1998).

While we have focused largely on credibility and competence trust in this section, it is important to stress that more elaborate forms of trust were present amongst a *minority* of Aberdeen-based SMEs. These tended to be more akin to the notions of trust stressed in the literature on industrial districts and learning regions, being associated with innovative projects between groups of firms (Cumbers *et al.* 2002). In this context, one respondent referred to the importance of ‘your gut feeling in building up your relationships’, stating that if he had any doubts about an individual he wouldn’t proceed with the venture ‘as a matter of principle’ since the potential implications would be too costly (SME owner-manager, authors’ interviews). Such comments refer to a higher-level notions of ‘intentions’ or ‘goodwill’ trust within innovative projects which refer to participating firms’ commitment to the venture and their willingness to adjust their activities and routines to the requirements of partners (Larazic and Lorenz 1998). Again, these innovation-related linkages tend to span the three kinds of network identified earlier (Mitchell 1973, Szarka 1990), stretching beyond the ‘vertical’ links of the supply chain to more ‘lateral’ relations with firms offering complementary forms of knowledge.

This brief discussion of trust, reputation and credibility has helped to specify and refine the rather vague notion of trust as a relational asset (Storper 1997) by exploring how particular aspects of trust shape inter-firm networks in the Aberdeen oil complex. This has indicated that it is lower-level notions of ‘competence’ trust, reputation and credibility that are important in structuring dyadic relationships between individual firms. Indeed, the emphasis on credibility that emerged from our empirical research seems to blur the earlier distinction between reputation and trust (Larazic and Lorenz 1998) in the sense that it functions both as an identifiable possession that is gained and lost and a more intangible and emergent effect of direct relationships between individuals within industry networks. On balance, however, the first dimension seems to be more frequently cited by SMEs in the Aberdeen oil complex, and there is considerable overlap between this form of credibility, reputation and ‘competence’ trust. While the notion of credibility may appear to correspond to traditional conceptions of ‘trustworthiness’, it is worth emphasizing that the former term is somewhat broader, referring to firms’ presence, reputation and standing in particular networks rather than merely their reliability and honesty.¹² By contrast, more advanced forms of ‘intentions’ and ‘goodwill’ trust tend to be limited to a small number of SMEs involved in innovative networks.

8. Conclusions

In conclusion, our research clearly indicates that the network concept ‘made sense’ to the majority of respondents (Johannisson 1995: 215). Most firms have developed a range of contacts, encompassing customers, suppliers, firms in similar areas of business and public agencies in addition to the ‘strong ties’ of friends and family. In this sense, Aberdeen is often described as an ‘industrial village’ where a shared experience of oil-related development has generated close relationships between key actors. This reflects, in part, the specific industry and regional focus of our research in view of the importance of personal contacts and networks within the oil industry and the development of Aberdeen as a highly localized ‘cluster’ of oil-related activities. As a location, then, Aberdeen offers distinct advantages for oil-related firms, providing access to crucial forms of industry-specific information and expertise. It is in this sense, above all, that the ‘local milieu matters’, and ‘being there’ (Gertler 1995) offers firms recognition and credibility within the international oil industry. Alongside the clear advantages derived from an Aberdeen location, a key theme of our research concerns the crucial role of wider industry networks as sources of information and knowledge. Indeed, relational conceptions of space (Allen *et al.* 1998, Amin and Cohendet 1999) suggest that local and extra-local networks can be seen as mutually constitutive in the sense that the localized advantages of Aberdeen are derived from its position within wider oil industry structures.

The main purpose of this paper has been to provide an empirical assessment of how networking and learning processes actually operate within a specific local milieu. This offers a potentially valuable contribution to the literature, much of which has been preoccupied with theoretical discussions of networking, trust and embeddedness. As such, we concur with recent calls for more empirically-grounded research, which seeks to ‘test’ theoretical propositions against data gathered from direct contact with the relevant firms and institutions (Maskell *et al.* 1998, Vatne and Taylor 2000). In reacting against the often over-theorized case study approach that is prevalent in the literature, however, these statements tend to fall back upon extensive and quantitative conceptions of empirical research. In this context, we contend that more qualitative modes of enquiry can offer useful evidence, and the combination of quantitative and qualitative methods through survey and face-to-face interviews provides an appropriate way forward (Martin 2001). As we have sought to demonstrate in this paper, such an approach can generate data on both the number and frequency of contacts between actors and wider social and institutional dimensions of networking and learning.

It is worth emphasizing, finally, that studies of networking and embeddedness in local milieux need to be particularly sensitive to the unequal power relations between different groups of firms, an issue that has not been adequately addressed in this paper, which has focused on SMEs rather than the large oil operators and contractors in Aberdeen (figure 1) (although see Cumbers *et al.* 2002). At the same time, it is important to further specify and ‘unpack’ the network concept, perhaps by refining and extending the classification developed by Mitchell (1973) and Szarka (1990). As we have indicated in this paper, firm learning can occur through spatially extensive networks as well as the localized relationships that have been emphasized in the literature on industrial districts and local milieux. This suggests that debates on the construction of regions and localities through wider networks and relations (Massey 1994, Allen *et al.* 1998, MacLeod 2001) can provide important insights to inform

empirical research on the geography of knowledge generation and circulation in particular industry contexts.

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Notes

1. The broader research project from which the paper is derived focused on innovation, diversification and networking among this group of firms.
2. The study adopted an inclusive approach in that firms were included in the sampling frame unless there was definite knowledge that they employed over 500 staff. The telephone survey was subsequently used as a further 'filter' with firms employing over 500 staff excluded from the main study.
3. We estimate that these 192 firms represent approximately 25% of the total SME population; 69 large firms were also contacted, producing an additional 55 partial responses (see note 2).
4. Firms were grouped into four categories according to their responses to questions on innovation and diversification. The number of firms from each of these groups interviewed was in direct proportion to their distribution across the 192 survey responses. Individual firms within these categories were then selected for interview on the basis of four variables covering key aspects of their operations and networking activities.
5. In terms of our classification, manufacturing and business services were the two largest sectors amongst both responding firms and the wider population. The majority of firms (71.4%) responding to the survey had less than 50 employees, with 31.8% employing less than 10 staff.
6. Scottish Enterprise is the main state development agency for lowland Scotland. It is made up of a central core and 12 Local Enterprise Companies (LECs), including Scottish Enterprise Grampian.
7. The Department of Trade & Industry is a department of the central UK government in Whitehall, although parts of the Oil and Gas Directorate are located in Aberdeen. British Trade International is an associated body, which offers support to firms with export promotion and marketing.
8. Of the remaining 10 firms that were interviewed, the views of 7 of them towards public agencies can be described as 'mixed', while 2 were classified as 'neutral', and there was 1 interview in which contacts with agencies were not discussed (reflecting time pressures).
9. This term is used to refer to SE and Highlands and Islands Enterprise (HIE), the equivalent body covering the Scottish Highlands and Islands.
10. For example, one export-orientated firm used such publications to identify companies undertaking new drilling operations abroad, allowing them to approach particular companies that are likely to have a demand for their product.
11. Here, the precise wording of the question is important, with the employment of the phrase 'mainly occur' meaning that it does not necessarily follow that firms indicating that informal communication occurred mainly within Aberdeen are not linked to wider communication networks (only that Aberdeen is the more important source). Conversely, firms stating that communication takes place through wider networks may also be involved in locally-orientated forms of communication. The response merely indicates that the latter are relatively less important than the former.
12. As such, firms with credibility based on performance and reputation will not necessarily be regarded as trustworthy and trustworthy firms may lack credibility.

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