

# Benchmarking Local Innovation

The innovation geography of the UK

By Stephen Roper, Jim Love, Karen Bonner



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Stephen Roper is Director of ERC and Professor of Enterprise at Warwick Business School  
**Stephen.roper@wbs.ac.uk**

Jim Love leads ERC's Innovation and Exporting research theme and is Professor of Innovation and International Business at Warwick Business School **jim.love@wbs.ac.uk**

Karen Bonner is a Senior Research Fellow at ERC and Aston Business School  
**k.bonner1@aston.ac.uk**

## About EEN

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## Executive Summary

Firms' ability to innovate successfully plays an important role in their ability to sustain growth and competitiveness. For the first time this report provides a 'geography of innovation' across the UK based on innovation benchmarks for local areas.

The benchmarks are based on a new analysis of data from the 14,000 firms which responded to the UK Innovation Survey 2013. The analysis was designed to provide representative results for each local economic area. Benchmarks relate to firms' innovation activity during the 2010 to 2012 period. Six benchmarks are reported:

- ▶ Firms engaged in product or service innovation
- ▶ Firms engaged in new to the market innovation
- ▶ Firms engaged in process innovation
- ▶ Firms engaged in strategic or marketing innovation
- ▶ Firms engaged in R&D
- ▶ Firms that were collaborating as part of their innovation activity

In England we report benchmarks for those covered by individual LEAs. We also report benchmarks for West Wales and the Valleys, East Wales, Eastern Scotland, South West Scotland, North East Scotland & the Highlands and Islands and Northern Ireland.

The UK's innovation heartland is a cluster of local economic areas in an arc from Greater Cambridge and Greater Peterborough LEP through the South-East Midlands to Oxfordshire and West along the M4 corridor. Across the six measures firms in Oxfordshire LEP report the most innovation activity followed closely by Greater Cambridge and Greater Peterborough. South East Midlands and Gloucestershire follow relatively closely. Tees Valley is the best performing of the Northern local economic areas. Eastern Scotland, Northern Ireland and Cumbria report the weakest innovation performance.

Two caveats need to be borne in mind when considering these results. First, the level of innovative activity in a locality will depend both on the type of business activity in the area as well as the innovativeness of individual firms. High levels of innovative activity in Oxfordshire and Greater Cambridge and Peterborough LEAs may therefore reflect both factors. Second, it is also important to remember that our benchmarks are based on survey data. This inevitably means that our results are subject to some measurement error although the geographical picture we observe in 2010 to 2012 is very similar to other analysis we have conducted for earlier periods.

While our benchmarks provide an overview of the geography of innovation across the UK they also raise questions about 'why' this pattern arises. Addressing this question is likely to require more detailed statistical and institutional analyses of the drivers of innovation at the local level. Only in this way will we be clear about the impact and effectiveness of different elements of the business eco-system on local innovation outcomes.

Our hope is that the publication of this report provides a new perspective on the geography of innovation in the UK, highlights the diversity of innovation activity and suggests the value of more locally attuned innovation strategies.

## Introduction

Firms' ability to innovate successfully plays an important role in their ability to sustain growth and competitiveness. For local areas this means that the more innovative are local companies the stronger the prospects for growth. In this report we provide a series of metrics which profile the level of innovative activity for local areas across the UK. For the first time this provides a clear 'geography of innovation' for the UK highlighting areas of strength and weaker performance.

In England we report benchmarks for Local Economic Areas, those covered by individual LEAs. In Scotland and Wales we report benchmarks for NUTS 2 regions (West Wales and the Valleys; East Wales, Eastern Scotland, South West Scotland) but for statistical reasons amalgamate the data for NE Scotland and the Highlands and Islands areas. Northern Ireland benchmarks are also reported.

The benchmarks reported here are based on a new analysis of the UK Innovation Survey 2013 which relates to firms' innovation activity during the 2010 to 2012 period. This has involved re-weighting survey responses to provide results which are representative of each local economic area. We focus on six benchmarks of innovative activity:

- ▶ Firms engaged in product or service innovation – measured as the proportion of firms reporting the introduction of a new or significantly improved product or service during the 2010 to 2012 period.
- ▶ Firms engaged in new to the market innovation – measured as the proportion of product or service innovators reporting that their new products or services were new to the market.
- ▶ Firms engaged in process innovation - the proportion of firms reporting the introduction of a new or significantly improved process during the 2010 to 2012 period.
- ▶ Firms engaged in strategic or marketing innovation – the proportion of firms reporting new strategic initiatives or changes to marketing concepts or strategies.
- ▶ Firms engaged in R&D – the proportion of firms reporting undertaking R&D over the 2010 to 2012 period.
- ▶ Firms that were collaborating as part of their innovation activity – the proportion of firms partnering with other organisations as part of their innovation activity.

The pattern which emerges suggests that the UK's innovation heartland is centred on an arc from Greater Cambridge and Greater Peterborough LEP through the South-East Midlands to Oxfordshire and West along the M4 corridor. Generally levels of innovative activity are lower in more Northern and peripheral areas with some notable exceptions such as the Tees Valley. There remain, however, isolated pockets of above average innovation activity across the UK.

Our hope is that the publication of this report provides a new perspective on the geography of innovation in the UK, highlights the diversity of innovation activity and suggests the value of more locally attuned innovation strategies.

# Product and Service Innovation

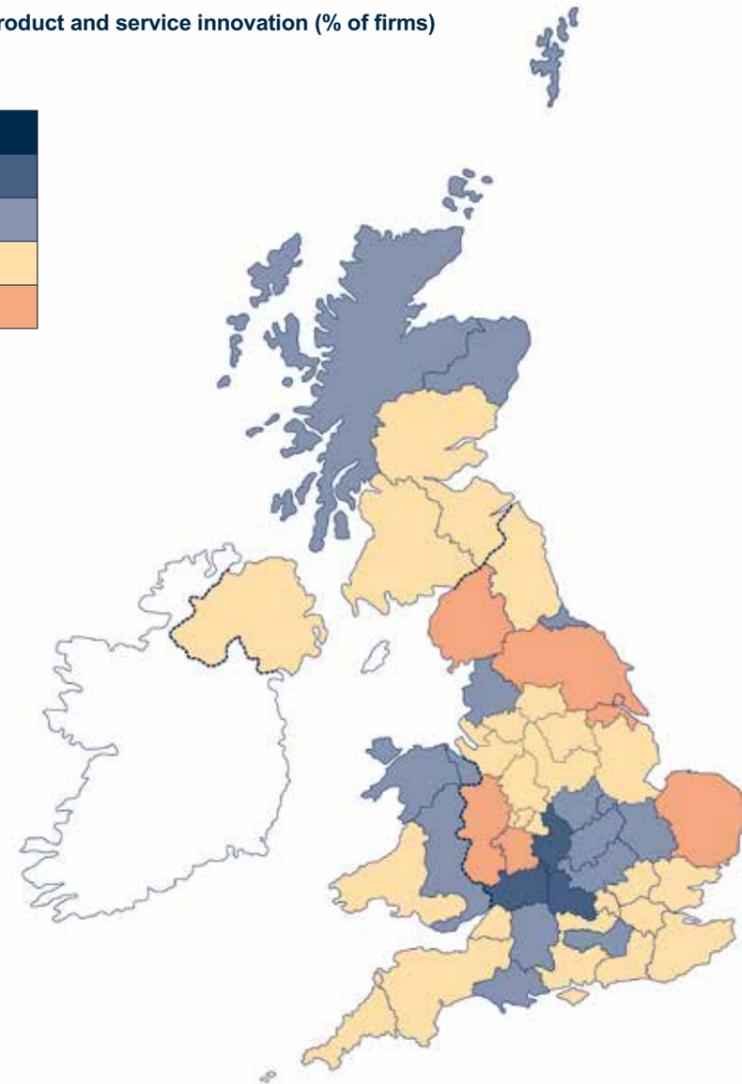
The ability to successfully introduce new or improved products and services is a key aspect of firms' innovation capability. Previous research studies have strongly linked new product innovation to both growth and productivity improvements. This metric measures the percentage of enterprises in each locality introducing either a new or significantly improved product or service during the three year period from 2010 to 2012. The higher the metric the more firms in any locality are engaging with innovation with its potential growth and productivity benefits.

Differences in the levels of this metric between local areas will reflect both the innovativeness of local firms and to some extent the structure of local industries. For example, high-tech industries, or those where there is a high degree of competition, may have higher levels of innovative activity. Similarly, as larger firms are typically more likely to introduce new or improved products or services in any given period, those local areas where there is a preponderance of larger firms are likely to perform well on this benchmark.

The highest levels of product and service innovation activity are recorded in Oxfordshire, Gloucestershire and along the M4 corridor with most surrounding areas also having relatively high levels of innovative activity. Lower levels of innovation are generally associated with more peripheral and coastal areas.

**Figure 1: The UK geography of product and service innovation (% of firms)**

LOWER	UPPER	
25.0	35.0	
20.0	24.9	
15.0	19.9	
0.0	14.9	



The proportion of product and service innovators varies substantially by local area within England from a high of 27 per cent in Oxfordshire to 12 per cent in York and North Yorkshire. Reflecting the geography noted earlier a number of the better performing local areas are in the South Midlands with some notable exceptions such as the Tees Valley (24 per cent). The majority of areas performing less strongly are more Northern or peripheral areas although again there are notable exceptions such as Hertfordshire and Worcestershire (both 15 per cent). As indicated earlier it is important to acknowledge that these local differences will reflect both the innovativeness of individual firms and, to some extent, the structure of business within each local area.

East Wales and the NE and Highlands and Islands of Scotland have similar levels of product and service innovation (21 per cent) to Leicester, a third of the way down the English performance table. Other parts of Scotland, Wales and Northern Ireland have lower levels of innovative activity but do outperform the weaker English LEAs.

**Figure 2: Product and Service Innovation by Local Area (% firms)**

ENGLISH LEAS	%
Oxfordshire LEP	27
Gloucestershire	26
South East Midlands	25
Tees Valley	24
Swindon and Wiltshire	24
Lancashire	24
Greater Cambridge & Peterborough	24
Enterprise M3	24
Northamptonshire	23
Dorset	22
Leicester and Leicestershire	21
Thames Valley Berkshire	20
Liverpool City Region	20
Cheshire and Warrington	20
Black Country	20
North Eastern	19
Leeds City Region	19
Heart of the South West	19
Derby, Derbyshire, Nottingham, Notts.	19
Cornwall and the Isles of Scilly	19
Coast to Capital	19
Stoke-on-Trent and Staffordshire	18
South East	18
Sheffield City Region	18
Greater Manchester	18
Greater Birmingham and Solihull	18
Coventry and Warwickshire	18
Solent	17
London	17
Greater Lincolnshire	17
Buckinghamshire Thames Valley	17
West of England	16
Worcestershire	15
The Marches	15
Hertfordshire	15
New Anglia	14
Cumbria	14
Humber	13
York and North Yorkshire	12

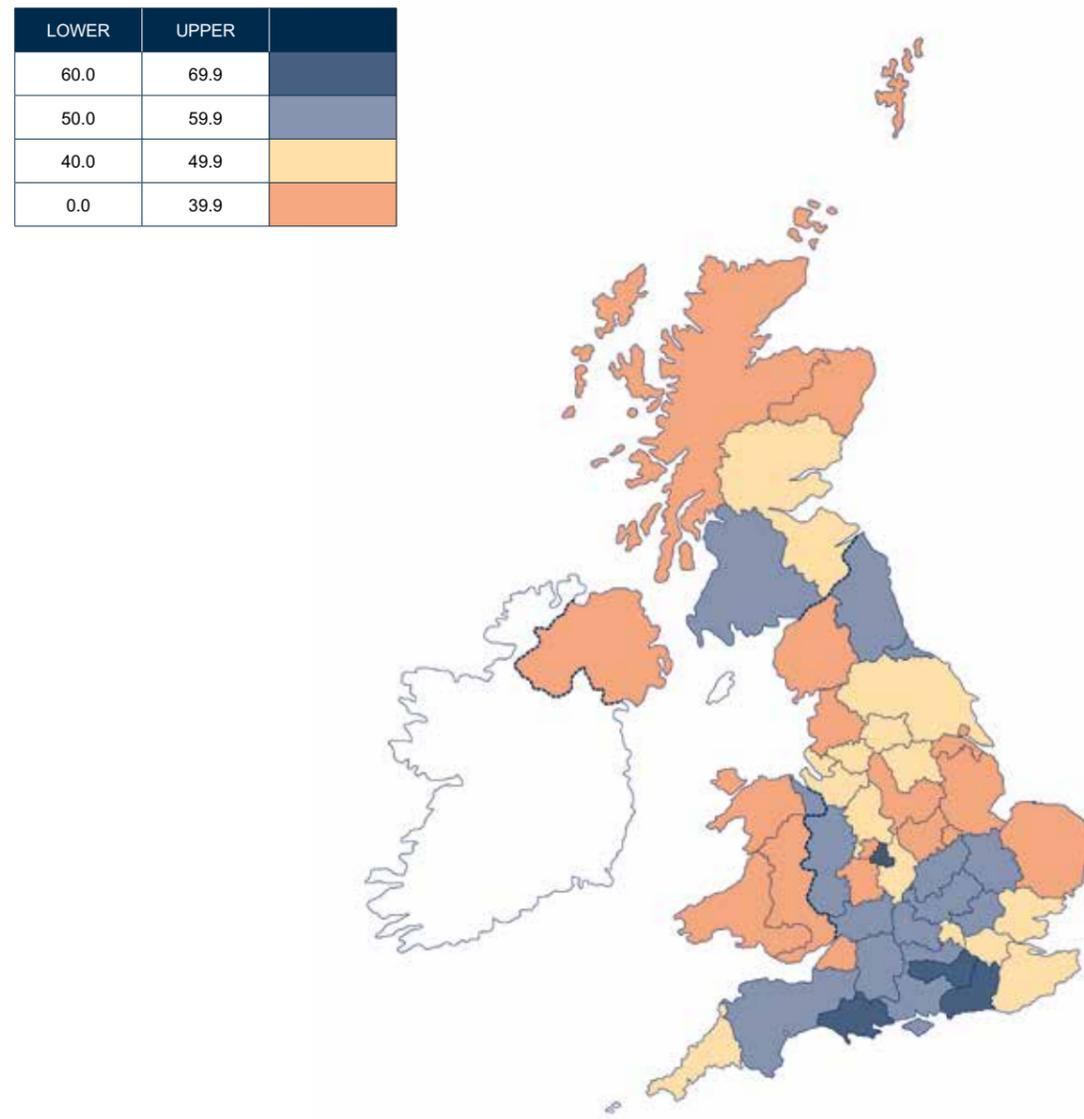
OTHER UK	%
East Wales	21
NE & Highlands & Islands	21
West Wales & The Valleys	16
Eastern Scotland	16
SW Scotland	15
Northern Ireland	15

## New to the market innovation

The previous metric provided an indication of the extent of innovation in products and services across the whole population of firms within each locality. Innovations vary in nature, however, with a usual distinction being 'new to the market' or 'new to the firm'. It is generally thought that more radical 'new to the market' innovations might generate higher returns although these are offset by the potential for higher risks. Our second metric provides an indication of the percentage of those firms which are innovating which reported introducing new to the market innovations (either products or services) during the 2010 to 2012 period. This is, of course, firms' own subjective view of what is new to their market.

Central and Southern English regions perform most strongly here with relatively high levels of more radical innovation activity also reported in the North East and Tees Valley. Northern and Eastern coastal areas have a lower proportion of innovative firms which report new to the market innovation activity.

Figure 3: New to the market innovation by innovating firms (% of product or service innovators)



As with the proportion of innovating firms we see considerable variation between local economic areas in terms of the proportion of firms reporting new to the market innovation activity. Regions in Central and Southern areas are again close to the top of the English table of local economic areas suggesting that firms in these areas are both more innovation active and have a higher proportion of new to the market innovation than those in most other areas. More generally the geography of new to the market innovation appears more diffuse than that of innovation activity more generally with regions on the South coast and in the West Country performing strongly.

Areas outside England suggest some marked performance contrasts. Most notably, South-West Scotland which had a relatively low share of innovating firms performs well in terms of the share of that innovation reported as new to the market. NE Scotland and the Highlands & Islands region has the opposite pattern. One possibility is that this contrast reflects different business types in the two areas.

Figure 4: New to the market product and service innovation by Local Area (% innovating firms)

ENGLISH LEAS	%	OTHER UK	%
Dorset	67	SW Scotland	55
Enterprise M3	67	Eastern Scotland	40
Coast to Capital	63	East Wales	33
Greater Birmingham and Solihull	63	West Wales & The Valleys	31
Hertfordshire	60	Northern Ireland	29
Oxfordshire LEP	60	NE & Highlands & Islands	26
South East Midlands	60		
North Eastern	58		
Swindon and Wiltshire	57		
Greater Cambridge & Peterborough	55		
Thames Valley Berkshire	55		
Solent	54		
Stoke-on-Trent and Staffordshire	54		
Northamptonshire	53		
Tees Valley	53		
Gloucestershire	52		
Heart of the South West	52		
Greater Manchester	51		
London	50		
York and North Yorkshire	50		
Cheshire and Warrington	49		
Coventry and Warwickshire	49		
South East	49		
Buckinghamshire Thames Valley	45		
Cornwall and the Isles of Scilly	45		
Liverpool City Region	45		
Leeds City Region	43		
Sheffield City Region	41		
Black Country	40		
Derby, Derbyshire, Nottingham, Notts.	40		
Lancashire	38		
West of England	38		
Leicester and Leicestershire	36		
New Anglia	31		
Cumbria	*		
Greater Lincolnshire	*		
Humber	*		
The Marches	*		
Worcestershire	*		

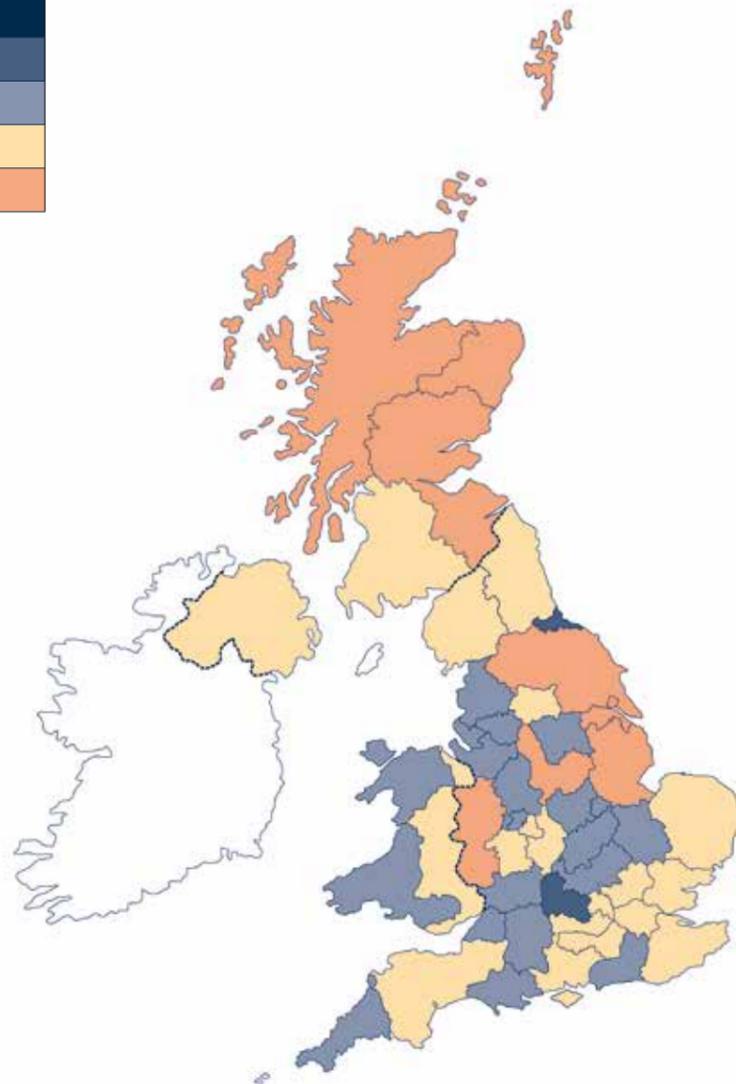
# Process innovation

Alongside product and service innovation it is usual to measure firms' innovation in manufacturing and business processes. Either type of innovation may provide advantages in terms of flexibility, productivity or cost saving. Process changes have also been linked by previous research to quality improvements and firms' improved ability to develop new product and service innovations. The metric we report here is similar in nature to that for product or service change and relates to the percentage of firms in each local area introducing new or significantly improved processes during the 2010 to 2012 period.

Overall, the proportion of firms reporting that they undertook process change is lower than that for product or service innovation (Figure 2). The geography of process innovation reflects that of product change (Figure 1) in the having some of the highest levels of activity in Central and Southern areas (Figure 5). The North West performs notably more strongly in terms of process change than product or service innovation, however. Southern coastal local economic areas which performed well in terms of new to the market innovation also perform relatively well here.

**Figure 5: Process innovation by local economic area (% of innovating firms)**

LOWER	UPPER	
15.0	20.0	
11.0	14.9	
8.0	10.9	
0.0	7.9	



Oxfordshire local economic area tops the table of English areas for both product/service and process innovation with other central areas including the South East Midlands also consistently strong. Tees Valley, fourth in the table of product or service innovation also performs well here with the second highest level of process innovation activity (Figure 6). There is considerable consistency too between those local economic areas in England which performed less well with Yorkshire and North Yorks, Humber and Greater Lincolnshire towards the bottom of the league table for both product/service and process innovation. Outside England the Welsh areas had the highest proportions of both product and service innovators (Figure 2) and process innovators (Figure 6). As with the earlier product and service metrics it is important to acknowledge that the process metrics reported in Figures 5 and 6 will reflect both the innovativeness of individual firms but also the industrial composition of each local economic area.

**Figure 6: Process innovation by local economic area (% of innovating firms)**

ENGLISH LEAS	%
Oxfordshire LEP	19
Tees Valley	16
Dorset	15
Greater Cambridge & Peterborough	15
Northamptonshire	15
Swindon and Wiltshire	15
Cornwall and the Isles of Scilly	14
Leicester and Leicestershire	14
South East Midlands	14
West of England	14
Cheshire and Warrington	13
Coast to Capital	13
Gloucestershire	13
Lancashire	13
Liverpool City Region	13
Sheffield City Region	13
Black Country	12
Greater Manchester	12
Stoke-on-Trent and Staffordshire	12
Coventry and Warwickshire	11
Enterprise M3	11
Leeds City Region	11
London	11
New Anglia	11
Worcestershire	11
Greater Birmingham and Solihull	10
Heart of the South West	10
Hertfordshire	10
North Eastern	10
Thames Valley Berkshire	10
Solent	9
South East	9
Derby, Derbyshire, Nottingham, Notts.	8
The Marches	8
York and North Yorkshire	8
Greater Lincolnshire	7
Humber	7
Buckinghamshire Thames Valley	*
Cumbria	*

OTHER UK	%
West Wales & The Valleys	12
East Wales	9
SW Scotland	8
Northern Ireland	8
NE & Highlands & Islands	7
Eastern Scotland	5

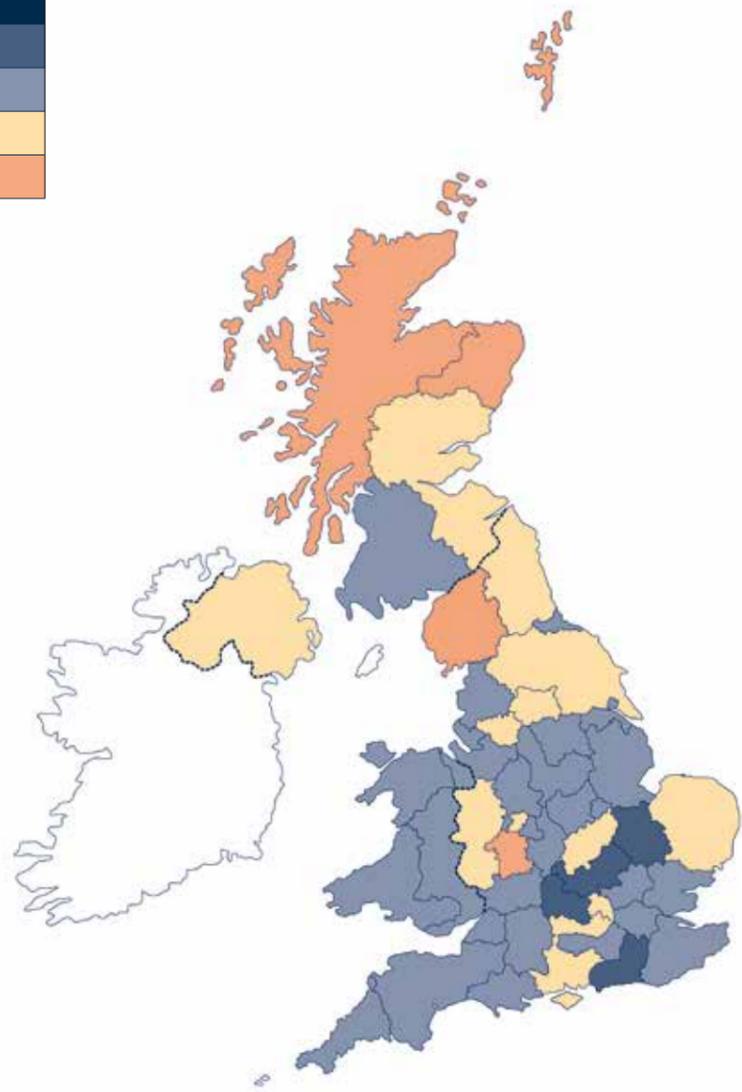
## Strategic and marketing innovation

Alongside product, service and process innovation it is increasingly recognised that significant commercial advantage may also stem from strategic and marketing innovations. This metric is derived from a survey question which asks firms whether over the 2010 to 2012 period they 'introduced any new methods for organising work responsibilities and decision making or implemented changes to marketing concepts or strategies'. As previously the metric is expressed as the percentage of firms in each local economic area undertaking this type of innovative activity.

The geography of strategic and marketing innovation again reflects strong performance among those local economic areas in Central and Southern England but perhaps a more even level of performance in other areas (Figure 7). In particular the low levels of product, service and process innovation activity observed for coastal parts of Eastern England are less evident in terms of the geography of strategic and marketing innovation.

Figure 7: Strategic and marketing innovation by local economic area (% innovating firms)

LOWER	UPPER	
30.0	34.9	
25.0	29.9	
20.0	24.9	
15.0	19.9	



Among the English local economic areas, strategic and marketing innovation was most common among firms in the Cambridge and Coast to Capital areas the latter of which includes Southampton (Figure 8). These areas are closely followed by Oxfordshire and the South East Midlands (which includes Milton Keynes and Luton), both areas which also performed strongly in terms of product, service and process innovation.

Towards the lower end of the table, strategic and marketing innovation by firms in Cumbria and was only slightly more than half as common as that in Cambridge. Despite this strategic and marketing innovation remains more common in many Northern and coastal regions than either product, service or process change (Figure 8).

Variation in levels of strategic and marketing innovation between those areas outside England is less significant than within England. Areas of Wales again had marginally higher rates of strategic and marketing innovation than Scotland or Northern Ireland (Figure 8).

Figure 8: Strategic and marketing innovation by local economic area (% innovating firms)

ENGLISH LEAS	%
Greater Cambridge & Peterborough	32
Coast to Capital	31
Oxfordshire LEP	31
South East Midlands	31
Cornwall and the Isles of Scilly	30
Derby, Derbyshire, Nottingham, Notts.	30
Gloucestershire	30
Liverpool City Region	30
Swindon and Wiltshire	30
Dorset	29
Enterprise M3	29
Hertfordshire	29
Tees Valley	29
Worcestershire	29
Cheshire and Warrington	28
Coventry and Warwickshire	28
Heart of the South West	28
South East	28
West of England	28
Greater Lincolnshire	27
Humber	27
Lancashire	27
Leicester and Leicestershire	27
London	27
Greater Birmingham and Solihull	26
Sheffield City Region	26
Stoke-on-Trent and Staffordshire	26
North Eastern	25
Leeds City Region	24
Black Country	23
Northamptonshire	23
Thames Valley Berkshire	23
The Marches	23
York and North Yorkshire	23
Buckinghamshire Thames Valley	22
Greater Manchester	22
New Anglia	21
Solent	21
Cumbria	19

OTHER UK	%
East Wales	28
West Wales & The Valleys	26
SW Scotland	26
Eastern Scotland	21
Northern Ireland	20
NE & Highlands & Islands	18

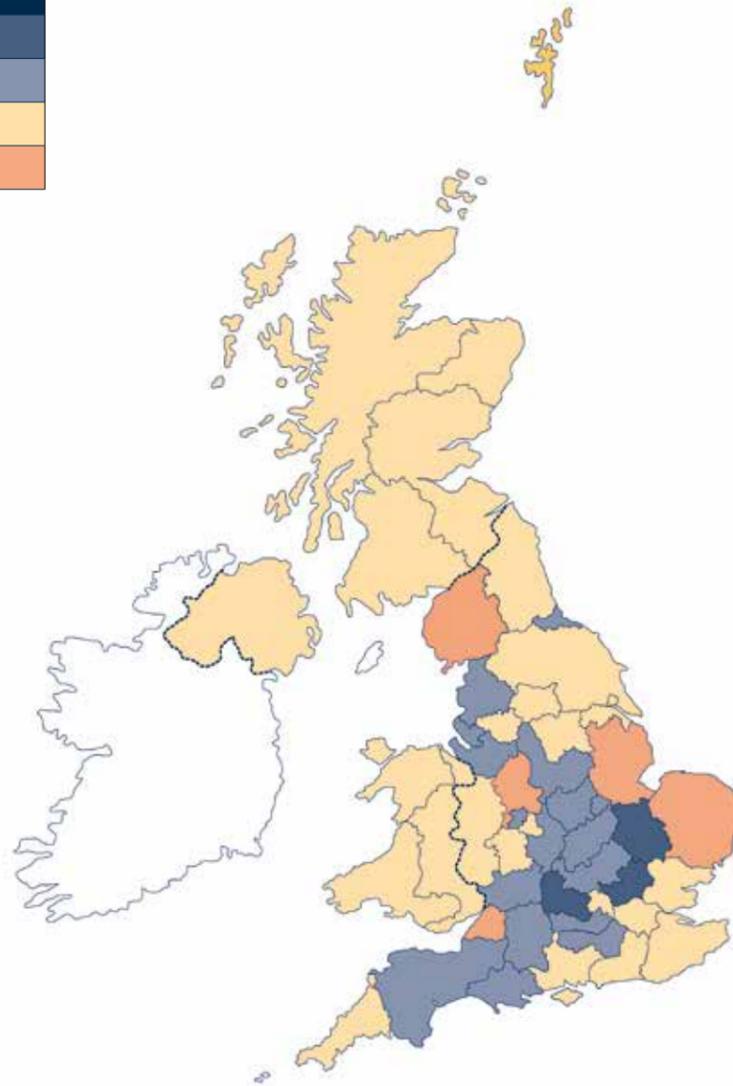
## Research and development (R&D)

R&D provides one of the key inputs into firms' innovation activity. Not only can R&D provide the new knowledge or technological discovery which might drive innovation. There is also substantial evidence that R&D personnel are important in enabling firms to identify external knowledge or technologies which may help to develop the firm's own innovation. In part this may reflect the expertise of R&D personnel but may also be related to their personal links and networks to other researchers.

The geography of R&D activity in the UK perhaps unsurprisingly reflects relatively closely that of product and service innovation discussed earlier: central areas have among the highest proportions of R&D performing firms while levels of R&D activity are lower in more Eastern coastal areas of the UK. Among areas in the North of the England, Tees Valley again stands out as an area in which the proportion of R&D firms is relatively high along with much of the North West.

Figure 9: Percentage of firms undertaking R&D by local economic area (% firms)

LOWER	UPPER	
22.0	30.0	
17.0	21.9	
12.0	16.9	
0.0	11.9	



The proportion of firms undertaking R&D varies widely by local economic area in England from 28 per cent in Oxford and 26 per cent in Cambridge to 8-10 per cent in Lincolnshire and the West of England (Figure 10). As previously, however, firms' engagement with R&D will depend not only on their innovative intent but on the type of sectors in which they are engaged. This is reflected in the concentrations of high-tech and life sciences companies close to Oxford and Cambridge.

The proportion of firms reporting R&D in Scotland, Wales and Northern Ireland was either at or below the English average. Northern Ireland, with the lowest proportion of R&D performing firms (12 per cent) was above that of the least R&D active English areas (West of England, 10 per cent; Lincolnshire, 8 per cent).

Figure 10: Percentage of firms undertaking R&D by local economic area (% of firms)

ENGLISH LEAS	%
Oxfordshire LEP	28
Greater Cambridge & Peterborough	26
Northamptonshire	22
Leicester and Leicestershire	21
Black Country	20
Enterprise M3	20
Gloucestershire	20
Swindon and Wiltshire	20
Coventry and Warwickshire	19
Liverpool City Region	19
South East Midlands	19
Cheshire and Warrington	18
Dorset	18
Heart of the South West	18
Lancashire	18
Tees Valley	18
Thames Valley Berkshire	18
Coast to Capital	17
Derby, Derbyshire, Nottingham, Notts.	17
Leeds City Region	17
Sheffield City Region	17
Greater Manchester	16
Hertfordshire	16
London	16
North Eastern	16
Solent	16
South East	15
Buckinghamshire Thames Valley	14
Greater Birmingham and Solihull	14
The Marches	14
Worcestershire	14
Cornwall and the Isles of Scilly	13
Humber	13
York and North Yorkshire	13
Cumbria	12
New Anglia	12
Stoke-on-Trent and Staffordshire	12
West of England	10
Greater Lincolnshire	8

OTHER UK	%
West Wales & The Valleys	15
Eastern Scotland	15
NE & Highlands & Islands	15
East Wales	14
SW Scotland	14
Northern Ireland	12

## Collaboration for innovation

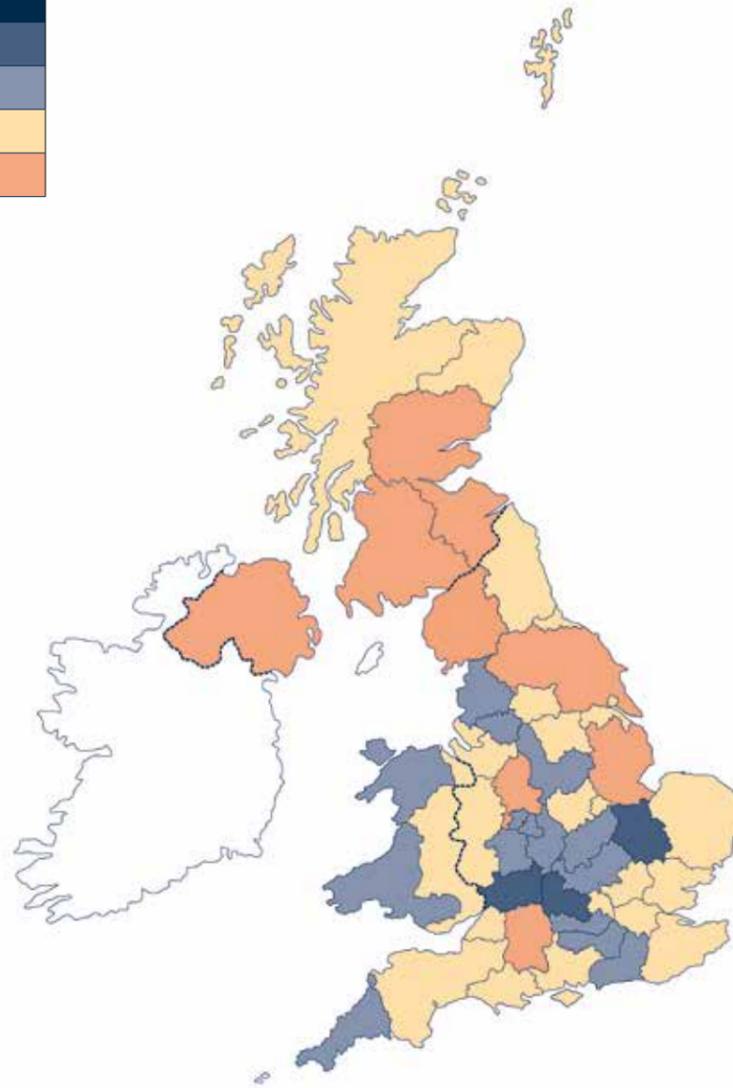
Notions of open, partnering or networked innovation have received considerable recent attention with the research literature suggesting that collaboration can deliver significant benefits for innovating firms. High levels of collaboration by firms in a locality can also help improve knowledge diffusion and ensure that firms maximise the potential of any innovative opportunities.

Here we report a metric based on the percentage of firms in any local economic area which were collaborating for innovation during the period 2010 to 2012. Collaboration need not have been continuous over this period and partners were not necessarily local. The metric simply records whether firms worked with other partners on their innovation activity over this period.

The geography of collaboration in the UK reflects closely that identified earlier for innovation itself with hot spots in hot spots in Central and Southern areas. Areas where innovation itself is less common – the North and Eastern coastal regions – levels of collaboration are also lower.

**Figure 11: Collaboration for innovation by local economic area (% of firms)**

LOWER	UPPER	
25.0	35.0	
20.0	24.9	
15.0	19.9	
0.0	14.9	



Reflecting closely the situation for R&D levels of collaboration for innovation were highest in Oxfordshire LEP, involving around a third of firms, and Cambridge and Peterborough. In the majority of other strongly performing areas in the South Midlands more than a fifth of firms were collaborating as part of their innovation activity. One notable absentee from the top of the table here is the Tees Valley which performed well on a number of the innovation metrics but where levels of cooperation between firms and other organisations is only around the UK average level. A number of other English LEAs with below average levels of innovative activity also fare relatively poorly in terms of collaborative activity

As with the earlier innovation metrics, levels of innovation collaboration in areas outside England matched, or were below, the English average. Levels of collaborative innovation in Northern Ireland, South West and Eastern Scotland are among the lowest in the UK.

**Figure 12: Collaboration for innovation by local economic area (% of firms)**

ENGLISH LEAS	%
Oxfordshire LEP	31
Greater Cambridge & Peterborough	27
Gloucestershire	26
Black Country	24
Enterprise M3	24
South East Midlands	24
Cornwall and the Isles of Scilly	23
Coast to Capital	22
Coventry and Warwickshire	21
Greater Manchester	21
Thames Valley Berkshire	21
Worcestershire	21
Humber	20
Lancashire	20
Leeds City Region	20
Liverpool City Region	20
Solent	20
Tees Valley	20
The Marches	20
Cheshire and Warrington	19
Derby, Derbyshire, Nottingham, Notts.	19
Dorset	19
Hertfordshire	19
London	19
North Eastern	19
Northamptonshire	19
Greater Birmingham and Solihull	18
Leicester and Leicestershire	18
Sheffield City Region	18
South East	18
West of England	18
Buckinghamshire Thames Valley	17
Heart of the South West	17
New Anglia	16
Greater Lincolnshire	15
Stoke-on-Trent and Staffordshire	15
Swindon and Wiltshire	15
Cumbria	14

OTHER UK	%
West Wales & The Valleys	19
East Wales	19
NE & Highlands & Islands	17
Northern Ireland	14
Eastern Scotland	13
SW Scotland	13

# Conclusions

Moves towards more localised policy design and implementation in England have created a renewed interest in local economic indicators. Here, based on a new analysis of the UK Innovation Survey data (covering 2010 to 2012), we report a range of benchmarks relating to the local geography of innovation. Innovation is important as it both contributes to productivity and provides the basis for business growth through the development of new export market opportunities. Research has also linked innovation positively to resilience: innovating firms are more likely to be able to adjust when market conditions become more challenging.

Our analysis suggests a rather consistent picture across different indicators relating to product and service innovation, more radical 'new to the market' innovation, managerial changes, R&D and collaboration. The UK's innovation heartland is a heartland is a cluster of local economic areas in Central and Southern England. Across the six measures firms in Oxfordshire LEP report the most innovation activity followed closely by Greater Cambridge and Greater Peterborough (Figure 13). South East Midlands and Gloucestershire follow relatively closely. Tees Valley is the best performing of the Northern local economic areas. Eastern Scotland, Northern Ireland and Cumbria are at the foot of the rank orderings.

**Figure 13: Ranking of local economic areas by innovation benchmarks**

ENGLISH LEAS	Product/Service	New to market	Process	Strategy/Marketing	R&D	Collaboration	Overall
Oxfordshire LEP	1	5	1	2	1	1	1
Greater Cambridge & Peterborough	5	10	5	1	2	2	2
South East Midlands	3	6	7	3	9	6	3
Gloucestershire	2	17	12	7	6	3	4
Enterprise M3	4	1	21	12	7	4	5
Dorset	10	2	3	11	13	21	6
Tees Valley	8	15	2	10	12	14	7
Coast to Capital	18	3	11	4	18	8	8
Swindon and Wiltshire	7	9	4	5	5	38	9
Liverpool City Region	16	25	14	8	10	13	10
Northamptonshire	9	16	6	33	3	20	11
Cheshire and Warrington	15	22	13	16	14	22	12
Cornwall and the Isles of Scilly	19	26	8	6	37	7	13
Coventry and Warwickshire	24	23	23	17	11	9	14
Lancashire	6	33	16	22	16	15	15
Black Country	14	30	19	34	8	5	16
Leicester and Leicestershire	11	35	10	21	4	29	17
Thames Valley Berkshire	17	11	30	35	17	10	18
Hertfordshire	37	7	28	14	22	24	19
Greater Manchester	26	19	18	38	25	11	20
Heart of the South West	21	18	31	18	15	34	21
Derby, Derbyshire, Nottingham, Notts.	20	31	37	9	19	23	22
North Eastern	23	8	29	31	24	26	23
Leeds City Region	22	28	24	32	21	16	24
London	32	20	22	23	23	25	25
Worcestershire	39		26	13	31	12	26
Sheffield City Region	27	29	15	26	20	30	27
Greater Birmingham and Solihull	25	4	27	29	33	32	28
East Wales	12	36	34	20	32	28	29
South East	28	24	33	19	27	31	30
Solent	33	14	32	41	26	17	31
Stoke-on-Trent and Staffordshire	29	13	17	27	40	40	32
West of England	34	34	9	15	44	33	33
West Wales & The Valleys	35	37	20	28	28	27	34
SW Scotland	40	12	35	30	34	45	35
The Marches	38		39	37	35	18	36
Buckinghamshire Thames Valley	30	27		39	36	36	37
Humber	44		42	25	38	19	38
NE & Highlands & Islands	13	40	40	45	30	35	39
York and North Yorkshire	45	21	36	36	39	39	40
Greater Lincolnshire	31		41	24	45	41	41
New Anglia	43	38	25	40	41	37	42
Eastern Scotland	36	32	43	42	29	44	43
Northern Ireland	41	39	38	43	42	42	44
Cumbria	42			44	43	43	45

**Notes:** Rankings for each benchmark are derived from earlier Figures. The overall ranking is based on the average ranking across the individual benchmarks. Where individual benchmarks were not available local areas' average ranking was based on those benchmarks which were available.

Two important caveats need to be borne in mind when considering these results. First, as mentioned previously, the level of innovative activity in a locality will depend both on the type of business activity in the area as well as the innovativeness of individual firms. High levels of innovative activity in Oxfordshire and Greater Cambridge and Peterborough LEAs may therefore reflect both factors. Second, it is also important to remember that our benchmarks are based on survey data, albeit from over 14,000 firms. This inevitably means that our results are subject to some measurement error although the picture we observe in 2010 to 2012 is very similar to some analysis we conducted for earlier periods.

While our benchmarks provide an overview of the geography of innovation across the UK they also raise questions about 'why' this pattern arises. Addressing this question is likely to require more detailed statistical and institutional analyses of the drivers of innovation at the local level. Only in this way will we be clear about the impact and effectiveness of different elements of the business eco-system on local innovation outcomes.

## Annex 1: Methodological notes

The metrics reported here are derived primarily from the UK Innovation Survey (UKIS) wave 8 – UKIS 2013 - covering the period 2010-12. Conducted in 2013 this survey covers sections B-N of the Standard Industrial Classification 2007. It therefore omits any coverage of agriculture, and some services. The survey was sent to over 28,000 companies and valid responses were received from 14,487 enterprises, a response rate of 51 per cent .

Two main steps have been necessary to develop local innovation benchmarks from the original survey data file. First, postcodes on the UKIS are matched to the UK postcode directory in order to attach Local District Authorities and/or NUTS areas and these are matched into the local areas. Benchmarks are reported for 45 UK areas: the 39 Local Economic Areas (LEP areas) in England; three areas in Scotland – Eastern, South West and Highlands and Islands & the North East; two areas in Wales – East Wales and West Wales and the Valleys; and, Northern Ireland.

Second, as the UKIS is a structured survey with higher sampling rates among larger firms it is also necessary to weight observations to ensure that the results are representative of each local area. To do this we profiled the population of firms in each local area using the 2010 Business Structures Database and then developed new weights to gross observations in each local area to the local firm population. Weights for each LEP were developed to reflect three broad sectors and four enterprise size bands .

Two further points are worth making in relation to the local innovation benchmarks presented here. This is secondary analysis – using the UKIS survey for a purpose for which it was not originally intended – and the results must therefore be considered in this light. In particular, the UKIS was originally structured to be representative of Government Office regions in England (rather than Local Economic Areas). We are therefore extending the use of the data beyond its original design in undertaking this analysis. Having said this, it turns out that (un-weighted) observation numbers for most LEAs (except some of the smaller rural LEAs) are reasonable and that the resulting weights are very similar across LEAs. Second, before release for publication, data have also been checked for 'disclosure', i.e. the ability of an interested party to identify any individual business from published data. This results in a small number of results which are unavailable particularly for rural LEAs where the number of firms undertaking innovation is relatively small.

## Data acknowledgement

The statistical data used here is from the Office of National Statistics (ONS) and is Crown copyright and reproduced with the permission of the controller of HMSO and Queens Printer for Scotland. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. The analysis upon which this paper is based uses research datasets which may not exactly reproduce National Statistics aggregates.

<sup>1</sup>Hooker, H and Achur, J (2013) 'First findings from the UK Innovation Survey 2013', Department for Business Innovation and Skills. Available at: [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/301385/14-p107a-first-findings-from-the-ukis-2013.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/301385/14-p107a-first-findings-from-the-ukis-2013.pdf).

<sup>2</sup>The one exception here was Northern Ireland where the region itself coincided with the original weighting structure provided with the survey data. Here, the original weighting structure was used.



For more information on ERC  
please contact:  
Janette Burklund  
**[Janette.Burklund@wbs.ac.uk](mailto:Janette.Burklund@wbs.ac.uk)**  
or  
Wendy Ferris  
**[w.ferris@aston.ac.uk](mailto:w.ferris@aston.ac.uk)**