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ENHANCING THE INNOVATIVE PERFORMANCE OF SMEs AND REGIONS

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INTRODUCTION

- Recent literature concerned with the factors influencing the success of regional economies has emphasised the innovation performance of SMEs
- Growing acceptance by policy makers of the importance of innovation to the competitiveness of national and regional economies, and to the particular role of SMEs in this
- Lecture will draw on the results of 2 studies:
 - (i) A study of a 'regional innovation system' in North London and adjoining counties, funded under Framework IV
 - (ii) A study of innovation and the use of new technology in manufacturing in SE England as part of an international, inter-regional comparison

CONTENT OF LECTURE

- What does innovation involve in SMEs?
- What is the role of policy in encouraging and supporting innovation in SMEs
- What is the relationship between innovation, competitiveness and business performance?
- What are the barriers to innovation?
- What are the benefits of co-operation for innovation in SMEs?
- What are the characteristics of good practice policy support for innovation?

WHAT DOES INNOVATION MEAN IN A SME CONTEXT?

- The need to view innovation in terms of changes made by firms which are part of the process of maintaining and improving their competitiveness;
- The need to recognise different degrees of innovation ranging from slight modifications to fundamental changes: new to firm v new to industry
- The importance of the sectoral context as a framework for assessing the role of innovation as a factor influencing competitiveness;
- The need to adopt a broad view of what constitutes innovation by including changes across a number of dimensions: development and adoption of new products & processes; incremental improvements to products/processes; new approaches to marketing and/or distribution

DISTINCTIVE CHARACTERISTICS AND NEEDS OF SMEs

- Limited resource base in terms of finance, management, knowledge base
 - has implications for needs and for the way they should be addressed
- An organisational culture that stems from the combination of ownership and management
 - behavioural characteristics can affect attitudes towards the use of external assistance
- Less ability to shape/influence external environmental relationships than large firms
- Difference between expressed needs and latent needs

THE NEEDS OF REGIONS

- Allocation of public resources must consider (potential) welfare gains to the economy, as well as addressing the needs of firms
- Thus the nature of innovation support policy may be shaped by regional and national priorities, set within a strategy for innovation.
- 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.
- A strategic rationale for supporting innovation might include policy measures aimed at stimulating the creation of new innovative businesses + raising level of innovative activity in existing enterprises, rather than solely meeting the expressed needs of SMEs themselves.

INNOVATION AND BUSINESS PERFORMANCE (Study 2)

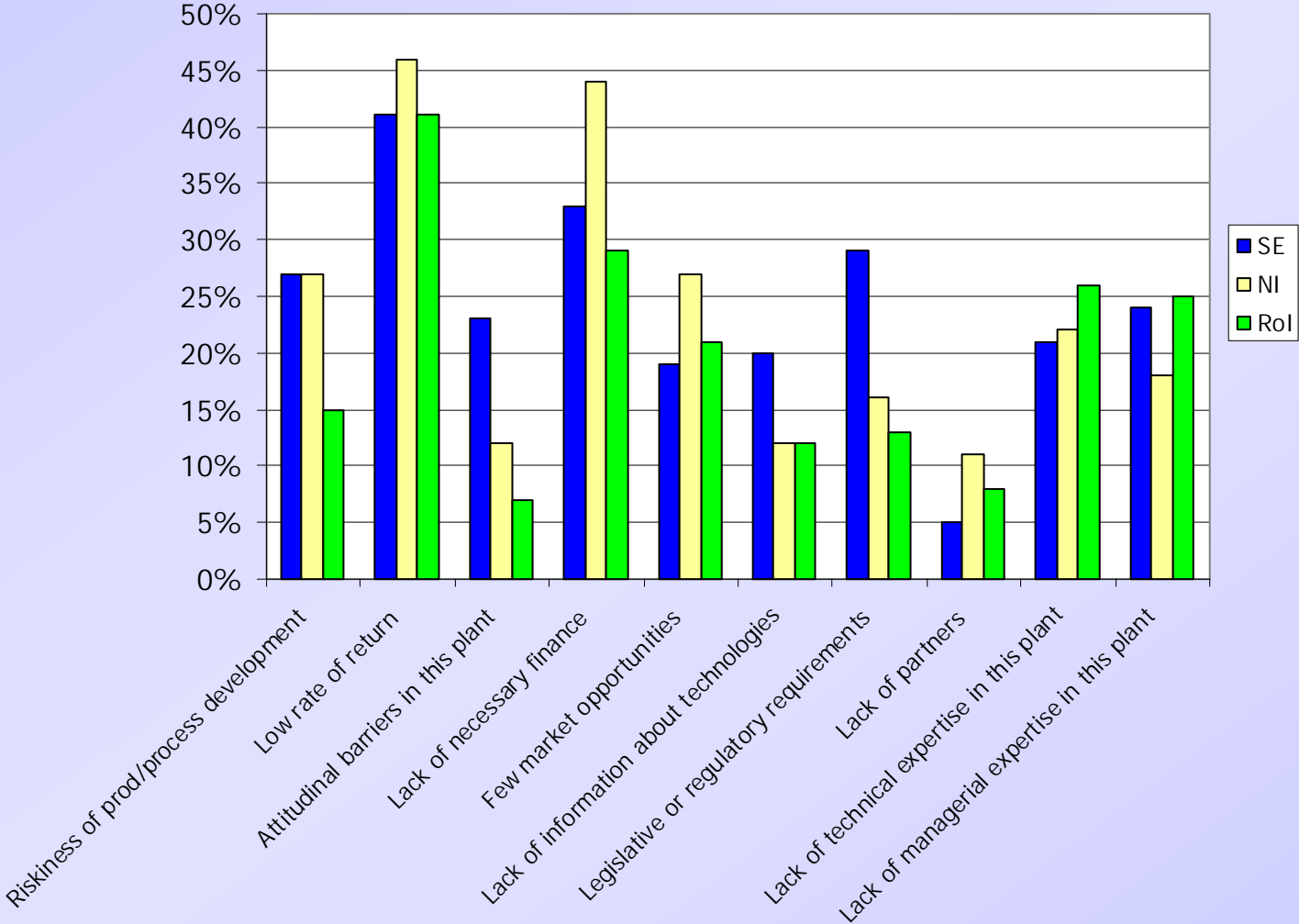
- Nearly half of total sales at the individual firm level typically came from new or improved products over the 1997-2000 period, illustrating the importance of product innovation to business performance.
- A positive association exists between product and process innovation and business performance. Innovating plants grew faster in terms of sales and employment and achieved higher profitability than non-innovating plants in the 1997-2000 period.
- Although foreign owned plants showed a higher propensity to innovate than indigenous plants, indigenous innovative plants grew faster than their foreign owned counterparts.

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Growth and Profitability of Process Innovators: All Manufacturing Plants (Study 2)

	Mean Indicators		Median Indicators	
	<i>Non Innovators</i>	<i>Innovators</i>	<i>Non Innovators</i>	<i>Innovators</i>
SE England (1997-2000)				
Sales Growth (%pa)	3.2%	8.5%	1.7%	3.9%
Employment Growth	1.6%	3.6%	0.3%	1.7%
Profit Margin (% of t'over)	35.6%	39.0%	31.2%	35.0%
Rep. of Ireland (1996-1999)				
Sales Growth (%pa)	8.3%	12.6%	3.9%	7.4%
Employment Growth (%pa)	27.1%	35.5%	7.0%	15.0%
Profit Margin	27.7%	29.4%	26.7%	30.0%
Northern Ireland (1996-1999)				
Sales Growth (%pa)	4.8%	8.8%	2.3%	3.5%
Employment Growth (%pa)	12.1%	28.1%	5.0%	10.0%
Profit Margin (% of t'over)	23.6%	24.1%	25.0%	25.0%

Constraints on innovation for Small Firms



WHAT ARE THE BARRIERS TO INNOVATION IN SMEs? (study 2)

- Concern about 'the low rate of return' and 'the lack of finance' emerges as the main reported constraints in all regions.
- Small firms placed greater emphasis on finance than medium sized firms and larger plants
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- The emphasis placed on the importance of the skills and knowledge base to the innovative performance of plants, draws attention to the importance of a HR focus in terms of policy support for innovation

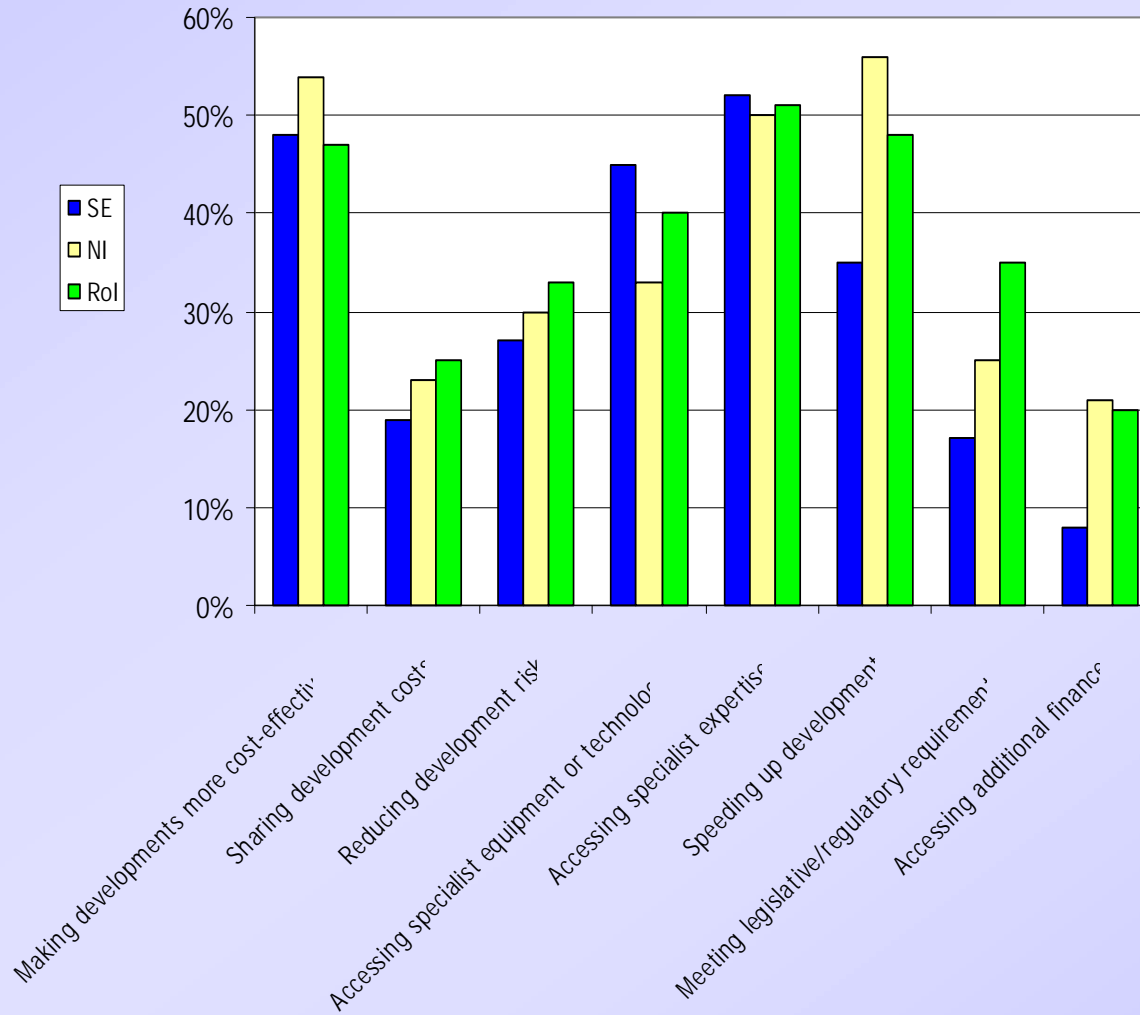
EVIDENCE OF FINANCIAL CONSTRAINTS ON INNOVATION SUPPORT NEEDS (Study 1)

- Survey results showed the main reported barriers to be finance (49% of product innovators); time (14%) and skilled labour (10%)
- However, financial constraints varied significantly between sectors: 74% of product innovating engineering firms; 42% in business services; 32% of food processing firms. Sectoral pattern was similar with process innovators.
- Financial constraints are affected by demand as well as supply side factors

WHAT ARE THE BENEFITS OF CO-OPERATION FOR INNOVATION IN SMEs?

- Co-operation and external linkages enable a firm to extend its internal resource base
- Drawing on external sources of knowledge is often a necessary part of organisational learning
- A willingness to participate in learning networks, together with an internal learning environment is conducive to innovation in knowledge based firms
- Firms may need external help to commercially exploit the benefits of their innovative efforts

Benefits of Links for Innovative SMEs (Study 2)



THE USE OF R&D AND ROLE OF EXTERNAL LINKS (study 2)

- The low level of dedicated in-house R&D reported by small firms particularly, emphasises the importance of flexibility (in terms of staff and other resources) and the potential role of other forms of innovative activity, involving informal learning processes and interactions.
- In all regions the most common type of innovation-related external link was with customers and suppliers.
- In SE England, plants and firms showed a particularly low propensity to use external collaboration with external agencies and research institutions c/f the 2 Irish regions
- Detailed analysis of the data for SE England shows that whilst linkages with HEIs are less common than those with customers and suppliers, they are more likely to be within the region and also to involve plants that are involved in leading edge technology.

WHAT IS THE ROLE OF POLICY IN ENCOURAGING AND SUPPORTING INNOVATION IN SMEs?

- Innovation results from the decisions actions of individual entrepreneurs and enterprises, although the nature and extent of innovative activity is affected by the external environment in providing appropriate forms of support.
- Role for policy is to address market failure/deficiencies, whilst seeking welfare gains for the economy
- Experience in EU countries is that supply side interventions on their own, are unlikely to add much to regional/national innovation performance.

CHARACTERISTICS OF STUDY AREA (study 1)

- An area experiencing industrial restructuring
- Includes Lee Valley Objective 2 area but also outer metropolitan Hertfordshire & Essex, which contains more innovative firms
- Lee Valley is mainly a SME economy



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POLICY SUPPORT FOR INNOVATION: THE UK CASE (study 1)

- Government's Small Firm Merit Award for Science and Technology (Smart)
- Innovation and Technology Counsellors provided by Business Link
- Lee Valley Business Innovation Centre
- Middlesex University's Lee Valley Centre



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USE OF EXTERNAL ASSISTANCE BY INNOVATING SMEs (Study 1)

- 60% of innovating firms in control group had used some form of external advice/consultancy to support innovation, 1993-98.
- External assistance was more commonly used by SMEs engaged in product/ service innovation (44%) than in process (27%) or marketing (25%) innovation.
- Firms in technology based sectors were significantly more likely to have used external assistance than firms in other sectors.
- Private sector consultants were a more common source than public or quasi-public sector agencies.



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THE SMART SCHEME (study 1)

- A national scheme launched in 1986 and largely focused on technological innovations which are 'new to the industry' in SMEs.
 - Its rationale is also based upon the view that there is a gap in the venture capital market.
 - Smart takes the form of an annual competition for financial grants.
- Smart winners are drawn from a narrow segment of the SME population.
- The Smart Scheme is achieving a high level of additionality but is less successful in helping innovative firms gain access to sources of external finance.



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BUSINESS LINK INNOVATION AND TECHNOLOGY COUNSELLORS (study 1)

- The national network of Business Link (BL) companies set up by the DTI in 1993 is based on ‘the one-stop-shop concept’ which encourages firms to access a wide range of business support services.
 - Most BLs employ Innovation and Technology Counsellors (ITCs) whose role it is to assist in firms with new product development and the adoption of new technologies.
- BL is providing assistance to innovating firms drawn from a wide range of different sectors.



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BUSINESS LINK INNOVATION AND TECHNOLOGY COUNSELLORS (cont) (study 1)

- At the time of our survey, the majority of clients were well established achieving an above average growth performance.
- BL is playing a key role in providing marketing support which innovating SMEs require if they are going to exploit the full potential of their innovations.
- Three quarters of the BL client firms were directed to other sources of specialist expertise (mainly private consultants) by the BL advisers.



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THE LEE VALLEY BUSINESS AND INNOVATION CENTRE (LVBIC) (study 1)

- The Lee Valley BIC is one of a Europe-wide network of 140 BICs.
- It provides services to support new product development, IPR, business and market planning and the provision of VC.
- Emphasis is on the commercialisation of ideas.
- LVBIC offers finance, in form of short-term loans or equity (typically 10-15% stake). No fee but return on investment or via royalty on licence.
- Main strength is in offering affordable support for selected innovative projects, although weaknesses identified include an inability to support larger projects financially, and lack of access to sources of VC.



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MIDDLESEX UNIVERSITY'S LEE VALLEY CENTRE (study 1)

- A regional level initiative, set up by Middlesex University in 1995, as part of the programme for the regeneration of the Lee Valley area using EU Structural Funds.
 - The services provided by the LVC include a design management centre, a telematics support centre, a technology transfer centre, and a teaching company scheme project.
- Many of the early difficulties experienced by the LVC relate to the problems of targeting SMEs and identifying their support needs.



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MIDDLESEX UNIVERSITY'S LEE VALLEY CENTRE, (cont)

- The LVC attracts firms from a wide range of manufacturing and service sectors and especially SMEs that are 'technology followers' rather than 'technology leaders'.
- The kind of support provided by the LVC is only be worthwhile if firms are also able to overcome financial constraints to innovation and technical change.
- LVC experienced difficulties in achieving collaboration between universities and SMEs.



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WHAT ARE THE CHARACTERISTICS OF A 'GOOD PRACTICE' INNOVATION SUPPORT SYSTEM?

- External coherence
- Appropriateness of measures to needs of firms and regions
- Penetration and impact
- Effect on region's innovative capability

EXTERNAL COHERENCE OF SUPPORT SYSTEM

- Support measures have been introduced at different times, with different objectives and rationales, representing a piecemeal approach to policy development.
- At the same time, there is some complementary, e.g. Lee Valley BIC emphasis on innovative start-ups and Smart's focus on innovative 'high-tech' projects compared with Business Link's emphasis on a more broadly based client group.
- External coherence also needs to be seen in relation to market based provision. In fact, in a UK context, much of the innovation support is accessed via market-based transactions.



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EXTERNAL COHERENCE OF SUPPORT SYSTEM, cont.

- Both Smart and LVBIC are giving individuals/ firms with high innovation potential an opportunity to develop projects, many of which are unlikely to develop if left to market forces.
- But in neither case is there much evidence of the transition to mainstream financial markets being successfully achieved.



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APPROPRIATENESS

- Smart: narrow focus and stringent assessment criteria makes it appropriate for few SMEs in study area.
- However, region needs more innovative businesses so the issue is how to increase the demand for Smart.
- The Lee Valley BIC is appropriate to needs of region in terms of supporting highly innovative start-ups.
- Business Link is addressing needs of growing SMEs in terms of helping to market innovative products/services primarily.



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PENETRATION AND IMPACT

- Overall impact of public policy measures on the innovative performance of SMEs in the study region appear marginal.
- Penetration of most initiatives, measured by the number of firms assisted is typically small. Only Business Link has been used by a significant minority of firms in 'control group' (28%), but mainly for non-specialist support from business advisers than from Innovation and Technology specialists (5%). Fewer firms has used the other initiatives.



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PENETRATION AND IMPACT, cont.

- Penetration is affected by low awareness levels of some initiatives
- Penetration and impact may also be affected by the appropriateness of delivery methods used in some cases.
- Additionality is high in relation to Smart and Lee Valley BIC, in the sense that most projects would probably have not gone ahead without assistance, but lower in relation to Business Link.



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EFFECT ON REGION'S INNOVATIVE CAPABILITY

- Overall effect of support measures on the innovative capability of the region is limited by the small scale of all but the BL initiative, and also by their fragmented nature.
- Those initiatives with the potential to make the biggest contribution to innovation in a fundamental sense (i.e. Smart and LVBIC) both involve a handful of clients from the LV area.
- Other measures (e.g. LVC or much of Business Link's work) is helping SMEs become familiar with new development in technology, or offer help with problem solving.



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EFFECT ON REGION'S INNOVATIVE CAPABILITY, cont.

- Limited apparent impact on encouraging interactive learning through co-operation.
- Smart, LVBIC and LVC are making very small contributions to HEI - SME links. Structural and cultural obstacles on the side of universities and behavioural characteristics of SMEs limit the impact.
- Policy support measures are not contributing significantly to the LV area becoming a 'learning region'.



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SO WHAT DO WE KNOW ABOUT GOOD PRACTICE?

- SMEs have distinctive characteristics that affect both their support needs and the most effective ways of meeting them.
- It is important that innovation support policies recognise the multi-faceted nature of the innovation process.
- It is important that innovation support policy takes into account the needs of regions as well as the needs of firms (latent and expressed)
- The majority of instruments aim at improving or facilitating existing innovation projects rather than inducing new innovation practices



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A POLICY AGENDA FOR ENCOURAGING AND SUPPORTING INNOVATION WITHIN A REGION (study 2)

- Take steps to promote the bottom line benefits of innovation activity to the region's, targeting indigenously owned firms particularly.
- Take active steps to link any regional strategy for innovation to a Skills Strategy.
- Support initiatives to encourage the effective use of appropriate ICT, recognising that small firms often have distinctive needs in this respect
- Take active steps to encourage and facilitate innovation-focused links between firms and appropriate university research groups.
- Facilitate supply chain initiatives as a potentially useful way of supporting innovation, since they appear to be grounded in the existing practices of firms in stressing innovation-related links with customers and suppliers.
- Take steps to share 'good practice' approaches to innovation between firms within the region