

Public Sector Support for Innovating SMEs

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ABSTRACT. Innovation support for SMEs is considered from the point of view of the “needs” of SMEs in the context of a specific regional economy – London’s Lee Valley region. As identified in the literature and, more specifically, in a survey of 100 innovating SMEs in the study region, attention is focused on the innovation support needs that relate to the size characteristics of SMEs. The difficulties of financing innovation are shown to stem from the attitudes of SME owner managers as well as from supply-side failures. The paper examines four different innovation support instruments, taken as constituting key elements of the support “system” within the region. Drawing on the findings of interviews with client businesses, the paper considers the strengths and weaknesses of each policy instrument. Conclusions relate to the overall impact of innovation support provision, in particular the need for greater integration in the design and implementation of policy instruments.

1. Introduction

In recent years, there has been a growing recognition amongst policy-makers of the importance of innovation to the competitiveness of national and regional economies and of the particular role of small and medium sized enterprises (SMEs) in this process. In the case of the U.K., a series of Government White Papers on Competitiveness during the 1990s emphasised the important contribution of SMEs to the development of a more competitive economy, and recognised that “entrepreneurship and innovation are central to the creative process in the economy and to promoting growth, increasing productivity and creating jobs” (DTI, 1998, para. 2.1). This has resulted in an increasing interest in the kinds of policy instruments needed to stimulate innovation in SMEs and

to help overcome the barriers to innovation. There are now a number of different public and quasi public support instruments aimed at assisting SMEs with their innovation related needs, ranging from some nationally run policy initiatives to other, more locally specific initiatives. The purpose of this paper is to examine the appropriateness of these initiatives in relation to the needs of SMEs in a specific regional economy – London’s Lee Valley region.

2. SMEs and innovation support

In line with recent policy developments, the study adopts a broad interpretation of what constitutes innovation in an SME context. Following Porter’s (1990) emphasis on the importance of the link between innovation and competitiveness, the definition used here includes the development and/or adoption of new products and processes, incremental improvements to products and processes, and new approaches to marketing and/or new forms of distribution. An emphasis on the diffusion and adoption of new knowledge and technology and the role of more incremental innovations in supporting competitiveness (which are less dependent on a formal research and development [R&D] function) is particularly relevant in the context of SMEs (Rothwell and Zegveld, 1982; Bessant et al., 1993, 1994). Such an understanding also corresponds to an increased interest, on the part of many academics, in learning processes, both within firms and between firms and the role of external sources of knowledge, stimulus and support (e.g. see Asheim, 1996; Lundvall and Borrás, 1997; Cooke and Morgan, 1998).

Given this approach to defining innovation, the justification for providing innovation support which is specific to SMEs rests on the recogni-

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tion that there are certain size-related characteristics of SMEs that have important implications both for their support needs and for the way in which those needs are addressed. First, SMEs are constrained by their limited internal resources, particularly with respect to finance, management resources and their knowledge-base compared with larger firms. Limited financial resources clearly make it harder for smaller firms to support and to reap the benefits of innovative activity, particularly in terms of R&D and the marketing of new product innovations. In this respect the difficulties that small technology-based firms face in gaining external finance to support innovation has been the subject of considerable attention in the U.K. in recent years (CBI, 1997; Bank of England, 1996; HM Treasury, 1998).

Furthermore, limited human resources can influence a firm's propensity and ability to be aware of, and respond to, opportunities and threats presented by the external environment. This includes scanning for new knowledge relevant to the business that in a large firm would be typically undertaken by dedicated staff, e.g. R&D staff in the case of technical knowledge (Cohen and Levinthal, 1990; Seaton and Cordey-Hayes, 1993). The limited internal resource base of smaller firms is a key justification for interventions designed to provide external support for innovation in SMEs. With respect to financial support this applies particularly at the start-up stage or in very young businesses where the opportunities to resource innovation and business development internally are more limited than in established firms. The limited internal knowledge-base and scanning ability of smaller firms is a key rationale for the publicly subsidised provision of technology support by intermediary organisations in terms of information, advice and consultancy (e.g. see Hassink, 1996, 1997; Seaton and Cordey-Hayes, 1993).

Secondly, a typical characteristic of small firms is their distinctive organisational culture, stemming from the combination of ownership and management that typifies the majority of SMEs. Hence there is a need to understand the role of the individual traits of the owner-manager in the way in which the business is managed and developed, which in turn affects management behaviour, attitudes to risk (and hence innovation), and

the nature and extent of external financing that is sought. These attitudinal and behavioural characteristics all have potential implications for the nature and extent of the support needs, as well as effective delivery of external support to small companies. The behavioural characteristics of small firms that stem from the combination of ownership and management can result in a reluctance, or even a resistance, to taking in external help for a variety of reasons. These include: doubts about the value for money on the part of the business owner or manager; a scepticism about generalist advice, particularly where this is offered by advisers who lack a detailed sectoral knowledge; and a preference for autonomy which small business owner-managers may perceive is threatened by the use of external advice. This may result in a greater use of informal rather than formal channels of support in cases where the professional management resources (i.e. where managers lack formal management training or management qualifications) are limited (Smallbone, 1997).

Thirdly, SMEs have less ability than larger companies to shape and influence their external environment, e.g. in their relationships with customers, suppliers, sources of finance and the labour market. This means that the smaller firm is typically faced with a more uncertain external environment than a larger firm. As a consequence, competitiveness often relies on the firm's flexibility, responsiveness to customers and adaptability to external changes, which are key attributes that need to be considered and enhanced when designing support programmes and initiatives targeted at SMEs.

A further issue which arises when considering the "support needs" of SMEs is the distinction between "expressed needs" and "latent needs" or potential. The distinction refers to the difference that can exist between what a business owner or manager's stated wants or expressed needs are, compared with what might potentially emerge from a systematic audit of the strengths and weaknesses of the firm in terms of resources and competence. Differences between "expressed" and "latent" needs/potential often stem from the difficulties that many SME owners-managers have in diagnosing the external support requirements of their business, particularly in cases where they have limited formal professional management

training. For example, what may be expressed as a need for marketing support may conceal a deeper latent need for a root and branch strategic review of the business, with possible implications for the core business definition. Differences between expressed and latent support needs have important implications for policy, particularly where the objective is to elicit the full potential of the business, or to influence the nature of change, rather than the support offered being simply "client"- or "market"-led.

The distinctiveness of SMEs affects their support needs and how such support is delivered if it is to be effective. In addition, ongoing relationships with external providers of support are more likely to provide a basis for competence-building and learning than more one-off and piecemeal interventions (e.g. see Hassink, 1996, 1997). At the same time, it must be recognised that it is neither realistic nor desirable that all of the support needs of firms (expressed or latent) can or should be addressed through public policy. In this respect, the aim should be to focus those public resources that are available on the needs of the economy at the regional (or national) level rather than simply on the expressed needs of individual firms themselves. Thus, the nature of innovation support policy may be shaped by regional (or national) priorities set within a strategy for innovation (Morgan and Nauwelaers, 1999; Thomas, 2000). In producing such strategies, attention should be paid to the strengths and weaknesses of the innovative capability of the economy, and the priorities for raising it, taking into account the wider socio-economic benefits. This more strategic rationale for providing support for the innovation support needs of SMEs might include policy measures aimed at stimulating the creation of new, innovative businesses and raising the level of innovative activity in existing enterprises, rather than solely meeting the expressed needs of SMEs themselves.

3. Aims and methodology

This paper is concerned with assessing the appropriateness of the public and quasi public policy instruments that are available to support innovative activity in SMEs within a chosen case study area, namely the Lee Valley area of North East

London and adjoining parts of the outer metropolitan area. Using the results of a survey of a sample of innovative firms in the study region, the paper considers the extent to which the existing policy instruments are addressing the needs of firms and whether there are some gaps in provision which public support needs to address. The paper focuses on 4 of the main types of innovation support policy initiative which apply within the study area and will consider the underlying rationale of each one, and the kind of SME that each is targeted at. In addition, the main strengths and weaknesses of the instruments will be identified, particularly with respect to their overall impact.

The evidence on which the paper is based is drawn from a European Commission Targeted Socio-Economic Research (TSER) Programme project entitled "SME Policy and the Regional Dimension of Innovation" (known as SMEPOL).¹ The main objective of the SMEPOL project has been to undertake a comparative analysis of existing policies and programmes to encourage and support innovation in SMEs with a view to identifying policy lessons and establishing best practice.

The authors have been responsible for the U.K. national study which has focused on London's Lee Valley area and adjacent parts of the outer metropolitan area (OMA) in the counties of Hertfordshire and Essex. One of the main reasons for the choice of the Lee Valley area is that it has been experiencing industrial decline for some years and has qualified for support from EU Structural Funds (Objective 2 status) over the 1994–99 period. It is an area where there has been concern over the lack of innovation in SMEs resulting in several policy initiatives designed to encourage innovation and the adoption of new technologies. Part of the OMA was selected for inclusion to provide a contrast with the Lee Valley area since it has been a growing and dynamic economy with a high proportion of innovative SMEs. In fact, the latest Community Innovation Survey (Craggs and Jones, 1998) demonstrates that SMEs in Hertfordshire have a higher propensity to innovate than those in London, especially in manufacturing.²

This paper draws upon a number of surveys that have been conducted of SME owner/managers

within the study area. First, a telephone survey was conducted in 1998 of 100 SMEs that, on the basis of answers to a series of filter questions, were shown to be “innovative” in that they had all introduced some changes to their business in terms of product, process or marketing innovations in the period 1993–98. The main aims of this survey were to (i) identify the main barriers which firms were facing in making different types of innovation; (ii) investigate the extent to which external resources and assistance are being used to support innovation in SMEs; and (iii) identify the extent to which SMEs have innovation support needs. This survey is also used as a “control group” in comparison with the surveys of clients of particular agencies or participants in particular programmes. The survey sample was focussed on three broad sector groups: (i) food processing; (ii) engineering (including computer manufacturing, machinery equipment manufacture, electrical and instrument engineering); and (iii) “business services” (including computer, telecommunications and other business services). A sector focus is justified by previous research which demonstrates considerable variation between sectors in the nature and extent of innovation in SMEs (North et al., 1997). The aim was to select sector groups that are potentially important to the economic base of the study region, whilst capturing the variety of types of innovation in SMEs by including sectors with different technology bases.

Secondly, telephone and some face-to-face surveys were conducted in 1998–99 with a sample of SMEs in the study area which had been recipients of various types of innovation support. They comprised: (i) 40 firms which had received funding under the Government’s Smart Award Scheme; (ii) 70 firms which had received assistance from the Innovation and Technology Counsellors provided by Business Link; (iii) 62 firms that had been clients of the Lee Valley Centre, which is a university based technology support centre; and (iv) 14 firms which had been assisted by the Lee Valley Business Innovation Centre. These client surveys provided insights into the types of businesses that were being targeted, the type of assistance received and the extent to which it addressed the needs of the firms. Finally, face to face interviews were conducted with

managers and support staff involved with the various initiatives; these helped identify problems and strategic issues affecting the delivery of innovation support in the region from the point of view of practitioners.

4. The key innovation support instruments

Figure 1 presents an overview of the innovation support system within the study area, identifying the main programmes and agencies involved. Much of the funding for innovation support comes from U.K. central government or EU level programmes, although some programmes apply everywhere throughout the U.K. whilst others apply specifically to firms in designated assisted areas. Figure 1 attempts to show the linkages between SMEs and the various programmes and agencies. In most instances, the experiences of SME owner managers will be at the level of dealing with the advisers and consultants within the regional level agencies themselves, rather than with those responsible for the management of the programmes.

The U.K. Government’s Smart Scheme is a national programme which applies to eligible SMEs wherever they are located. Originally launched in 1986, Smart focuses on supporting the development of new technology-based products that are “new” within a sectoral or national context. It is based, therefore, on a narrower view of innovation than that used in other innovation support policies targeted at SMEs. Its rationale is also based upon the view that there is a gap in the venture capital market as a result of the reluctance of venture capitalists to make investments of less than about £250,000 (Bank of England, 1996). Smart takes the form of an annual competition for financial grants run by the Department of Trade and Industry (DTI) and aims to stimulate highly innovative but marketable technology in small firms. During the period of this study the award offered two kinds of grant: first, *feasibility studies* into innovative technology for firms with up to 50 employees; and secondly *development projects* up to pre-production prototype stage of new products and processes, involving a significant technological advance, for firms of up to 250 employees.

The second example of innovation support

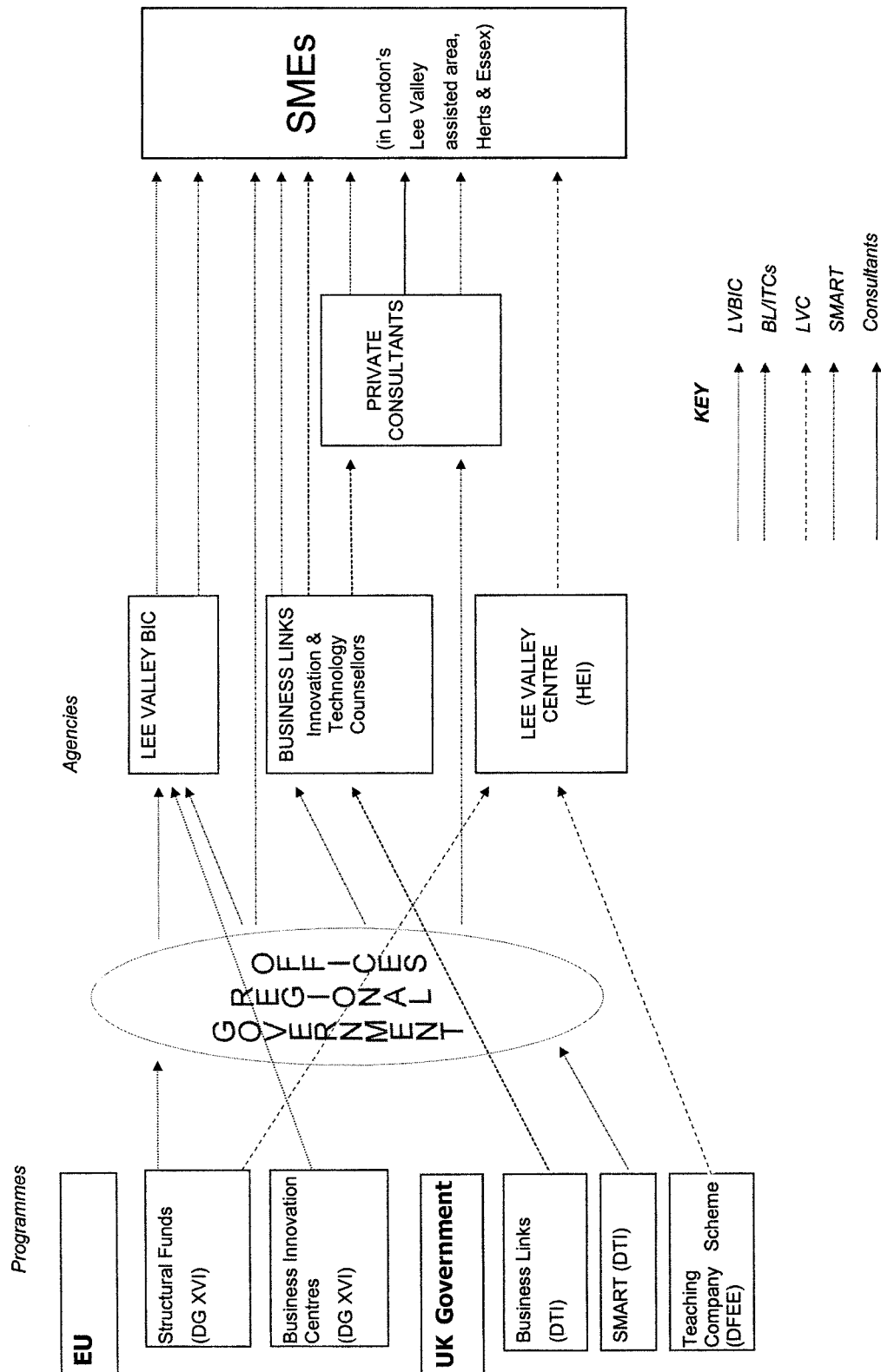


Figure 1. The innovation support system within the study region showing the main channels of assistance.

again originates with U.K. central government and has a national coverage, although in the form of a network of Business Link (BL) companies set up by the Department of Trade and Industry in 1993. Within the study region there are 3 such BL companies. BL is based on "the one-stop-shop concept" that encourages firms to access a wide range of business support services (including personal business advice, diagnostic and consultancy services, marketing training and advice, exporting and international trade advice, and financial advice and information) through a single channel. In addition, most BLs employ some specialist advisers including Innovation and Technology Counsellors (ITCs) whose role is to assist firms with new product development and the adoption of new technologies. A characteristic of BL is that it aims to offer broadly-based innovation support and encourages innovations that are "new to the firm" as well as those that are "new to the industry". Moreover, it takes a fairly holistic view of the development of businesses and attempts to provide an integrated range of services to client firms. Thus technical advice is unlikely to be given in isolation from advice on other aspects of the business.

The EU funding in the form of Structural Funds has been pivotal in initiating two regional level innovation support initiatives, namely the Lee Valley Centre (LVC) and the Lee Valley Business and Innovation Centre (LVBIC). As such, these initiatives have a role in raising the innovative capability of businesses within the Lee Valley region. The LVC was set up by Middlesex University in 1995, as part of the programme for the regeneration of the Lee Valley subregion using EU Structural Funds. It provides an example of a Higher Education Institution (HEI) becoming involved in assisting SMEs with innovation, design and technology transfer. Thus the stated aim of the Lee Valley Centre (LVC) has been "through the promotion of innovation, new technology, good design and effective communication, to help businesses expand and become more competitive and profitable and to stimulate industrial and commercial growth in the Lee Valley region". During the period 1995–1998 the Centre provided its services under four semi-autonomous functions: a design management centre, a telematics support centre, a technology trans-

fer centre, and a Teaching Company Scheme centre.

The LVBIC is one of a Europe-wide network of 140 Business Innovation Centres (BICs) (of which 10 are in England) created since 1984 by the EC Regional Directorate, DGXVI, with a view to stimulating the creation and expansion of innovative SMEs in Less Favoured Regions of the European Union. BICs are therefore essentially regional/local scale initiatives for innovation support, although they represent part of a wider strategy for stimulating innovation in disadvantaged areas of the European Union. The support provided by BICs generally takes the form of services to support new product development, intellectual property protection, business and market planning, and provision of venture capital. The emphasis of the BICs is on the commercialisation of innovative ideas. In this respect they aim to provide a comprehensive package of support for innovative new ventures and existing projects. In emphasising the commercial application of innovation, BICs also aim to address the weakness that has been identified in small technology based firms of an over emphasis on technical development at the expense of marketing and general management skills (Monck et al., 1988; Oakey, 1991; Berry and Taggart, 1997).

The LVBIC was launched in November 1995 by a partnership led by London Borough of Enfield and including Middlesex University, Ford Motor Company, and North London Chamber of Commerce. It is located on a newly designated science park, The Lee Valley Innova Science and Business Park, which includes incubation units for innovative business start-ups. The distinctive characteristic of the LVBIC is its focus on the provision of an ongoing package of intensive support for selected innovative individuals and enterprises, with a particular emphasis on more technological opportunities and on product innovations.

The initiatives examined are not the only forms of innovation support available to SMEs in the study region, but they are the main ones. Perhaps the most important government scheme not directly evaluated for this study is the Teaching Company Scheme, which involves placing a graduate in the appropriate specialism in a company for a period of two years in order to support the transfer of knowledge and skills.³

Before looking at the effectiveness of each of the four policy support instruments, the next section of the paper will draw upon the results of the control group survey of 100 firms (described above) to gain some insights into the support needs of SMEs within the study region.⁴

5. Evidence on the innovation support needs of SMEs

One way of identifying “support needs” is to ask managers about the main barriers to innovation. With regards to product/service innovation, the majority of firms experienced constraints, although one constraint was identified more frequently than the others. Thus whilst three quarters of the firms actively involved in developing new products identified at least one barrier, finance proved to be the most commonly identified barrier (49% of firms), followed by time constraints (14%) and shortages of skilled labour (10%). However, there were significant sectoral variations (significant at the 0.01 level) in the extent to which finance was perceived as a constraint: 74% of engineering firms that expressed an interest in new product development, compared with 42% of business service and 32% of food processing firms. A similar sectoral pattern applies to those firms that have actively sought external finance to support product/service innovations. New product development in engineering is likely to be more costly in terms of materials and equipment than in other sectors and therefore more likely to be beyond the internal resources of the firm.

Similarly, finance was the main constraint identified by SME managers as affecting process innovations and, once again, this most commonly applied to engineering firms. Three quarters of those firms that had identified a need to raise the firm’s level of technology and technological competence experienced barriers, with finance being identified by over half (59%). In the majority of these cases the difficulties resulted from raising finance internally (45%) rather than externally (14%). Financial constraints, both internal and external, were significantly more likely to be identified by engineering firms than by firms in other sectors (78% compared with 42% in business services and 16% in food processing) (0.0001 level), reflecting the more technically

specialised and capital intensive character of engineering. Other barriers mentioned included: “a shortage of management time” (20%), “a lack of in-house expertise” (10%), or that “the volume of production was insufficient” to warrant technological upgrading (10%).

Although finance was identified as the main barrier to making both product/service and process innovations, a key finding was that the problem is not simply that firms looking for external finance cannot obtain it, but that most small firms do not seek it. For instance, although half of the firms actively interested in developing new products/services reported a shortage of finance as one of the main barriers to achieving it, less than one in five had previously sought external finance to support product/service innovation, and only slightly more had sought external finance for process innovation. Hence the financial constraints that SMEs report do not result solely from supply side failure but, as noted in section 2, from the conservative attitudes of many SME owners and managers to external finance. The problem is not simply that firms looking for external finance cannot obtain it, but rather that most small firms do not seek it either because they believe they stand little chance of getting it, or because they perceive it as too expensive, or because they simply wish to minimise their exposure to debt. In other words, the financial constraints on innovation that managers emphasised in the survey result from the reliance on finance that is internally sourced (i.e. retained profits and/or increased personal equity on the part of the owner) rather than necessarily because firms had been refused finance by banks or other providers. This suggests that one of the tasks of innovation support should be to encourage attitudinal change on the part of owner-managers with respect to external finance, where this is seen as necessary for the growth and development of the business. This would involve increasing their awareness of forms of financing (e.g. asset-based) that may reduce their perceived exposure to risk.

When the extent to which SMEs actually use external advice and consultancy to support the innovation process is examined, the key finding was that less than half of innovating firms had made use of such assistance over the 1993–98 period. Forty four per cent of those firms engaging

in product or service innovation had made some use of external advice or consultancy, compared with 27% of those undertaking process innovation and 25% of those introducing new marketing methods (Table I). External advice and consultancy was more likely to have been utilised by engineering firms (64% of firms with innovative products), compared with 33% in food processing and 32% in business services (difference significant at the 0.05 level). This finding is congruent with previous research showing that external assistance is more commonly used in technology-based sectors, where firms are more likely to need to draw on specialist technical expertise outside of the firm (Smallbone et al., 1993; North et al., 1997).

It would appear that the majority of firms obtain external advice from private rather than public sector sources (Table I); just under half of the firms using external advice and consultancy used private consultants. In contrast, less than a fifth used Business Link, the most frequently used public sector source of assistance.

External support was found to be used most frequently by firms in the 10–49 size band, both in relation to finance and external advice and consultancy. For firms in this group sustained innovation can place heavy demands on the organisation's internal resource base, in terms of both finance and management, particularly if they are

seeking to make the transition from owner-management to team management, which makes them a potential target for innovation support measures.

6. The effectiveness of innovation support in the study region

Having considered the support needs of SMEs and the extent to which they are seeking external assistance, attention is now focused on the kind of support that is currently available to SMEs within the study region, concentrating upon the four contrasting examples previously described: (i) the national Smart Award Scheme; (ii) the Innovation and Technology Counsellor support provided by Business Link; (iii) the regional level Lee Valley Centre; and (iv) the regional level Lee Valley Business and Innovation Centre.

6.1. The Smart Scheme

Given the strict nationally applied criteria that applicants for Smart have to meet, its appropriateness to the needs of firms in particular regional economies is likely to depend upon the regional sectoral and business structure. Within the study region the take-up of the Smart Scheme is much higher in the outer metropolitan area (especially in Hertfordshire) than in London, and especially in the Lee Valley area. As mentioned earlier,

TABLE I
Sources of external advice and consultancy by area of innovation

	Product	Process	Marketing	No. of firms using each source at least once	Percentage of those firms ($n = 60$) using external assistance
Private consultants	15	9	7	27	45%
Business link	7	1	4	10	17%
Suppliers	4	3	2	9	15%
Higher education	4	1	0	4	7%
Sector bodies	3	0	0	3	5%
Business associations	1	0	0	1	2%
Innovation centres	0	0	1	1	2%
Customer	0	0	0	0	—
Other	6	2	3	5	28%
Innovating firms using at least one form of assistance to support innovation	28 (44%)	15 (27%)	17 (25%)	60 (60%)	
Total no of innovating firms	63 (100%)	55 (100%)	69 (100%)	100 (100%)	

evidence indicates that SMEs in Hertfordshire have a higher propensity to innovate and are more likely to be in sectors with a strong R&D element than those in London. This is reflected in the pattern of demand for the Smart Scheme. A low demand and dearth of good quality Smart applications are found in areas like the Lee Valley, where the more technology-based industries are under-represented in the industrial structure.

In view of the fact that the Smart Scheme had been in existence for more than ten years at the time of the survey, a high level of awareness might reasonably be expected. Just over a third (37%) of firms in the control group survey were aware of the Scheme, but this rose to nearly two thirds (63%) in the case of the engineering sector where firms are more likely to be involved in technical development and therefore eligible for Smart.

From the survey of 40 client firms in the study region it is clear that Smart winners are drawn from a narrow segment of the SME population (see Smallbone et al., 2000b for a more detailed account). They are predominantly from manufacturing sectors, especially medical and optical instruments and various machinery and equipment manufacturing sectors, although a few computer service firms are also represented. The majority are young (a median age of 6 years) and very small firms (a median size of 4 employees). In line with the aims of the Smart Scheme, these firms are highly R&D oriented, both in terms of the proportion of staff time allocated and in terms of the proportion of current income dedicated to R&D.

The Smart Scheme is clearly fulfilling an innovation support need amongst the relatively narrow band of firms that qualify for it. Over half (57%) of the client firms identified finance as the main barrier to product innovation prior to obtaining a Smart award. The results also show a high level of additionality. According to their owners three quarters of the new businesses founded in the year that the Smart Award was received would not have started without the grant. In the case of existing businesses, 35% of the projects would not have gone ahead, 52% would have been delayed and a further 7% would have proceeded on a smaller scale. However, the Scheme appears less successful in its aim of helping innovative firms gain access to sources

of external finance. In this respect there is little evidence of additionality in terms of leveraging additional private funding into the innovative projects of Smart winners. Only a third of firms had sought external finance after the award was obtained, and typically they raised just 10% (median) of the total project costs from private sources (from banks, venture capital companies, and informal risk capitalists). A further problem relates to the lack of support for commercialisation once the Smart project is completed; in this respect the successful achievement of commercial objectives is much less common (40% of surveyed clients) than the achievement of technical/design objectives (88% of clients).

Overall, it would seem that the Smart Scheme has been of limited value to the innovation support needs of both existing SMEs in the study region and for the majority of start-ups. Its focus, until recently, on more novel technology-based innovations and its strict criteria mean that very few firms have qualified to receive support, especially in the Lee Valley area. At the same time, the types of innovation projects supported by Smart can potentially contribute to the development of activities that are new to the region, although the very small numbers involved hitherto limits the overall impact. The low take-up of both Smart and the Teaching Company Scheme (which also tends to be focussed on more technology-based firms) within the Greater London region as a whole was identified as a cause for concern during interviews with regional government officers responsible for administering the Scheme.

There have been a number of recent developments aimed at addressing some of the identified shortcomings of Smart. First, Smart winners' clubs have been encouraged in a number of regions including London with the intention of helping to address some of the problems commonly experienced by innovative small firms (particularly with respect to commercialisation) and facilitating mutual support and learning between award winners. Secondly, following earlier criticisms of the overly stringent conditions of the Scheme, in 1999 it was expanded in England to include three further elements. These new elements provide smaller grants to support: (i) *Micro Projects* – low cost technology based innovations in businesses with fewer than 10 people; (ii) *Technology*

Reviews – expert reviews to help SMEs benchmark themselves against best practice technology in the sector; and (iii) *Technology Studies* – for SMEs to help identify technological opportunities which may lead to innovative products and processes. These new elements are aimed at helping small firms find new applications for existing technology, as opposed to the more novel developments typically supported by the Scheme. This is likely to have the effect of making the Scheme more appropriate to a wider range of SMEs, including the kind of “technology follower” SMEs that tend to predominate in the Lee Valley region.

6.2. *Business Link Innovation and Technology Counsellors*

In view of the high level of national publicity and media coverage that the Business Link (BL) initiative received during the 1990s, together with the wide range of business support services that can be accessed via BL, it is hardly surprising that 84% of control group respondents had heard of this support agency, a far higher level of awareness than with the other support measures. There was little variation in awareness levels between either size or sector groups. However, despite this high level of awareness overall, less than a fifth (17%) of the control group had used assistance from BL in relation to making their innovations. Thus, on this evidence, it appears to be a minority of innovating SMEs which avail themselves of the kind of services provided by BL's Innovation and Technology Counsellors (ITCs).

From the survey of 70 BL client firms, it appears that BL is providing assistance to innovating firms drawn from a wide range of different sectors, although the evidence indicates that the kind of assistance provided by ITCs may be more relevant to firms in the manufacturing (and particularly in engineering) rather than the service sectors. The majority of clients appeared to be well established, having been in existence for at least 10 years, indicating that it is not just young firms that are in need of innovation support.

A key feature of BL business support services is that they are targeted at firms that can demonstrate growth potential. The survey evidence indicates that this is being achieved since the BL

clients had a better growth performance than did the innovative firms in the control survey; for example, the BL client firms achieved a median net employment growth of 38% over the 1993–98 period compared with a 24% increase in the control group. The implication is that there are likely to be firms that are trying to innovate but which are not qualifying for BL support because they are not growing sufficiently. There may be a tendency for BL advisers to select firms which can already demonstrate growth rather than those that could achieve it with appropriate assistance.

Given the broad approach to innovation that underpins the kind of support provided by BL, it is not surprising to find that the client firms have been involved in making a number of changes, particularly in terms of new market development and opening up new geographical markets. This is likely to reflect a particular strength of BL which is the provision of assistance with market development and the adoption of new marketing methods. The holistic approach to innovation adopted by BL means that firms that may be seeking help with product development or particular technical problems may end up receiving assistance with the marketing of their products and services. In fact, half (49%) of the surveyed firms have received assistance with marketing. BL is playing a key role, therefore, in providing the marketing support that innovating SMEs require if they are to exploit the full potential of their innovations.

Part of the rationale for BL is that it helps SMEs access the support available from private sector consultants and advisers. The evidence from BL clients suggests that this is being achieved, since three quarters of the firms had been directed to other sources of specialist expertise by the BL advisers. This proved to be less likely in the case of very small firms (64%) than medium firms (82%), perhaps indicating that BL advisers are more likely to be able to satisfy the more generic requirements of very small firms themselves.

In terms of the benefits of BL assistance to its client firms, the survey evidence indicates that BL does play an important role in helping certain types of SME overcome barriers to innovation. Whereas just under a third (31%) of the managers interviewed considered that the assistance received from BL had enabled them to overcome partic-

ular difficulties relating to making innovations, this applied to a higher proportion (40%) of the very small firms (i.e. in the 1–9 size band). This further suggests that the more generalist advice that BL advisers are able to provide is likely to be of more assistance to very small firms than to larger firms, where more specialist help may be required. Interestingly, the majority (88%) of the BL clients consider they would have gone ahead with their innovations in some form or another without BL assistance. Whilst this might appear to suggest that BL assistance has low additionality, its main value appears to be in terms of helping firms reap the full commercial benefits from their innovations.

6.3. *The Lee Valley Centre*

Compared to a national programme like BL with all its media promotion, the level of awareness of regional level innovation support agencies is much lower, with under a quarter (23%) of the control group respondents having heard of the Lee Valley Centre (LVC), and only 2% of them actually having received assistance from the Centre. As with other sources of innovation support, awareness levels tended to be higher amongst engineering firms (31%) than amongst business service (18%) and food firms (16%).

Many of the difficulties experienced by the LVC appear to relate to the problems of targeting SMEs and identifying their support needs. At the time of its formation, there was no systematic attempt by the LVC managers to carry out an audit of the needs of SMEs in the region. It was assumed that once established there would be a steady growth in demand for the services offered. In the event, some of the projects have clearly met the needs of SMEs in the region, whilst others have not. The most successful project has been for the telematics support centre, there being a clear demand from a wide range of SMEs for basic ICT training courses including Internet access and Webpage design. The design management centre has also met with an increasing demand for its services, particularly since having developed a “menu” of clearly identifiable services that it could offer businesses. However, the Teaching Company Scheme initiative and the technology transfer function have proved less successful,

resulting in both functions being closed down in early 1998. In the case of the former, SMEs have been reluctant to make the commitment to taking on a graduate for a period of two years to assist with the transfer of technical and management skills. In the case of the latter, similar problems were experienced in engaging the interest of local SMEs in the ambitious range of manufacturing support and technology transfer services offered.

The survey of 62 LVC client businesses shows that the Centre attracts firms from a wide range of manufacturing and service sectors, including software, technical consultancy, wholesaling, food, clothing, and furniture. Not surprisingly, they consisted mainly of firms that were interested in improving their level of technology, with two thirds having a plan for upgrading their technological base. However, only a small minority (7%) considered themselves to be abreast of the latest technology and/or leaders in their field. This suggests that the kinds of services provided by the LVC are more likely to be relevant to “technology followers” rather than to “technology leaders”.

According to the respondents, the most commonly identified barriers to improving the technology of the firm were “insufficient internal financial resources” (cited by 35% of clients) and “difficulty in obtaining external finance” (35%), followed by “lack of in-house expertise” (15%) and “not enough time” (11%). These findings are broadly in line with the barriers to improving technology experienced by firms in the control group (section 4). It indicates that the kind of support provided by the LVC will be worthwhile only if firms are also able to overcome these financial constraints to innovation and technical change. It also demonstrates the importance of raising awareness within local businesses of sources of external finance, changing their attitudes towards using external finance, and enabling them to access the finance available.

The LVC example also illustrates some of the well-documented impediments to collaboration between HEIs and SMEs which stem from a mismatch between the organisational structure and culture of universities and the needs and culture of SME owner managers (e.g. Charles and Howells, 1992; Hassink, 1996). First, the possibilities for collaborating with SMEs are affected by the extent to which the knowledge resources

available correspond to the needs of businesses. In this respect, some of the LVC projects have received a number of enquiries from companies seeking expertise in disciplines not covered by the parent university. And secondly, a number of potential projects have not progressed because university specialists do not have the time nor the motivation to prioritise helping local SMEs. Loss of academic staff from the engineering departments, together with the more immediate pressures to cater for students, have meant that staff have been unable in some cases to provide the rapid response required by businesses.

6.4. *The Lee Valley Business and Innovation Centre*

As with the LVC, awareness of the Lee Valley Business Innovation Centre (LVBIC) amongst the control group was relatively low, with only a quarter of the respondents being aware of the Centre and none of them having received any assistance. Similarly, awareness levels were higher in the case of engineering firms (31% of them), compared with business service firms (18%) and food firms (22%). According to the LVBIC staff, the fact that they are not generally well-known is an advantage, given the large number of referrals and the limited resources available for providing such intensive support. The majority of LVBIC's clients (65%) are referred by Business Link, with a further 25% from banks and professional advisors. Of these referrals, 80% tend to be rejected straight away because they are judged to be insufficiently innovative and/or commercially non-viable.

To assess the effectiveness of the LVBIC, 14 face-to-face interviews were conducted with LVBIC clients during March 1999.⁵ The interview findings indicate that the support provided by the LVBIC does address the needs of embryonic and start-up businesses, particularly given the prior negative experiences recounted by most of these clients with respect to the weak support for innovative individuals and small businesses in the U.K. The particular strength of the LVBIC appears to be the ongoing nature of a package of affordable support for selected innovative projects. A key component of the support package provided by LVBIC is the provision of finance in the form

of a short-term loan or as equity, with the BIC's contribution typically being around 10–15%. LVBIC does not charge fees but aims to gain a return through taking out an equity in the innovating company or via a royalty return on licence. As well as providing much-needed financial support in the early stages of product innovation, the LVBIC has also helped some of its clients lever in funds from other sources, including obtaining bank loans under the DTI's Loan Guarantee Scheme (LGS), since commercial lenders feel more comfortable in supporting an innovative project when the risk is shared with other partners. It has also helped some of its clients prepare successful applications for Smart awards, and is valued as an entry point for accessing other networks, including other sources of specialist expertise (i.e. universities) and other government and EU support programmes. Some clients, particularly those located in the incubation business units within the Centre, also valued the close proximity and contact with other innovative businesses. In this respect the Centre appears to offer an environment conducive to mutual support and learning.

Finally, a number of clients drew attention to a possible important area of weakness in the support service, notably an inability to support larger projects financially, particularly with respect to commercialisation, and the lack of access to sources of venture capital. With regard to the wider U.K. climate for innovative small enterprises, the key problem identified by all clients is insufficient financial support for innovation. In this respect the support that the LVBIC is able to provide is also limited, although at the time of the study efforts were being made to establish a hedge fund drawing on the European Regional Development Fund.

7. Conclusions

The four examples of public/quasi public sector support for innovation in SMEs in the study region differ in terms of their origins, their rationale, and the kinds of SMEs targeted. Although they do not constitute a fully integrated innovation support system, on balance they tend to complement rather than duplicate each other. In terms of the numbers of firms using public sector innovation support, it

is Business Link that has the highest level of use and appears to be relevant to the needs of the largest proportion of firms across a wide range of sectors. In comparison, the Smart Scheme is targeted at a relatively small number of the most innovative firms in the technology-based sectors, and the Lee Valley Centre has experienced difficulties in targeting firms and in developing services that SME owner managers see as relevant to their needs. The LVBIC is playing a distinctive role in helping to incubate new businesses based on innovative products and services, rather than meeting the innovation support needs of existing firms.

Overall, the public support for innovation that exists within the study region has to be seen as rather selective, with many SMEs lying outside the target groups of the policy measures. This leads to the identification of three groups of firms that appear to have some innovation potential but which have been inadequately catered for by the available innovation support instruments:

- (i) *Firms that are engaged in product/service innovation but which fall below the stringent criteria of the Smart Scheme:* Because of the focus of the Smart Scheme on cultivating more innovative applications of technology, there are large numbers of SMEs within the study region which are engaged in product and service innovation but do not qualify for financial assistance because they are either not in R&D intensive sectors or their innovations are of a more adaptive/incremental nature. Previously, some of these firms would have qualified for a Regional Innovation Grant which applied to SMEs within the Lee Valley Assisted Area, but this has since been withdrawn. As the various surveys have shown, finance emerges as the main barrier to making innovations, showing the need for some form of financial assistance with innovation with a lower "innovation" threshold. It is possible that new elements introduced to the Smart suite of assistance in England in 1999 will help to address this problem.
- (ii) *Firms that are growth orientated and innovating but find growth difficult to achieve:* Whilst Business Link has been successful in implementing the national policy objective of

supporting SMEs with growth potential, its targeting criteria may be somewhat conservative by focusing mainly on firms that are actually growing (not least because they are easier to identify) than on firms that are growth orientated but as yet not achieving it. The control group survey has shown that there are innovating firms in the SME population in the study region which are growth seeking but currently underachieving. There is likely to be potential added value in helping these firms to improve their performance.

- (iii) *New firms:* Although there has been a recent recognition of the need to improve the availability and quality of information and advice for new business start-ups at a national level (particularly those with high growth potential), through most of the 1990s the emphasis of Business Link has been on support for established firms. Since new businesses represent one of the means for introducing new types of economic activity into a region, there would seem to be a case for a more concerted effort to encourage and support innovative start-ups, particularly those that are knowledge based and focused on the Lee Valley area. In the past, the Smart Scheme has been too narrowly focused to meet the support needs of all new firms of this type and the number of businesses assisted by Smart and the LVBIC combined is very small. In this regard, it should be noted that in December 1998, the U.K. Government announced a new programme of support for start-ups with high growth potential that would appear to address this gap.

The fact that problems in accessing finance to support innovation (including marketing/commercialisation) is a theme that emerges from both the control group survey and the evaluations of the individual policy initiatives indicates that this is a key deficiency to be addressed. The policy response here is likely to vary according to the type of innovative activity involved, ranging from encouraging and facilitating a bank loan to finance the acquisition of new equipment, to finding an equity partner to support the commercialisation of a new product. The overall conclusion here relates

to the need for greater "holism" in the design of support instruments and their integration within the wider support system, including private sector sources of venture capital. The U.K. Government's commitment to the creation of new regional venture capital funds will clearly have an important potential role to play in this respect (DTI, 1998).

As identified in the second section of this paper, there is another rationale for an innovation support policy besides that of meeting the needs of the firms themselves. This has to do with the wider benefits associated with strengthening the innovative capability of firms within a regional economy. However, the study leads to the conclusion that the overall impact of the existing public policy measures on the innovative capability of SMEs in London's Lee Valley region is partial for various reasons. First, the small scale and fragmented nature of all but the Business Link initiative limits their overall effect. Secondly, the penetration of most of these support initiatives, as measured by the number of firms assisted, is typically small with only Business Link being used by a significant minority of firms and then mainly for non-specialist support. Thirdly, the survey of innovative SMEs revealed that there is a low level of awareness of the support available, again with the exception of Business Link services. This suggests that a more strategic and co-ordinated approach to providing innovation support is needed if the aim is to strengthen the innovative capability of SMEs in the region. In this respect, it remains to be seen how effective the current attempt to produce an Innovation and Knowledge Transfer Strategy for the London region will be in responding to this challenge (LDP/GOL, 1999).

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Notes

¹ This involved seven partner countries: Austria, Denmark, Italy, the Netherlands, Norway, Spain, and the U.K.

² Data supplied to the authors by the Department of Trade and Industry.

³ The Teaching Company Scheme has been subject to a number of in-depth evaluations in recent years, e.g. Senker and Senker (1994) and TCS (1997).

⁴ A fuller analysis can be found in Smallbone et al. (2000a).

⁵ The interviewees were taken from a list of 21 provided by the Centre's Managing Director. Without a comprehensive list of clients it was not possible to determine the sample's representativeness of the total client base. The desire for confidentiality was a key issue constraining the authors' access to information on the LVBIC, both on the part of the Director of LVBIC and senior staff in Directorate Generale XVI which oversees the BIC network as a whole.

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