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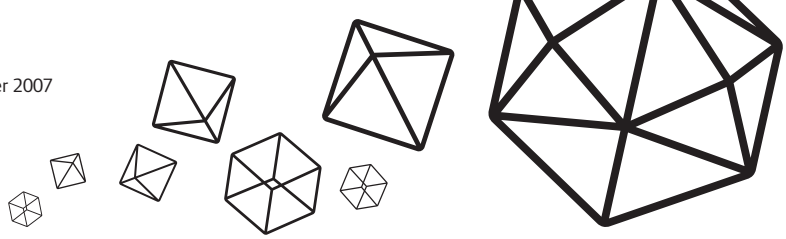

NESTA Making Innovation Flourish

Making innovative places

Place matters to innovation. From Silicon Valley to Shoreditch, innovative places attract the brightest and most creative people to produce a ferment of new ideas and ways of working. The distinctive qualities of innovative places make them poles of attraction in the economy. But too often innovation policy has been set at a national level, without taking account of the widely differing needs of regions and localities.

Recent reforms to regional and local government offer an opportunity to create regional innovation strategies that properly reflect regions' distinctiveness. Local authorities should use Multi-Area Agreements to implement cross-boundary innovation policy, and regions should take the opportunity presented by the new Regional Strategies to develop their own 'regional innovation journeys', building on their particular strengths.

Innovation is unevenly distributed

Some places are more innovative than others
The ability to innovate varies between places. Some cities or regions have a greater capacity to create or absorb ideas than others. Such places attract more bright people and produce more new ideas and companies.

London hosts one of the world's most vibrant creative industries clusters. As a whole, it accounts for a quarter of the output of the UK's creative industries and attracts firms and people from all over the world.[1] The University of Cambridge and its associated institutions support a high-technology cluster of some 973 innovation-based companies.[2]

People admire innovative places and want to replicate them
Policymakers envy such places and try to replicate their success in their own countries or regions. By 2007, following California's success with Silicon Valley, 105 locations had adopted a 'Silicon' moniker – from Silicon Forest to Silicon Tundra.[3]

Most innovation policy is 'spatially blind'
Until recently, UK innovation policy was mainly national in focus. Recent announcements, such as those in the Sainsbury Review,[4] have largely continued this trend, whilst initiatives such as Research and Development (R&D) Tax Credits contain no explicit regional variation.[5]

In the 1990s, policymakers started to recognise spatial aspects of innovation policy, beginning with the Competitiveness White Paper and the mapping of existing UK cluster activity.[6] Most recently, the Sainsbury Review devoted a chapter to regional innovation policy.[7]

But although such recognition is welcome, it is still often 'spatially blind': attempting to replicate one region's successes – such as those of the 'Golden Triangle'[8] – in every other region, while ignoring specific regional strengths and weaknesses. For instance, eight of England's nine regional strategies prioritise biotechnology or health sciences.[9]

HM Treasury's recent 'Review of sub-national economic development and regeneration'[10] provides a new framework for local authorities and regional agencies. But it is only just starting to have an impact, with most regional and local institutions some way from having fully-developed regional innovation strategies.

The nation-state is an imperfect unit of analysis for innovation
The concept of a National Innovation System was championed by the OECD to highlight and explain national differences in innovation performance.[11] However, in an increasingly globalised world, the nation-state loses some of its traditional strategic economic and political influence.[12]

Innovation systems do not function solely at the national level
Innovation systems exist at international, regional and city-levels, within particular sectors and around particular firms.[13] They emerge wherever firms develop ongoing relationships with universities, governments or other actors in order to access the resources necessary for innovation.

As a result, working only on a national scale could fail to maximise the development and impact of successful innovation policies.[14]

1. Greater London Authority (2002) 'Creativity: London's Core Business.' London: GLA Economics.

2. Library House (2006) 'The Cambridge Cluster.' London: Library House.

3. See Siliconia website. Available at http://www.tbtf.com/siliconia.html [accessed 20 November 2007].

4. Lord Sainsbury of Turville (2007) 'The Race to the Top – a Review of Government's Science and Innovation policies.' London: HM Treasury.

5. See BERR website. Available at http://www.dti.gov.uk/innovation/randd/randd-tax-credits/page11350.html [accessed 20 November 2007].

6. DTI (2001) 'Business Clusters in the UK: A First Assessment.' London: DTI.

7. Lord Sainsbury of Turville (2007) 'The Race to the Top – a Review of Government's Science and Innovation policies.' London: HM Treasury.

8. 'Golden Triangle' refers to knowledge-intensive sectors within the region bounded by Oxford, Cambridge and London.

9. NESTA (2007) 'Innovation in UK cities.' London: NESTA.

10. HM Treasury, BERR, DCLG (2007) 'Review of sub-national economic development and regeneration.' London: HM Treasury.

11. OECD (1997) 'National Innovation Systems.' OECD: Paris.

12. Cooke, P. and Morgan, K. (1998) 'The Associational Economy: Firms, Regions and Innovation.' Oxford: Oxford University Press.

13. The OECD has adopted the idea of the national innovation system in its analyses of innovation policy, and is now starting to talk more of the importance of regional innovation systems. See OECD (2006) 'OECD Science, Technology and Industry Outlook 2006.' Paris: OECD.

14. Porter, M. (1998) Clusters and the New Economics of Competition. 'Harvard Business Review.' 76:6, pp. 77-90.

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Policy has often leapt to cities as the units of innovative growth

Through firms, markets, networks, assets and institutions, cities offer three qualities essential to innovation: proximity, density and variety
Firms and entrepreneurs are the most important actors in urban innovation: they are the brokers at the interface between the supply of innovation and the demand for new ideas.[15] For innovation to thrive, new ideas need lead markets and demanding consumers who provide an early customer base.[16] Cities can provide businesses with large interactive local markets as well as access to capital, products and labour.

Urban networks underpin the supply of innovation, and the demand for it.[17] Cities and urban universities support their own dense networks, and enable firms to access wider networks in the broader economy.[18]

A city's urban asset base – its location, infrastructure, finance, property and people's skills – underpins economic and innovative activity. It also shapes businesses' location and expansion decisions. Urban institutions, including government, universities, colleges and economic development agencies help to maintain this asset base, and often actively support innovation.

Innovative cities qualify in two categories[19]

- **Urban hubs:** large cities where scale and choice help firms innovate. Their large and diverse population means that businesses can select the optimal mix of suppliers and workers. Such cities facilitate knowledge spillovers across the urban economy, as businesses learn from others, workers move between companies and new paradigms form.[20]

- **Local links:** specialised connections and networks in cities help firms innovate faster. Proximity allows firms to establish business and knowledge networks within a given sector, or between businesses and public institutions. For instance, the ICT sector in Reading and the Thames Valley has a large labour market to draw on, with a range of specialisms, as well as high quality business premises and transport connections.

Large cities like London, New York and Manchester have the assets and markets of sufficient scale to automatically qualify as urban hubs. However, smaller and more isolated cities that cannot field the assets essential to becoming an 'urban hub' can become highly innovative by exploiting a 'local links' model – in short, through intelligently deploying leadership, institutions and policies, they can become more than the sum of their parts.

The urban hubs and local links models are not mutually exclusive. One city can qualify as both, particularly when a single sector is being considered – like Coventry's engineering design sector.

In contrast, rural areas tend to be overlooked by policymakers

Rural areas are normally perceived as dormitories or playgrounds for those living in cities
Rural areas face multiple challenges. Their remoteness is often compounded by limited skills, industries, markets and political clout. Years of urban-focused policy initiatives have implicitly treated them more as dormitories or playgrounds for urban-dwellers rather than as areas in their own right. Recent innovation policies have tended to reinforce this stereotype by their concentration on urban areas and implicit neglect of rural areas.

But there is an important story to tell about innovation in rural areas
In fact, there exists considerable innovation in the UK's rural areas. Traditional rural industries are increasingly important to innovations for urban communities, such as biofuels and materials based on fibre crops.

Demands from challenges such as climate change have also driven innovation in both rural and urban areas. For instance, rising water levels have resulted in new water resistant materials and weather monitoring systems.[21]

Overcoming the problems posed by scarcity and distance has led local businesses to explore novel working practices and new ideas.[22] Rural businesses, for example, may make more extensive use of information and communications technology (ICT).[23]

The innovative potential of rural areas could be exploited further
Helping rural businesses organise themselves around forums and associations would help rural businesses sell their products and services and to understand potential demand for them, thereby broadening their markets for innovation.[24] The business clubs established for small food-producing firms in the West Midlands region[25] and Food Yorkshire[26] are good examples.

Developing new technologies to make distances less relevant can build closer links and collaboration between rural and urban communities. The 'distance lab' in Scotland studies how digital media and ICT can help overcome connectivity gaps between the north of Scotland and the wider world.[27]

Rural areas often lack universities, but technical colleges can foster innovation with their 'hands-on' experience, and learning opportunities for

15. Athey, G., Glossop, C., Harrison, B., Nathan M. and Webber, C. (2007) 'Innovation and the city – How innovation has developed in five city-regions.' London: NESTA.

16. Georghiou, L. (2007) 'Demanding innovation – Lead markets, public procurement and innovation.' London: NESTA.

17. Athey, G., Glossop, C., Harrison, B., Nathan M. and Webber, C. (2007) 'Innovation and the city – How innovation has developed in five city-regions.' London: NESTA.

18. NESTA (2007) 'Five ways universities drive innovation.' London: NESTA.

19. Athey, G., Glossop, C., Harrison, B., Nathan M. and Webber, C. (2007) 'Innovation and the city – How innovation has developed in five city-regions.' London: NESTA.

20. Jacobs, J. (1969) 'The Economy of Cities.' New York: Vintage.

21. Mahroum S. (ed.) (2007) 'Rural innovation.' London: NESTA.

22. HM Treasury, BERR, DCLG (2007) 'Review of Sub-national Economic Development and Regeneration.' London: HM Treasury.

23. Commission for Rural Communities (2007) 'The State of the Countryside 2007.' Cheltenham: Commission for Rural Communities.

24. Proximity to 'lead markets' is known to be important to innovation. See Georghiou, L. (2007) 'Demanding innovation – Lead markets, public procurement and innovation.' London: NESTA.

25. See for example the Food Business Initiative. Available at http://www.foodbusinessinitiative.co.uk/ [accessed 20 November 2007].

26. See Food Yorkshire website. Available at http://www.foodyorkshire.co.uk/foodyorkshire/index.asp [accessed 20 November 2007].

27. See distance lab website. Available at http://www.distancelab.org/ [accessed 20 November 2007].

small businesses and individuals.[28] Initiatives such as those in Cumbria and the Highlands and Islands of Scotland are showing how new higher education institutions can exploit new technologies and new methods of working to meet the demands of dispersed communities.[29]

Finally, rural areas are experiencing net in-migration. Over the past ten years, there has been a notable rise in the 40-59 age group.[30] These experienced people represent a hitherto underemployed resource for innovation. Policymakers should develop specific innovation policies targeted at women and older people, many of whom are likely to set up businesses. 'Senior start-ups', for example, account for approximately one in six new businesses in the UK each year.[31] Programmes such as Women in Rural Enterprise[32] and the PRIME business club,[33] which help establish contacts and build networks, should be implemented across the UK.

Cities and rural areas are unified in 'functional regions'

Innovation does not stop at administrative boundaries
An innovation system has no respect for administrative boundaries – instead, it follows a 'functional region' that normally reaches beyond a city or locality but is smaller than a nation.

Consequently, innovators may be disadvantaged if local and regional authorities cannot work effectively across jurisdictions. For example, companies in the high-tech cluster around Cambridge are likely to have greater links with the scientists in University College London than they are with the people of Ely, and yet it is the latter and not the former that is covered by the same regional innovation strategy.

Regional actors need to actively take part in a 'regional innovation journey'
Regions that have successfully implemented innovation strategies tend to have followed a 'regional innovation journey': a way to create major change through a series of small, achievable steps that have a visible and significant impact on the innovative capacity of a region.[34]

Any regional innovation journey typically goes through Stages A-E:

A. **Gathering a cadre of enthusiasts:** building a community of change-makers, focused on innovation, and with sufficient authority to deliver collective activities demonstrating its importance.

B. **Arriving at an agreed vision and strategy:** the partners jointly decide their regional strategic priorities and identify realistic activities that promise future change, fire people's imagination, and meet the interests of the main partners.

C. **Piloting novel activities:** the coalition test-drives a small number of eye-catching projects that generate wider interest and provide the partners with a vehicle to drive shared interests.

D. **Mainstreaming:** the results of pilots are sufficient to generate enough interest to attract more resources and recruit a larger set of partners to the innovation journey.

E. **Renewal:** mainstreaming is not the end of the game. The continuous recognition of new challenges re-ignites a new cycle of coalitions, plans and actions and prevents stagnation.

Transitions between Stages represent 'Critical Moments' on the regional innovation journey
Each transition from Stage to Stage is risky and simple forward progression is the least likely outcome. Before each Stage sits a corresponding 'Critical Moment':

1. **Acknowledging the problem** – forming the coalition can become bureaucratic, or the core group may favour paper plans over producing real outcomes.

2. **Conflict between community partners** – differences might emerge in setting priorities for action and endanger progression towards any collective action.

3. **Moving from planning to action** – few regions manage to mobilise resources and to move from the state of strategising to the stage of doing. Early successes must be generated to create a momentum for future shared activity, and to gain trust from a wider range of leaders.

4. **Sustaining momentum** – it is tempting to become stuck in a period of perpetual piloting. Partners must move beyond a project mindset to develop an effective innovation strategy and implement a number of pilot actions.

5. **Renewing regional leadership** – a series of successful innovation activities can create a mindset among the leaders of a coalition that is resistant to change and that prevents other actors from participating in innovation.

Leadership must be fit for purpose
Regional leadership is about having the capacity to ensure regional actors arrive at co-operative solutions to shared challenges.

There are two distinct variables: regional innovation diversity – the number of actors engaged in the regional innovation journey; and

28. Mahroum S. (ed.) (2007) 'Rural innovation.' London: NESTA.

29. Duffield, B. S. and Hills, G. (2000) 'Community Development and Higher Education: A Case Study of the University of the Highlands and Islands of Scotland.' Available at http://www.worldbank.org/mdf/mdf2/papers/humandev/education/duffield.pdf [accessed 20 November 2007].

30. Commission for Rural Communities (2007) 'State of the Countryside Update - Population and Migration.' London: Commission for Rural Communities.

31. Yell Press Release (25/11/2007). ''Senior Startups' contribute more than £24.4 billion to the UK economy.' Available at http://www.yellgroup.com/english/media-pressreleases-2007-seniorstartupscontribute morethan244 [accessed 08 November 2007].

32. See WiRE website. Available at http://www.wireuk.org/ [accessed 08 November 2007].

33. See PRIME business club website. Available at http://www.primebusinessclub.com/ [accessed 08 November 2007].

34. Benneworth P. (2007) 'Regional leadership for innovation.' London: NESTA.

dispersal of decision-making – the number of people making decisions.

Together, these generate four types of leadership, each of which has different strengths and weaknesses that must be matched to the needs of the region. Here, they are compared to musical styles:

'Orchestral leadership' has a few conductors co-ordinating many innovators. The central focus of the innovation journey lies in a small number of leaders 'conducting' an increasing and diverse cadre involved in innovation.

The **'barber shop quartet'** is skilful, but for a small audience. The journey is led by a few people, largely for the benefit of those few players – typically a small number of universities or multinationals.

The **'enthusiastic improvisation'** region has difficulties in finding a common tempo. There are relatively few innovation actors, but with a more general regional willingness for stimulating innovation policy. A number of different activities may run in parallel, not always effectively co-ordinated. In this case, a strong actor acts as an 'informal conductor' for the region.

The **'jamming super-group'** describes a successful innovation community with multiple and competing visions for innovation policy, alongside great depth in innovation capacities. When they function well, these regions make innovation appear effortless, even normal – like in Silicon Valley.

Each style has strengths and weaknesses and is suitable for different stages on the innovation journey.

Building a spatially-aware innovation strategy

DIUS's upcoming innovation strategy should recognise the importance of regional innovation systems
Working with the Department for Business, Enterprise and Regulatory Reform (BERR), the Department for Innovation, Universities and Skills (DIUS) should encourage the development of effective innovation strategies by functional regions rather than rigid administrative units. Any resultant UK-wide or national policies should contain within them sufficient flexibility to be tailored for local conditions while retaining a standard 'basic offer.' Importantly, DIUS should work closely with the Department for Environment, Food, and Rural Affairs (Defra) and the Commission for Rural Communities to build a rural component in the UK innovation agenda.

The Government should support those local authorities wanting to deliver innovation policies through Multi-Area Agreements
The Department of Communities and Local Government (DCLG) is shortly expected to publish guidance on Multi-Area Agreements (MAAs) for local authorities. These agreements will give local authorities the flexibility to co-operate on issues across their own boundaries. They are voluntary arrangements, established with clear targets and aimed at promoting economic development.[35]

In Manchester, for example, the local development agency, Manchester Enterprises, is already considering how cross-boundary innovation policy can be delivered through the use of a Multi-Area Agreement, working with the city's innovation agency, Manchester Knowledge Capital, and local partners.

Local authorities should use the flexibility offered by MAAs to reach across administrative boundaries to develop effective, tailored innovation policies that work for functional economic units.

Develop a community of highly-skilled innovation experts
Developing innovation strategies needs highly skilled policymakers. There is a pressing need for groups of innovation experts who can help devolved administrations, RDAs, local authorities and other bodies to conduct the detailed analysis.

Such innovation policy professionals must be well trained in recent developments in the business, theory and practice of innovation policy. This role must be prestigious and externally accredited, drawing on existing programmes such as Masters courses in Public Administration.

Regions should find ways to embed particular lead business users in their innovation journeys
Public bodies are just one element of any innovation system – no regional innovation strategy can be developed without effective business contributions. However, at the moment, business involvement in innovation strategies is low, and engaging major corporations and local SMEs should be a priority for policymakers.

New Regional Strategies should identify a region's innovation journey
The creation of single Regional Strategies, merging the old, separate Regional Economic and Regional Spatial Strategies, provides an opportunity for RDAs to integrate their own innovation journeys into their broader economic goals. Each new strategy should explicitly develop an approach that reflects the specific characteristics and needs of individual regions.

35. Currently thirty groups of local authorities throughout England and Wales have expressed an interest in working collaboratively through a Multi-Area Agreement to meet their needs.