Communities
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Place matters: the Location Strategy for the United Kingdom

November 2008

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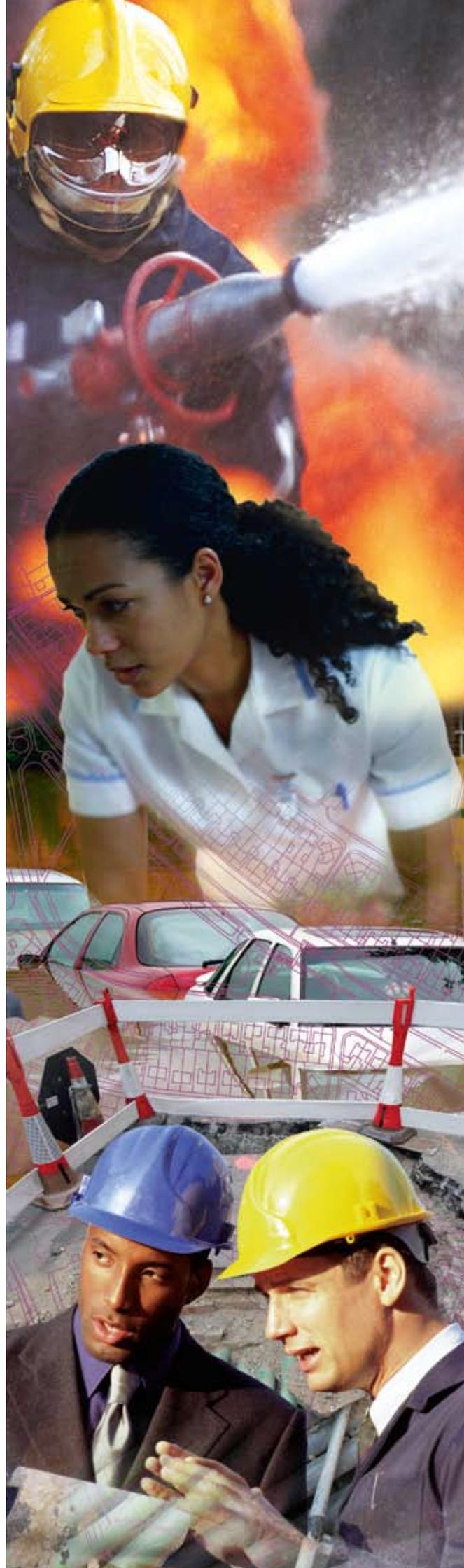
Place matters:
the Location Strategy for the United Kingdom

A Report by the Geographic Information Panel to
Baroness Andrews, Minister for the Geographic Information Panel

November 2008

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Foreword

In almost everything, people need to know when and where things happen: place matters.

In 2006 I asked the UK Geographic Information Panel to draw up a Strategy for the Nation.

This is their report to me. It has been accepted by the Government as the direction of travel for location based information in the United Kingdom.

The Location Strategy for the United Kingdom is a thoughtful, authoritative and important document and its recommendations are closely aligned to the delivery of government policy in many areas. Ministerial colleagues share with me in recognising the reality, identified by the Strategy that 'everything happens somewhere'.

The Government acknowledges that a better understanding of location is an important factor in moving forward the transformational government agenda. Implementation of the Location Strategy will maximise the value to the public, government and UK industry of the use of geographic information. It will provide a consistent framework to assist national, regional and local initiatives, and service delivery for the benefit of all our people.

Key areas where the Location Strategy will be of benefit are in policy and operational areas of the public and private sector, where shared and integrated place-based information is essential for decision making. It will also be the basis for delivering the United Kingdom's obligations under the European INSPIRE directive.

The important next steps are:
• to invite comment on the Strategy and on how it should be taken forward; and
• to ensure the appropriate funding allocations have been made to support its implementation.

These steps are being taken forward by the Location Council, led by Defra, as recommended in this report.

It will continue the excellent work undertaken by the UK Geographic Information Panel, which will now be dissolved. I wish to place on record my thanks to the UK Geographic Information Panel, chaired by Vanessa Lawrence CB, for their excellent work in conceiving, developing and championing the UK Location Strategy to this point.

Baroness Andrews
Parliamentary Under Secretary of State
Department for Communities and Local Government

Executive Summary

1. **Place matters. Everything happens somewhere**. If we can understand more about the nature of place, where events happen, and the impacts on the people and assets at that location, we can plan better, manage risk better and use our resources better. This will increase the success rate for new initiatives, assist in the reduction of the potential for future problems and give tangible financial benefits.

2. Currently, too few government-owned datasets that incorporate location can be easily assembled and analysed with reliability from across local and central government bodies. There remains too much duplication, too little reuse and too few linkages across datasets which are required to support policy implementation in, for example, planning, housing, flooding, social exclusion and traffic management.

3. The objective of the Location Strategy for the United Kingdom is to maximise the value to the public, government, UK business and industry of geographic information. It will provide a consistent framework to assist national, regional and local initiatives and service delivery.

4. Key areas where the Location Strategy will be of benefit are in policy and operational areas of the public and private sector where shared and integrated place-based information is valuable for decision making. These include planning for communities, environment, health, education, security, construction, transport, crime prevention, insurance, retail, energy, climate change, agriculture, heritage, sport, employment and statistics. To illustrate these benefits this document is interspersed with five real-world case studies that provide an insight into exemplars of today: these will become the norm over the next five years through the implementation of an effective Location Strategy.

5. The Location Strategy will be delivered in a cooperative effort owned by central, local and devolved governments in the UK. It will focus on joining up and integrating information from many sources within a consistent reference framework, leading to more effective cross-organisational processes, far greater sharing and reuse across the public sector and beyond.

6. The Geographic Information Panel has consulted widely (see list of stakeholders at appendix 2), including with OPSI, and has agreed the recommendations and actions required to deliver this Strategy.

7. The members of the Geographic Information Panel, drawn from the public and private sectors, recommend this Strategy and the actions set out in it. They believe that the costs of implementation are far exceeded by the benefits which begin delivering substantially within the next three years. A Location Strategy is seen to be in the nation's interest and essential to ensure maximum value from the resources, which will need to be spent in any case on effective implementation of the INSPIRE Directive.

Place matters: the Location Strategy for the United Kingdom

Introduction

8. Much information collected by the public sector contains 'place-based' or 'location-based' information. This is known as geographic information. When different types of information about a particular place are compared or related to each other, this can increase considerably the understanding, and hence the power to make effective decisions about a particular 'place'.

    to the **citizen**, effective geographic information, combined with other data, translates into emergency services turning up quickly at the right place, knowing where local services are, avoiding traffic congestion and being able to manage one's life better by having access to greater information.

    for **communities**, geographic information facilitates equitable regeneration funding and enables solutions to problems such as deprivation, crime and disorder to be tackled effectively in a joined-up way.

    to **local government**, geographic information supports partnerships, helps it to deliver better and more effective public services, and creates efficiencies by helping to target the right resources in the right places; this in turn empowers citizens to be more independent.

    for **central and devolved government**, geographic information supports effective policy formulation and evaluation; it is essential in supporting our approach to climate change, in managing UK-wide emergencies such as an outbreak of foot and mouth disease or dealing with flooding, and also provides critical support for our security services.

9. In the April 2006 Transformational Government Implementation Plan, Ministers asked the Geographic Information Panel to create a UK Geographic Information Strategy[1]; the background to the thinking behind the creation of the Strategy together with details of the members of the Geographic Information Panel is listed in Appendix 1.

10. The term 'geographic information' is not widely understood across the wider public and private sectors. Location is easier to understand. We mean the same by both terms.

11. The aim of the Strategy is to maximise exploitation and benefit to the public, government and UK industry from geographic information and to provide a framework to assist European, national, regional and local initiatives. Implementation across the UK of the Location Strategy will build a coherent Information and Communication Technology (ICT) oriented information infrastructure for place-based information, which will assist policy, local service delivery and operational decision making. It will drive out costs in collection of data, drive reuse of data and drive efficiency by improving targeting of both policy and operational delivery, which in turn will reduce the costs of implementation. It will be a cooperative effort owned by central, local and devolved governments in the UK.

Why place matters

12. The question 'where?' is asked constantly, for example:

    • Where should I locate the new school which amalgamates three existing ones?

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[1] Transformational Government Implementation Plan. Cabinet Office, April 2006. http://www.cio.gov.uk/transformational_government/implplan/

- Where is my closest recycling centre?
- Where will flooding happen?
- Where should a new drugs rehabilitation centre be located?
- Where will this pollution cause problems?
- Where are the neighbourhoods which need additional regeneration funding?

13. Although some of these 'where' questions can be answered easily, many are more complex to answer and require the merging of several sets of information from different sources to support the decision making process; this is where the Location Strategy comes into play. For example, the school consolidation process requires at least:

- the location of the schools
- the home addresses of the existing pupils
- census information to predict the future levels of school-aged children in the area
- the availability of suitable land
- travel times and distance to school.

14. The assimilation of this diverse information and the creation of several 'what if?' scenarios are made much easier by integrating all the sources within a consistent reference framework. This is where geographic information and analysis tools add considerable value by providing the 'place' dimension to support decision making. The importance of place was reinforced in the White Paper on Local Government for England[2].

Analysis of Service Locations

One of the Northern Ireland Ambulance Service's (NIAS) key targets concerns response time to Category A emergency calls. The current target performance level is for the ambulance to be with the patient within eight minutes of the call, in 75 per cent of cases. In 2006, the Service met this call-out time for approximately 50 per cent of Category A calls. The Service prepared a business case for the Department of Health Social Services and Public Safety to purchase additional ambulances and invest in a number of new stations to allow them to meet the target.

Staff in the Strategic Investment Board (SIB) worked with the Department and NIAS to investigate whether the investment identified in the business case would be capable of improving the service and meeting the national target. A number of service-improving options were considered and one of these related to reducing the distance that ambulances would have to travel. This required a 'blue-sky' reassessment of need to determine the best positioning of the 60 existing ambulances to allow more rapid response. After completing analysis of locations (using desktop software, NIAS database information and census data), 11 possible deployment options were discussed with the optimal option requiring 60 locations (these being dynamic deployment points, moving with time of day). These locations, when implemented, will allow existing resources to improve performance from 50 per cent to approximately 70 per cent. Further refinement of the service model will allow improvement to 74 per cent without significant additional investment. A business case for this plan is now been compiled.

Why do we need a Location Strategy for the United Kingdom?

15. Current users of geographic information spend 80 per cent of their time collating and managing the information and only 20 per cent analysing it to solve problems and generate benefits. We need to address this imbalance. Much of the information collected is not available to be used again as it is not known widely that it was collected and it is not known where it is stored. Data is likely to have been collected using local rules preventing its use with data about the same location from another organisation. It may also have been collected in a particular data format that is not universally used and the quality of collection may not be known.

16. The current situation:
- imposes costs and inefficiency on a wide range of public sector bodies due to duplication of effort of collecting similar data and difficulties in sharing information
- hampers the use and integration of accurate place-based information to inform policy development and the fair distribution of resources
- impedes government strategies for improving services to the citizen
- imposes difficulty for citizens to know where data can be sourced for community

applications that encourage local contributions to the available information, eg a community's web application combining different data to help resolve local issues.

Better Targeted Services

The application of geographic information has been used to significant effect by three public sector agencies; Scottish Enterprise, Highlands and Islands Enterprise and the Scottish Executive working in collaboration with the telecoms industry to support state intervention in the market for broadband services in Scotland. In March 2003 only 42 per cent of Scotland's population were able to access broadband services. In line with UK and Scottish government policies there was a political priority; as a result a £24 million Scottish Executive's Broadband Access Programme budget was allocated, to accelerate both provision and uptake of broadband in line with other OECD countries. Problems in Scotland were exacerbated by the fact that half of its land mass is sparsely populated. The geographic information support function was very effectively used to:
- quantify and monitor extent of market failure
- support a range of activities to resolve failure through demand stimulation
- encourage free market participation through better market intelligence disseminated via an extranet web mapping function
- quantify the extent and scope of a significant 'supply side' intervention calling for physical infrastructure via an OJEU tender notification
- inform a wide range of stakeholders as to current market situation and current progress
- supported a Scotland-wide media marketing campaign with provision of target intelligence and support for the public facing website

- monitor and track market penetration levels
- support and justify application for European Regional Development Funding.

The key benefit that the project provided was through an ability to ensure diligent and accountable expenditure of public money. The information derived from the application has been influential in bringing about a situation where broadband coverage has now reached over 91 per cent of the Scottish population; up from 42 per cent in March 2003.

17. It is very clear that within the UK:
- There is currently little understanding of the data collected, stored or maintained by either the public or private sector.
- In addition, it has been recognised that within the UK there are too few data standards (ie ISO, BSI or other) universally used for referencing and the collection of place-based data prescribed by either government or the private sector.

18. Moreover, most data in government has two key attributes:
- who is it about? – the identity of individual people and companies
- where is it about? – the location of communities, assets, events or environmental conditions.

19. The importance of identity management is already widely recognised – and the Government has a major programme known as the National Identity Scheme to establish a national infrastructure for identity matters. However, hitherto the importance of location has not been as widely recognised. The Location Strategy complements the focus already being given to 'who' by introducing a separate parallel focus on 'where'. For many areas of policy and service delivery effectiveness requires good information on both.

Improved Local Service Delivery

Barnet is one of the largest boroughs in London, situated to the north west of the city, bordering on Hertfordshire. Barnet has deployed GPS-enabled street wardens to locate, identify and photograph abandoned vehicles; graffiti; antisocial behaviour and fly-tipping, and send information immediately back to head office to ensure a rapid and efficient response immediately against what was a three-to-four-day process.

Street wardens using a geographically-based system called StreetPatrol are able to spend up to 70 per cent of their time on patrol; those without StreetPatrol only manage 30 per cent on patrol.

Based on an average salary of £23,000, each StreetPatrol-enabled warden is delivering £7,500 in efficiencies. Barnet's team of 24 wardens therefore are delivering £180,000 in efficiency savings. Speed of response also realises cost savings: an abandoned vehicle costs approximately £50 to recover; a burning vehicle nearly £4,000.

20. During the development of the Strategy it was recognised that over 80 per cent of all public sector information has a location element, for example:
    - an address
    - a postcode
    - a neighbourhood
    - a census output area
    - a map coordinate
    - a political or structural boundary.

21. In addition, several reports have been published involving 'place data' over the last few years; they have demonstrated the importance of location-based information:
    - public sector information is a huge untapped asset (OFT, 2006)[3]
    - geographic information from Ordnance Survey alone is said to underpin in excess of £100 bn of GDP per annum (OXERA, 1999)[4]
    - the *Economist* reported in 2006 that information-rich sectors of the UK economy are faster growing than the rest of the economy over the past five years
    - figures from the US Bureau of Labor Statistics in 2006 show that the US economy has identified location information as one of the fastest growing sectors of the economy above biotechnology and at least the third largest growth sector for employment.

22. A further influence on the development of the Strategy has been the publication of the European Union (EU's) INSPIRE Directive (INfrastucture for SPatial InfoRmation in Europe), which became European law on 15 May 2007. The INSPIRE Directive lays down general requirements to establish an infrastructure for spatial information in Europe for the purposes of EU environmental policies and policies and activities which may have an impact on the environment, using spatial data held by public authorities. Member States will have to transpose the Directive (bring into force any laws, regulations and administrative provisions to comply with the Directive) within two years of that date (ie by 15 May 2009). Additionally, Implementing Rules, largely surrounding technical aspects of the Directive, will be implemented directly as decisions and regulations, through the Comitology procedure.

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[3] Office of Fair Trading, Market Study on Commercial Use of Public Information, December 2006.
http://www.oft.gov.uk/advice_and_resources/resource_base/market-studies/public-information
[4] The economic contribution of Ordnance Survey, OXERA (Oxford Economic Research Associates Ltd) Final Report, September 1999.
http://www.ordnancesurvey.co.uk/oswebsite/aboutus/reports/oxera/index.html

23. However a Location Strategy for the UK needs to go beyond INSPIRE itself. The local, regional, country and national needs within the United Kingdom require considerably more support. In addition to supporting individual 'place-based' initiatives, there is a need to underpin legislative arrangements for the like of:
    • traffic management
    • countryside and rights of way
    • land registration
    • property valuation
    • civil contingencies
    • marine protection

and to support public service requirements that directly impact on people's lives, for example:
    • planning and land use needs
    • social exclusion programmes and their equivalents at regional levels
    • waste collection
    • monitoring the impact of climate change.

24. These all have a location component and the need to view and share information at the local, regional and national level is much broader than environmental policy, which is covered by INSPIRE.

Outcomes of the Location Strategy for the United Kingdom

25. The implementation of the Location Strategy will focus on joining up and integrating information from many public sector sources within a consistent reference framework, leading to far greater sharing and use across the public sector and beyond. It will build a coherent Information and Communication Technology (ICT) oriented information infrastructure to underpin data sharing for place-based information, which will assist policy delivery and operational decision making. It will drive out costs in collection of data, drive reuse of data and drive efficiency by improving targeting of both policy and operational and local service delivery, which in turn will reduce the costs of implementation. This will result in information about UK's land, sea and air being:
    - fit for purpose
    - collected once to universally accepted standards
    - appropriately maintained and used many times by the public and private sector
    - referenced to a definitive information framework which supports its seamless combination
    - better enable effective cross-organisational business processes
    - easy to discover, and with clear terms for its use
    - simple to access and easy to share and integrate
    - understood sufficiently to maximise its application
    - aligned with Europe and the INSPIRE Directive.

Outcomes for stakeholders

26. The implementation of the Location Strategy will deliver benefits to a range of stakeholders across the economy:

    - **Citizens and communities** will benefit through better targeted services. It will be much easier to answer the question 'where?' and hence understand the question 'why?'

    - **Public Sector/Government – service providers** will share information across partnerships in the delivery of joined-up services that are more effectively targeted, eg tackling crime and disorder and emergency planning.

    - **Public Sector/Government – policy makers** will have access to all the right information to support evidence-based policy development and monitoring. Policies will be better targeted through knowing the recipients' characteristics and locations, eg Assisted Area Status, the use of low grade agricultural land for housing.

    - **Public Sector/Government – information suppliers** will be expected to produce location information that is consistent and compliant with accepted standards, allowing the seamless joining up of information. Appropriate licensing arrangements will increase the use of their information. Information will be collected once and shared and used many times.

    - **Third sector** will be able to partner more efficiently and effectively in the delivery of services through more information sharing.

    - The **private sector** will be able to complement the public sector more effectively in the creation of place-based information and associated value-added services using definitive information

frameworks and standards. Geographic information and its exploitation is a rapidly growing and profitable industry – the UK is at the leading edge of this industry but may lose out to international competitors if the technology is not properly harnessed and managed.

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Underpinning innovation

It is likely that the ease of accessing, sharing and integrating consistent place-based information across the public sector and beyond will leverage innovation and significantly extend the innovative use of information. Over the last year innovation for non-commercial use has been generated in the 'mash-up' community using place-based information and also in the Web 2.0 community.

'One of the most remarkable examples of how much new value can reside inside what is essentially old information is the seemingly mundane field of postcodes. Originally, postcodes were allocated and recorded simply to help the Post Office deliver letters and parcels. These days the database describing which postcodes are to be found where in the UK underpins countless websites, from that of National Statistics to those of pizza-delivery companies. Every day new uses are found, generating extra value at no additional cost to the public sector.'[5]

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27. As well as benefiting the individual citizen and communities through greater efficiency and effectiveness of service design and delivery, the implementation of the Location Strategy will bring even greater levels of benefits directly to the overall economy, the business community and the academic and voluntary sectors.

Figure 1 overleaf illustrates the central role that location information can play in implementing a range of public policy agendas within three overarching themes:

- Stimulating increased efficiency and social engagement by promoting the use of 'place' in government.
- Protecting and sustaining the UK environment through geographic knowledge.
- Supporting economic development by understanding the UK economic landscape through geography.

[5] The Power of Information: an independent review. Ed Mayo and Tom Steinberg. June 2007 paragraph 16.
http://www.cabinetoffice.gov.uk/upload/assets/www.cabinetoffice.gov.uk/publications/reports/power_information/power_information.pdf
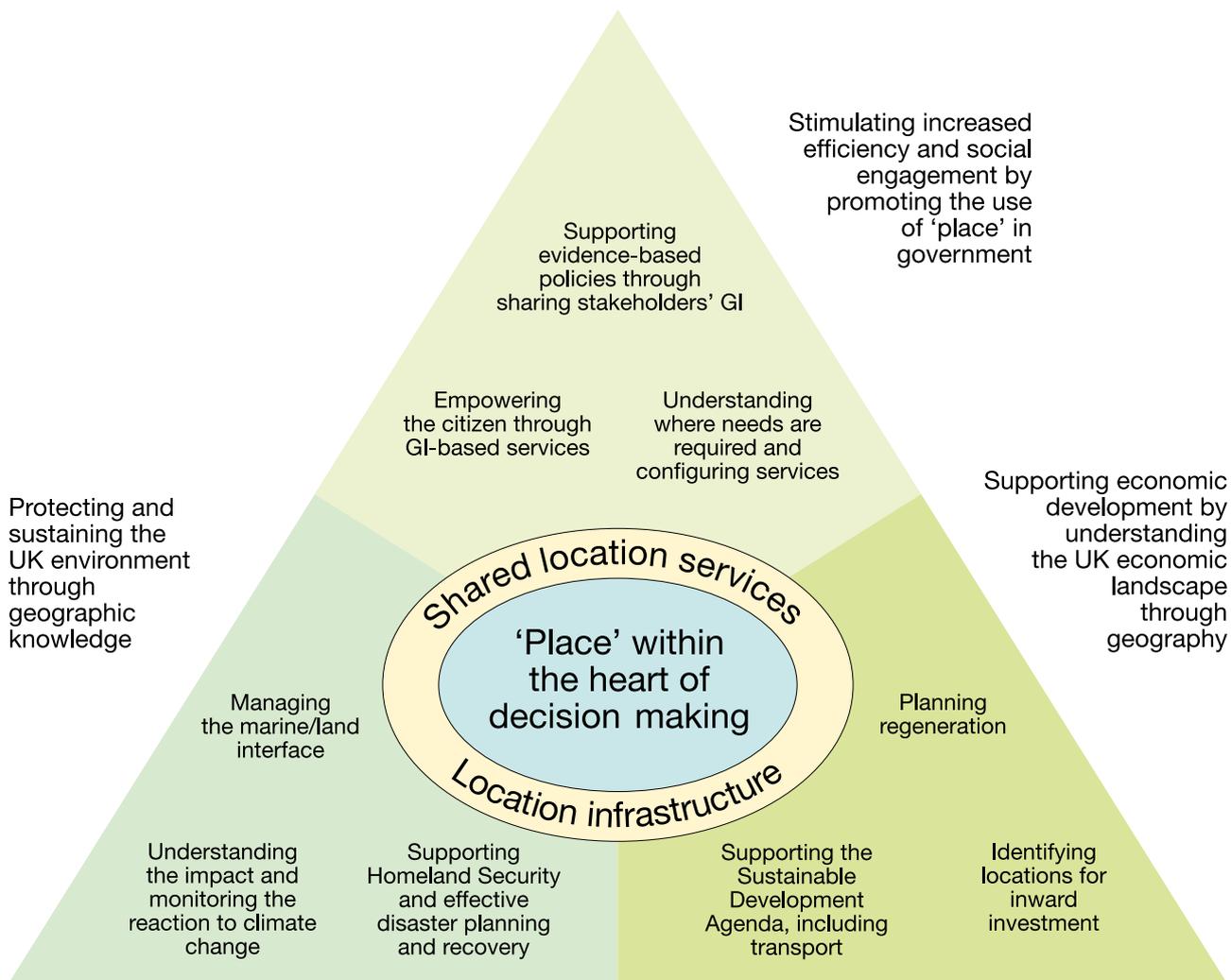
Figure 1: Application of location information to public policy

Strategic Actions

28. To ensure that the UK exploits the full value of its information the Location Strategy requires a programme of strategic actions which ensure that:

    (1) we know what data we have, and avoid duplicating it

    (2) we use common reference data so we know we are talking about the same places

    (3) we can share location-related information easily through a common infrastructure of standards, technology and business relationships

    (4) we have the appropriate skills, both among geographic professionals and among other professional groups who use location information or support its use

    (5) we have strong leadership and governance to drive through change, including the implementation of this Strategy and the implementation of INSPIRE. (We term this the Location Council – see below.)

Knowing what data we have and avoiding duplication

29. The Location Strategy seeks to ensure that the information about the UK's land, sea and air is collected once and then used many times in the public and private sector.

30. Each public sector organisation should record and maintain up-to-date details of its location-related datasets. This should be undertaken for all datasets with location attributes, including but not limited to soils, environmental, agricultural, hydrographic, mapping and socio-economic information.

31. Each public sector organisation should make publicly available the details of its location-related datasets – even if the dataset itself is not publicly accessible or is not free of charge. The Location Council should agree and publish criteria for exceptions, and individual exception proposals should require explicit approval by the Location Council.

32. The Location Council, in consultation with the Office of Public Sector Information[6], should agree and maintain the minimum requirements and common standards for such details and public access, based where appropriate on recognised open standards. The details recorded should include information about how and when the dataset has been collected, its accuracy tolerances, its format and storage, and its access rights. The Location Council should monitor implementation closely and report to Ministers on DA(PED).

33. The Location Council should consider how such information can best be universally accessed. It should consider the case, the scope and the delivery options for common portals, hubs or repositories. The scope of the consideration should look at the wider range of requirements, and not just at the implementation of INSPIRE.

34. Populating the information content of the centrally accessible information would be a mandatory requirement for the public sector. It would be inappropriate for the Government to require private sector organisations to apply these requirements. However, it should be open to private sector organisations to apply the standards and lodge details of their datasets in a central repository, if one is developed. In particular the Location Council should engage with collaborative groups to encourage and facilitate the application of these standards; a good example being datasets produced by the Atlantis Initiative members (see paragraph 50).

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[6] The Office of Public Sector Information (OPSI) provides a wide range of services to the public, information industry, government and the wider public sector relating to finding, using, sharing and trading information.

35. The Location Council should determine, in consultation with public sector data holders and with other interested parties, a timescale for implementation of these recommendations, including the preparation and assembly of the metadata, aligned with the requirements of the INSPIRE Metadata Implementing Rules. This timescale should be published by March 2009.

36. Each department and public sector body should ensure that its IS/IT strategy and work programme describes clearly its policies and implementation plans for location data systems.

37. The Location Council should agree with the Office of Government Commerce and the CIO Council changes to Gateway Reviews and to IT portfolio management processes to allow the timely challenge to projects involving location data. The challenge would consider if there is duplication in the creation of location information, use of data which does not conform to Location Council standards or the creation of location data for which there are no plans for public accessibility.

Common location reference data

38. The efficient and cost-effective sharing of information with location attributes across the public and private sector requires the use of common sets of underlying location data. In particular, there are a small number of location attributes which are widely used in organisations' datasets, so standardisation on these will give a major improvement in data sharing between organisations. A good example of such work is that being undertaken by the National Underground Asset Group (NUAG) on the adoption of Digital National Framework (DNF) standards.
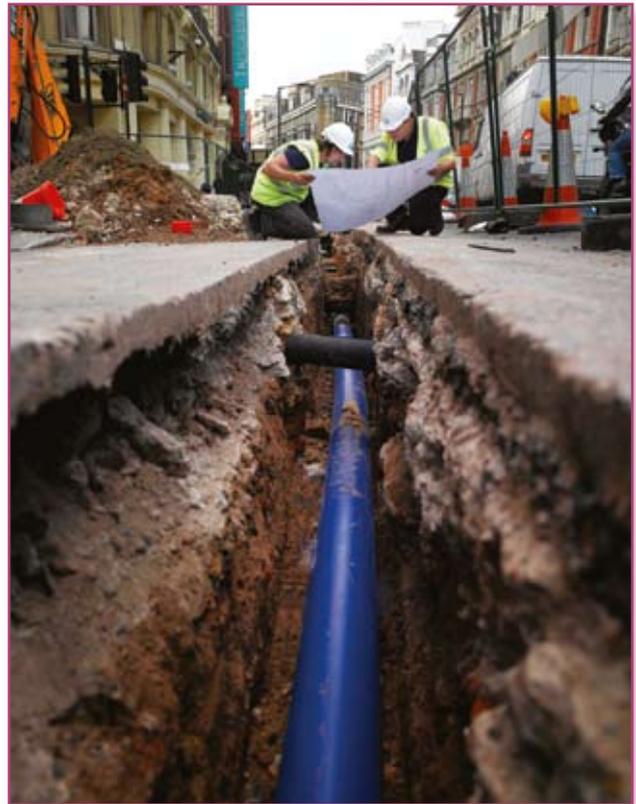
39. A small number of key datasets should be designated Core Reference Geographies, which will form common information frameworks that are defined, endorsed and used by all data holders in both the public and private sector.

40. Each Core Reference Geography should be in the custody of a specified public sector body (or bodies – where the maintenance of the components of that Core Reference Geography is split for operational reasons). Each should be managed to published standards agreed by the Location Council in consultation with the departments and bodies concerned. In most cases it would be appropriate for a Core Reference Geography to be formally owned by a public sector body, although operational collection and maintenance could be provided by public and/or private sectors.

41. The initial Core Reference Geographies should be: Geodetic Framework; Topographic Mapping (at different resolutions and including ground height information);

Geographic Names; Addresses; Streets; Land and Property Ownership; Hydrology/ Hydrography; Statistical Boundaries; Administrative Boundaries. This list of Core Reference Geographies is aligned with those listed in annex I and annex II of the INSPIRE Directive and is set out at the end of appendix 4. In addition, there are other geographies for which Implementing Rules come into force from May 2012; these are listed in annex II and III of the INSPIRE Directive and it is recommended that similar governance arrangements are put in place. New datasets listed in annex I of the INSPIRE Directive must be compliant by May 2011.

42. The Location Council should maintain the list of designated Core Reference Geographies. It should set and publish criteria for additional Core Reference Geographies. It should consider, when and where appropriate, the designation of additional datasets as Core Reference Geographies in accordance with the criteria and after consultation with data providers and users.

Establishing an infrastructure for sharing location-related information

43. Sharing of information requires a common basis of business relationships and business processes, supported by business and technical standards and by consistent IT infrastructures which, together, ensure interoperability across the public sector and beyond.

44. The Location Council should develop and endorse the portfolio of Geographic Information Standards to be used in the public sector. This would extend and develop

for geographic information the general principles of the current eGovernment Interoperability Framework (e-GIF). The framework of Geographic Information Standards would be based on appropriate Open standards. The standards should not only cover technical formats but also business meaning and processes.

45. Each dataset owner should adopt the agreed Geographic Information Standards into their datasets. This will largely be achieved through the INSPIRE Implementing Rules[7] and consideration should be given by the Location Council to the adoption of the Digital National Framework protocols[8]. The overall implementation timescale will be set in the INSPIRE Directive. However, any necessary amendments to Core Reference Geographies should be made as soon as feasible so that they give a stable, standards-based service to their users. In addition, the Location Council should identify any other datasets where early convergence on agreed standards would give significant business value to the users of the dataset or would allow the data to be shared and exploited more widely. Each dataset owner should agree their plans with the Location Council and publish them as part of the information about their datasets.

46. Each dataset owner (both Core Reference Geographies and other location-related datasets) should simplify their licensing arrangements so as to facilitate the sharing of data to realise greater overall value. This is in line with the Government's response to the Power of Information Review recommendations[9] and with the sharing arrangements required for INSPIRE.

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[7] All data custodians of INSPIRE themes will have to adopt INSPIRE Implementing Rules from May 2009 onwards. This includes the adoption of a European profile of ISO de jure standards. The Implementing Rules will be legally binding. Consequently, there will be less scope for Member States to develop new de jure standards outside the INSPIRE framework in future.

[8] DNF methods, developed in Great Britain over the last 2–3 years, are aligned with and now support the INSPIRE Implementing Rules. They are designed to improve and underpin data integrity and interoperability across any geographic dataset. Take-up to date has been based on benefits realisation on a voluntary basis.

[9] Cm7157, Government Response to The Power of Information: An independent review by Ed Mayo and Tom Steinberg 2007, 25 June 2007. http://www.cabinetoffice.gov.uk/upload/assets/www.cabinetoffice.gov.uk/publications/reports/power_information/power_information_response.pdf

47. The Office of Public Sector Information should set guidelines and minimum standards for simplification. The simplification should include:

   (1) convergence of Terms and Conditions which are common issues and are largely dataset neutral

   (2) a common approach to the 'derived data issue' of creating a dataset from the reference data, which could potentially be a substitute for it in a commercial market

   (3) the introduction of developmental and non-commercial licences to encourage innovation (as accepted in Cm7157 in response to Recommendations 4 and 5 of The Power of Information: an independent review).

48. The simplification should take account of the trading nature of the owners of the Core Reference Geographies and should not duplicate the Government's separate review of the pricing of public sector information by trading funds. The simplification should also ensure that Crown Copyright is protected appropriately.

49. The Government's CIO Council should drive forward the implementation of ICT infrastructures which allow stakeholders to share geographic information services within and across organisations. This should build on existing examples of good practice, including Defra's Spatial Information Programme (SPIRE) and Forth Valley GIS's tri-council solution. The CIO Council should ensure the greater coordination of ICT investments so as to create shared web-based information services and to leverage significant efficiencies across the public sector.

50. Public sector bodies should form and promote local, regional or functional partnerships to exploit location-related information available on the shared technical infrastructure. This is in line with wider moves to join up the delivery of public services set out in the Transformational Government agenda[10] and Sir David Varney's report[11]; and the ability to link and share information on a location basis will itself enable more integrated delivery of services. As an early example of this in practice, the Atlantis Initiative is a joint collaboration by six public sector bodies working towards providing better information about flooding. Partnerships will also give economies of scale and will also support the implementation of INSPIRE. The Location Council should produce guidance and model terms of reference for such partnerships; it should actively facilitate the formation of partnerships; and it should promote the sharing of knowledge about achieving success through such partnerships.

51. Government departments and other public bodies should establish a number of pilots and joint ventures to encourage the adoption of the new standards and approaches by creating innovative public services combining different government data (for example, Met Office, Highways Agency and Ordnance Survey data combined into a weather/road condition forecast). Some of these pilots could use the 'data mashing laboratory' being undertaken by the Department for Transport with the support of the Chief Scientific Adviser's Committee. In addition, as the newly formed Knowledge Council develops its work plan, consideration should be made as to how the work of the Location Council will facilitate the long-term outcomes needed by the Knowledge Council.

[10] Cm6683, Transformational Government: enabled by technology. Cabinet Office, November 2005.
   http://www.cio.gov.uk/documents/pdf/transgov/transgov-strategy.pdf
[11] Service Transformation: a better service for citizens and businesses, a better deal for the taxpayer. Sir David Varney, December 2006.
   http://www.hm-treasury.gov.uk/media/4/F/pbr06_varney_review.pdf

52. An effective and efficient location information infrastructure will require investment and change programmes, which will require a longer-term strategic planning horizon than that normally possible in a single Spending Review period. The Location Council should develop, in conjunction with HM Treasury and the CIO Council, a strategic planning and business framework which establishes an adequate period of sufficient certainty and predictability (including funding and pricing) for dataset owners and users to make the necessary sustainable investments.

Skills and Knowledge

53. The delivery of the outcomes of the Strategy requires a step change in our capability to understand and use location information, and better sharing of knowledge and best practice. Importantly, skills and knowledge about location issues need to move from just a limited specialist community into the mainstream of policy development, service design and systems delivery.

54. The Location Council should lead a capacity building programme to embed geographic information awareness and analytical skills as a business tool enabler across public services and professions. This should be informed by an initial audit, not only of current skills but also of future requirements. The most innovative use of geographic information in the public sector is currently concentrated in the planning and delivery of services directly

involving our physical environment, such as planning, transportation, health and environmental management. Wider diffusion and exploitation of geographic information is sporadic across other parts of the public sector. A contributory factor is the lack of awareness and necessary skills, particularly among general managers, service designers and supporting professionals such as the IT profession. So the capacity building programme should leverage wherever possible existing capability building initiatives such as Professional Skills in Government and the IT Professionalism programme.

55. In particular the Government IT Profession, as a member of both the Skills Framework for the Information Age (SFIA) User Council and SFIA User Forum, should work with the SFIA community to build on the existing reference to geographic information in the framework to broaden the scope of geographic information skills, possibly as part of the Information Management skill set.

56. The Location Council should promote the sharing of knowledge about location-based information and methods and their applications within and outside the public sector. It should communicate case studies and examples of good practice, including examples within one organisation that could be adopted across a wider group of organisations. In doing so it should work closely with sector-specific innovation and improvement groups, including the IDeA in local government and the National Policing Improvement Agency. It should establish networks and communities of interest to ensure continued participation, engagement and sharing of knowledge.

57. The Location Council and the CIO Council should agree a programme of work to ensure mutually that location information issues are better understood by the wider IT community and that IT issues are better understood by the location community.

Governance and Leadership

58. Delivering – and subsequently maintaining – the benefits achievable by the new approach to location information described in this Strategy will require clear top management leadership and strong, authoritative and cross-cutting governance. The existing Geographic Information Panel has brought together senior leaders from public and private sectors; we need to build on that.

59. The Government should therefore create a new **Location Council** to deliver this Location Strategy, the implementation of **INSPIRE** and associated initiatives. In a similar way to the CIO Council, it should bring together senior professionals in government to ensure common, joined-up outcomes for effective and efficient public services through co-ordinated action and convergence on best practice. It should:

(1) be an inclusive Council with an overview of all public sector location initiatives at local, devolved and central government levels

(2) develop the Implementation Plan for the UK Location Strategy and manage, co-ordinate and implement the UK Location Strategy alongside the INSPIRE Directive

(3) act as the Steering Group coordinating the UK's delivery of the implementation of the INSPIRE Directive

(4) take the lead on continuing strategic issues about geographic information and its use, including:

  • monitoring technical advances, interoperability and information exchange within which geographic information is collected and managed
  • promoting best practice and supporting innovation in the collection and use of geographic information
  • facilitating a coordinated position on potential legislation, both national and international, that might impact on the geographic information market
  • tackling data quality and integrity issues, and in particular taking a broad and strategic view about investment requirements
  • articulating the economic, national productivity and competitiveness benefits of an effective location-information infrastructure for the UK, and
  • identifying other medium- and long-term location information issues;

(5) advise the responsible Minister accordingly (and through that Minister, as appropriate, the devolved administrations) and, under the authority of the Minister, set standards, policies and implementation requirements for those involved in geographic information and its use

(6) report twice a year to the DA(PED) Ministerial Committee on progress on the implementation of this Strategy and on cross-government issues that require Ministerial decisions, and

(7) publish an Annual Report of its activities, of progress on implementation of this Strategy and of proposals for further strategic action to increase the value gained from location information.

60. Cross-cutting strategies are now normally driven by a 'lead department' agreed by the Ministerial Committee responsible and appointed by the Head of the Civil Service's Civil Service Steering Board (CSSB), to fulfil the cross-government role with its full authority. Defra will be the lead department for the Location Strategy and so ensure alignment with implementation of the INSPIRE Directive.

61. The lead department normally chairs the strategic group to take key decisions and steer the cross-government programme of work. However, in some instances the lead department has preferred the first chair to be a senior appointee from the Cabinet Office, acting in a non-executive capacity, in order to help the governance body itself develop and ensure the development of visible links with other parts of public service reform. The Cabinet Office should respond positively if Defra wished this for the Location Council.

62. The Location Council should have a membership representative of all key public sector stakeholders who will act collectively to enable the delivery of common benefits. This should include:

(1) representation from the national statistical bodies to ensure coordination with their information initiatives

(2) representation from the devolved governments and from local government

(3) representation from those departments that are major users of location-related information or which act as custodians of Core Reference Geographies

(4) two members of the CIO Council, nominated by that Council, to ensure increasingly close links with the mainstream of IT, and

(5) at least two non-executive members to give independent assurance.

63. The Location Council should be supported and advised by two subgroups:

(1) The UK Location Data and Interoperability Board will oversee UK data and interoperability standards and support their implementation in conjunction with the INSPIRE Implementing Rules. It will have an independent Chair and will incorporate the current INSPIRE Data Working Group and similar other initiatives (eg the national data transport framework) and the current Digital National Framework (DNF) steering group. It will have representatives from all appropriate sectors.

(2) A Location User Group will ensure that the implementation of the UK Location Strategy will be driven by user needs and priorities. It will be chaired by a senior representative of an organisation which is a user but not a supplier of location information. It will have representatives from public, private, academic and third sectors, professional bodies and the Association for Geographic Information.

64. The proposed structure led by a single Minister is set out in appendix 5. The Location Council and its subgroups will subsume the role of the Geographic Information Panel and it will be established by December 2008.

Costs and Benefits

65. The current costs of managing information about 'place' in the Core Reference Geography stakeholders alone is estimated to be approximately £400 million per annum; this figure was obtained from the Core Reference Geography stakeholders by consultants for the Geographic Information Panel during work to develop this Location Strategy.

Strategic Benefits

66. This Strategy will benefit government, the wider public sector, the private sector and the citizen when accessing, sharing or reusing 'place-based' information. Achievement of targets for government departments and other public bodies will be facilitated by greater integration of information assets within a simple, well maintained and readily available referencing framework, leading to better informed policy development and service delivery. The summary of the operational changes that the implementation of the UK Location Strategy will support are tabled in appendix 3.

67. The Strategy is expected to realise both direct financial savings in the avoidance of duplicated systems and data collection, and indirect financial and intangible savings from better policy decisions and delivery of services enabled by the better use and sharing of location-related information as the Strategy becomes adopted.

68. In particular, the Strategy will deliver benefits through:

   • increased efficiency of the collection, maintenance, sharing and sustainable reuse of data collected by government and the wider public sector (and the adoption of similar principles would enable similar benefits in the private sector)

   • better sharing of data through the implementation of effective interoperable data standards which will be used by government and may be used by the private sector

   • the provision of Core Reference Geographies for the UK, which provide a framework to connect all other place-based data and so create opportunities for greater productivity and new products and services in public, private and third sectors

   • ensuring that the United Kingdom can implement the INSPIRE Directive appropriately and within timescale

   • more effective measures on sustainability and to manage the effects of climate change

   • greater productivity and lower transaction costs in the public and private sector, and

   • improved global competitiveness of the UK.
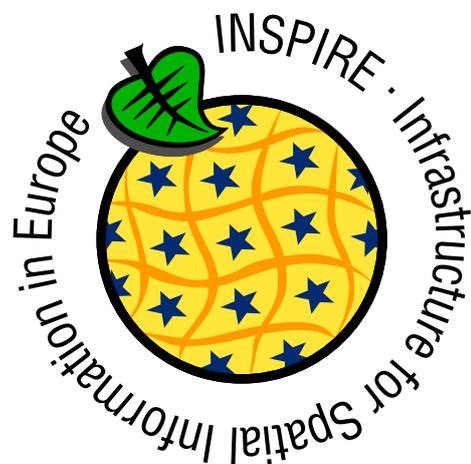
69. The Location Strategy will also underpin the effective delivery of key government initiatives that will benefit from a rigorous and appropriate 'place-based' information management policy and include future censuses; regeneration projects, including the 2012 Olympics; emergency and security issues; local government developments; climate change and long-term transport planning.

Costs

70. The INSPIRE Directive obliges many of the existing data holders to codify and modify their data in order to comply with the Directive. The costs of meeting these requirements will need to be found from within the individual organisations' overall settlements in the Comprehensive Spending Review and are not the responsibility of Defra as lead Department. Identifying more precisely the implementation costs associated with the INSPIRE Directive, together with the associated funding, will be an early task for the proposed Location Council to commission. This will help ensure that a properly funded programme is put in place, covering both own costs and any appropriate contribution towards shared, joint investments. Full implementation of the Strategy set out above is likely to incur some additional costs over the bare minimum needed to comply with INSPIRE. However, in many cases we anticipate that the additional cost is likely to be relatively small and may be within the initial estimating margin for INSPIRE costs because the principal cost drivers (such as system development and implementation costs) are the same. In addition:

(1) meeting the strategic goals for data modification, future collection, usage and maintenance of place-based data and the coherent linking of all the datasets will give significant additional business benefits beyond INSPIRE compliance, and so give an attractive rate of return on any marginal additional investment

(2) implementing the Strategy at the same time that systems have to be modified for INSPIRE will be much cheaper – both in money and in opportunity costs such as scarce skills – than making two separate sets of changes at two separate times, and

(3) the strategic approach described, and the effective governance to deliver it, should identify opportunities for common working, standardisation and reuse of assets within existing INSPIRE implementation plans, which will allow some of the existing planned resources to be freed to deliver additional strategic benefits.

71. However, implementation of the Strategy requires some additional items of start-up and infrastructure work over the first 30 months, for which no provision exists in departmental budgets:

    (1) Identify and catalogue existing repositories of public sector-owned location data assets, making appropriate information available through a federated model.
    (2) Develop a framework, a prototyping infrastructure, mechanisms and best-practice principles for the management and maintenance of a new centrally accessible resource, detailing these assets, including adoption (and if necessary definition) of existing data and interoperability standards.

    (3) Align activities to delivery of Core Reference Geographies within government to meet INSPIRE Directive obligations, including guidance on modifying data where necessary.

72. A central budget contributed by stakeholder departments within central government would be required to accomplish these tasks. This would allow for the set-up of a secretariat, suitable levels of secondment to allow for the technical work identified above and to develop a demonstrator to facilitate the implementation of INSPIRE and to define methodologies to support adopting departments.

Appendices

Geographic Information Panel

The Geographic Information Panel, formed in 2005, gives high-level advice to Communities and Local Government Ministers on geographic information issues of national importance for the United Kingdom, in particular:

- to identify the key medium to long-term geographic information issues and advise government through regular short reports to Ministers
- to encourage more effective, extensive and systematic use of geographic information, led by the example of government departments and other public bodies where appropriate;
- to facilitate a coordinated position on potential legislation, both national and international, that might impact on the geographic information market; and
- to promote a coherent approach to the management of geographic information in the United Kingdom.

The members of the Geographic Information Panel represent key interest groups in government, the private sector and the wider geographic information industry across the United Kingdom. The membership as at summer 2007 was:

- Association of British Insurers, Nick Starling
- Association for Geographic Information, Chris Holcroft
- Delivery & Transformation Unit, Cabinet Office, Andrew Stott
- Demographic User Group, Michael Fishwick
- Department for Communities & Local Government, Michael Kell*
- Department for Environment Food & Rural Affairs, Andrew Burchell
- Ministry of Defence, Brigadier Nick Rigby*
- Office for National Statistics, Karen Dunnell
- Ordnance Survey, Vanessa Lawrence (Chair)*
- Ordnance Survey of Northern Ireland, Iain Greenway
- Registers of Scotland, James Meldrum*

- Royal Institution of Chartered Surveyors, Rob Mahoney
- Society of Local Authority Chief Executives (SOLACE), Cheryl Miller*

* Member of the Strategy Development Group, a subset of the Geographic Information Panel formed for the day-to-day work on the Strategy, while it was being created.

The situation at the commencement of the work on the Location Strategy for the United Kingdom

There is no overarching strategy for managing geographic information across the United Kingdom. In the absence of such a strategy it is helpful that a significant number of separate but often disconnected geographic information strategies have been developed at different levels of government in the UK, including:

- strategies for Northern Ireland, Scotland and Wales;
- central government departments' and Executive Agencies' strategies, eg Defra, Ordnance Survey, Ordnance Survey Northern Ireland, UK Hydrographic Office, Met Office, Ministry of Defence, Environment Agency
- local government at both the local level and also in related central organisations.

Although several of the recent initiatives have brought benefits to their particular organisation or jurisdiction, such efforts have been piecemeal in relation to geographic information itself, patchy in coverage and, inevitably, have been unable fully to support transformational government; many have lacked a senior champion to make change actually happen.

By 2006 it was known that it was likely that a form of the INSPIRE initiative would be ratified by the European Union. This would require the UK to create an overarching strategic framework to support the EU INSPIRE Directive implementation across all data gatherers across

the public sector in the United Kingdom, who relate their information to 'place' or 'location'. It was agreed that the proposed Location Strategy for the United Kingdom needed to meet the requirements of the EU INSPIRE Directive and also maximise exploitation and benefit from geographic information to provide a framework to guide regional and local geographic initiatives.

The consultation supporting the formulation of the Location Strategy for the United Kingdom

The formulation of the Strategy involved over 70 senior, key stakeholders and technical experts drawn from across the public, private and academic sectors. Appendix 2 lists the stakeholders consulted. Some stakeholders and organisations also provided written submissions. The report broadly reflects the views gathered from stakeholders and the overwhelming outcome of this consultation was positive agreement that a Location Strategy for the United Kingdom was required in order to realise and maximise the benefits of location based information.

Appendix 2: The development of the Location Strategy and the list of stakeholders consulted

The Location Strategy has been developed in a four-stage process. It commenced in autumn 2005 when a scoping study was completed. As a result of this work, a tender process took place and the results evaluated by a small team chosen from the Geographic Information (GI) Panel. Know Edge Consortium was awarded the contract in June 2006 and over the next months evidence was gathered in investigative work packages, written submissions were received and a series of strategic and technical workshops were held with all interested parties in geographic information and with chosen strategic stakeholders. The GI Panel formed a Strategy Development Group of the GI Panel who met with Know Edge Consortium regularly and received their working documents as they were completed. Details of the stakeholders consulted are listed below.

Much of the fieldwork was completed by late December 2006; time has been spent in 2007 and 2008 strategically positioning the Strategy within both the INSPIRE work programme of government and also within the departmental IT strategies and also other regional location based Strategies. Presentation of the Location Strategy has been made to many individuals and committees across government including the Chief Technology Officer (CTO) Council, the Chief Information Officer (CIO) Council and the Delivery Council.

The following stakeholders attended strategic workshops to support the formulation of the Location Strategy for the United Kingdom; **their job title and organisation are given as at time of participation**:

Public Sector

Name	Job title	Organisation
Mr Neil Ackroyd	Director of Data Collection and Management	Ordnance Survey
Mr Tim Allen	Programme Director and Intelligence	Local Government Association
Mr Robin Bigger		Northern Ireland Fire and Rescue Service
Mr Stan Brown	Business Development Director	Ordnance Survey of Northern Ireland
Mr Andrew Burchell	Chief Operating Officer	Department for Environment, Food & Rural Affairs
Ms Kate Chamberlain	Chief Statistician	Welsh Assembly Government
Mr Andrew Trigg	Director of Geographic Information	Land Registry
Mr Robert Devereux	Director General	Road Transport, Aviation and Shipping Group, Department for Transport
Mr Mark Hutchinson	Acting Chief Executive	Met Office
Professor Denise Lievesley	Chief Executive	NHS Health and Social Care Information Centre
Mr Duncan Macniven	Registrar General	General Register Office for Scotland
Mr Graham Jenkinson		Office for National Statistics
Mr Richard McCarthy	Director General, Sustainable Communities Group	Department for Communities & Local Government
Ms Diana Murray	Secretary	Royal Commission on the Ancient and Historical Monuments of Scotland

Public Sector (continued)

Name	Job title	Organisation
Brigadier Nick Rigby	Director, Intelligence Collection Strategy and Plans	ICSP, Ministry of Defence
Mr Alan Radford		Met Office
Mr Mike Robinson	Chief Executive	UK Hydrographic Office
Mr David Palmer		Environment Agency
Mr John Pepper		UK Hydrographic Office
Mr Andrew Stott	Deputy CIO	Delivery & Transformational Unit, Cabinet Office
Commander Janet Williams		Metropolitan Police

Private Sector & Academia

Name	Job title	Organisation
Ms Angela Baker		Association for Geographic Information
Dr Robert Barr	Managing Director	Manchester Geomatics Ltd
Professor Mike Batty	Director, Centre for Advanced Spatial Analysis	University College London
Mr James Cadoux-Hudson	Director	Tangram Associates
Mr Jac Cartwright	Director	Spatial Insights Ltd
Mr Andy Coote	Consultancy Services Director	ESRI (UK) Ltd
Mr Ian Drury		British Telecom plc
Mr Mike Fishwick	Head of Commercial Data	Yell plc
Mr Martin Giel		South East Water
Mr Andrew Harrison	Director	Land Inform Ltd
Professor Mike Jackson	Director, Centre for Geospatial Science	University of Nottingham
Dr Alun Jones		GeoInformation Group
Mr James Kavanagh	Head Geomatics	Royal Institution of Chartered Surveyors
Dr Barry Leventhal	Chair	Market Research Society, Census & Demographic Group
Dr Helen Mounsey	Associate Partner	IBM Global Business Services
Mr Allan Rasmussen	National Board Director	Tele Atlas
Mr Peter Stibrany	UK Manager	MacDonald Dettwiler and Associates Ltd
Mr David Theriault	Director	Ten Sails Ltd
Mr Edward Ungar	Strategic Partner Development Manager	Google UK Ltd

The following stakeholders attended technical workshops to support the formulation of the Location Strategy for the United Kingdom:

Public Sector

Name	Job title	Organisation
Mr Steve Brandwood		Local Government Information House / IDeA
Dr Cameron Easton		Scottish Executive
Mr Keith Murray		Ordnance Survey
Mr Ed Parsons	Chief Technology Officer	Ordnance Survey
Mr James Proctor		Environment Agency
Mr Graham Vowles		Ordnance Survey

Private Sector

Name	Job title	Organisation
Mr Tony Black		Intelligent Addressing Ltd
Mr Steve Hawthorn		Infotech Solutions (UK)Ltd
Professor Mike Jackson	Director, Centre for Geospatial Science	University of Nottingham
Ms Audrey Mandela		MultiMap (UK) Ltd
Dr David Medyckyj-Scott		EDINA
Ms Sathya Prasad		Infotech Solutions (UK)Ltd
Mr Robert Southern		Informed Solutions Ltd
Mr Anthony Warner		MultiMap (UK) Ltd

Appendix 3: Summary of the operational changes that the implementation of the UK Location Strategy will facilitate

Topic	From	To
Metadata access	Inconsistent approach to the recording of important details about location data being captured (metadata).	Creation and enforcement of a consistent recording method for metadata and the storage of these artefacts in a readily accessible repository.
Core reference data	A lack of consistency and clarity over the geographic data that defines and underpins UK location-based information.	Development of an agreed set of core reference geographies forming a common framework within which INSPIRE deliverables may be met.
Data exchange	Lack of interoperability standards from location based information and datasets within the e-GIF and/or adoption of those that exist.	Open standards for geographic information (ISO & OGC) be adopted consistently into UK location datasets, creating a consistent framework within the INSPIRE Implementing Rules.
Education	A lack of awareness of location information and insufficiency in the skills to manage and exploit location based data within the public sector.	A consistent and widely used exploitation model for geographic information across sponsor, user and provider communities.
Governance	Lack of a single point of independent ownership.	A revised and modified governance model overseeing the implementation of the Strategy and ongoing monitoring.
Licensing	Inconsistencies in the licensing models, which allows for unnecessary complexity and are difficult for the user to administer.	A significant increase in the use of geographic information through review and simplification of licensing of core location based datasets.

Appendix 4. EU INSPIRE Directive themes and core reference geographies

INSPIRE (INfrastructure for SPatial InfoRmation in Europe) is an EU Directive that lays down a general framework for a Spatial Data Infrastructure (SDI) for the purposes of community environmental policies and policies or activities which may have an impact on the environment. It aims to improve the interoperability of, and access to, spatial information across the European Union at a local, regional, national and international level, facilitate improvements in the sharing of spatial information between public authorities and provide improved public access to spatial information. While environment is the primary policy area to be covered, INSPIRE has potential to extend to other policy areas such as agriculture and transport.

A premise of INSPIRE is that the spatial data infrastructure for Europe shall build upon the infrastructures established and operated by the Member States, which themselves should be designed to ensure that:

1. Spatial data are stored, made available and maintained at the most appropriate level.
2. That it is possible to combine spatial data from different sources across the community in a consistent way and share them between several users and applications.
3. That it is possible for spatial data collected at one level of public authority to be shared between other public authorities.
4. That spatial data are made available under conditions which do not unduly restrict their extensive use.
5. That it is easy to discover available spatial data, to evaluate their suitability for the purpose and to know the conditions applicable to their use.

Spatial data held by a public authority that is related to one or more of the themes listed in the three priority annexes is covered by the Directive, and its daughter legislation, in the form of Implementing Rules. These Implementing Rules, which will be legally binding as EU Decisions, will cover key areas of:

- Metadata
- Interoperability of spatial datasets
- Network services
- Data and Service Sharing
- Monitoring, reporting and coordination

Although an Implementing Rule covers conditions of access to spatial data by community institutions and bodies, data sharing within a Member State is covered by the Directive itself and is not subject to an Implementing Rule.

The Directive, which provides the framework and policy, came into force on 15 May 2007 and has to be transposed into national (UK) law within two years – May 2009. The Implementing Rules, which will provide much of the technical detail, are currently being developed for a phased adoption between 2008 and 2012, with phased compliance between 2010 and 2019. UK has representation and participation on a number of the Commission teams developing these Rules. The Rules themselves are mostly subject to European Parliament scrutiny prior to adoption by a Member State based regulatory Committee (chaired by the Commission).

INSPIRE Themes – covered by the Directive and Implementing Rules

Annex I
1. Coordinate reference systems
2. Geographical grid systems
3. Geographical names
4. Administrative units
5. Addresses
6. Cadastral parcels
7. Transport networks
8. Hydrography
9. Protected sites

Annex II
1. Elevation
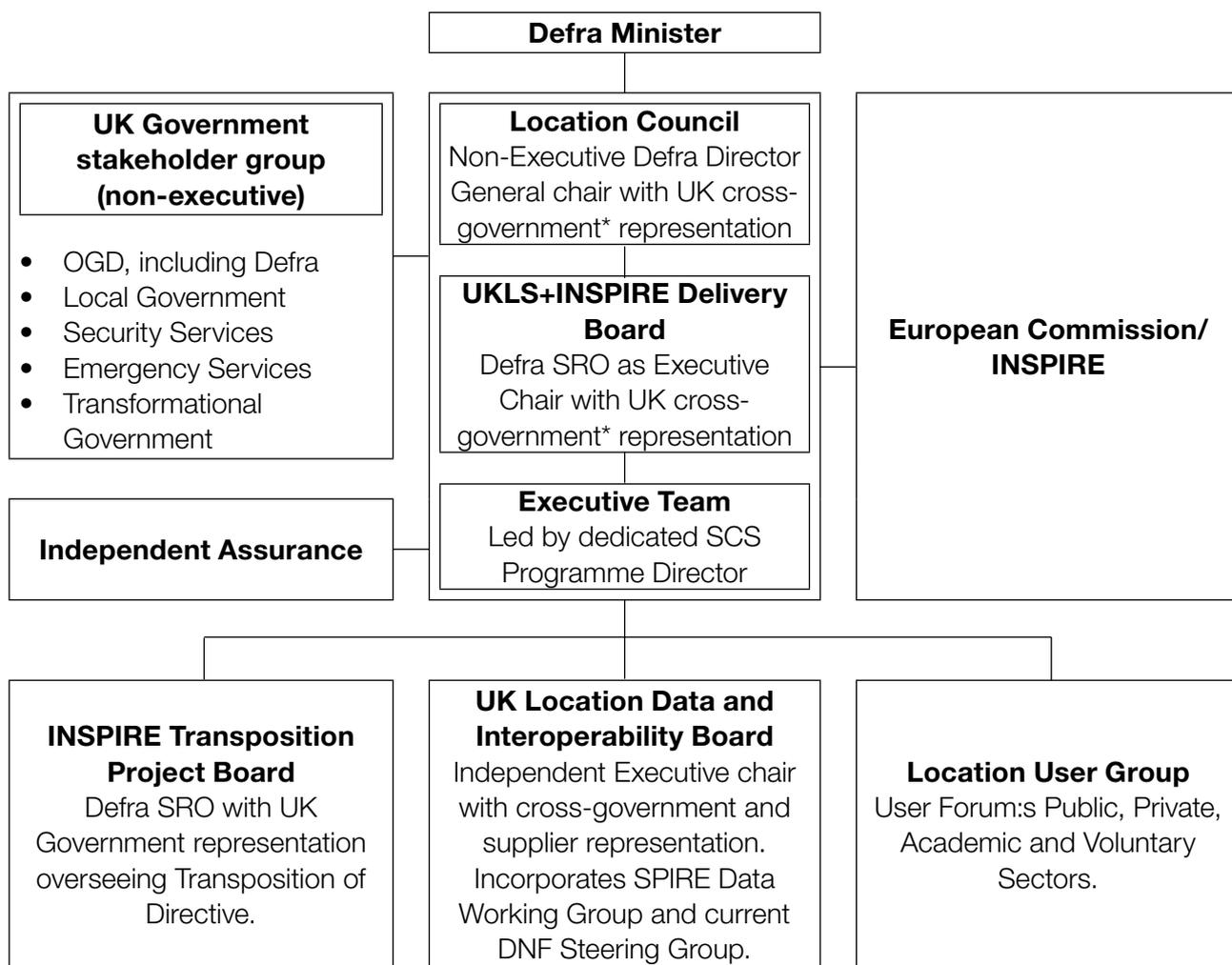2. Land cover
3. Orthoimagery
4. Geology

Annex III
 1. Statistical units
 2. Buildings
 3. Soil
 4. Land use
 5. Human health and safety
 6. Utility and governmental services
 7. Environmental monitoring facilities
 8. Production and industrial facilities
 9. Agricultural and aquaculture facilities
10. Population distribution – demography
11. Area management/restriction/regulation
    zones and reporting units
12. Natural risk zones
13. Atmospheric conditions
14. Meteorological geographical features
15. Oceanographic geographical features
16. Sea regions
17. Bio-geographical regions
18. Habitats and biotopes
19. Species distribution
20. Energy resources
21. Mineral resources

The recommended initial set of Core Reference
Geographies to be implemented by the Location
Strategy for the United Kingdom is as follows:
• Geodetic Framework
• Topographic Mapping (at different resolutions
  and including ground height information)
• Geographic Names
• Addresses
• Streets
• Land & Property Ownership
• Hydrology/Hydrography
    • Statistical Boundaries
    • Administrative Boundaries

These will be expanded to eventually encompass
the scope of the EU INSPIRE Directive themes.

Appendix 5: Proposed governance structure for both the UK Location Strategy and INSPIRE implementation

Defra Minister

UK Government stakeholder group (non-executive)

- OGD, including Defra
- Local Government
- Security Services
- Emergency Services
- Transformational Government

Independent Assurance

Location Council
Non-Executive Defra Director General chair with UK cross-government* representation

UKLS+INSPIRE Delivery Board
Defra SRO as Executive Chair with UK cross-government* representation

Executive Team
Led by dedicated SCS Programme Director

European Commission/ INSPIRE

INSPIRE Transposition Project Board
Defra SRO with UK Government representation overseeing Transposition of Directive.

UK Location Data and Interoperability Board
Independent Executive chair with cross-government and supplier representation. Incorporates SPIRE Data Working Group and current DNF Steering Group.

Location User Group
User Forum:s Public, Private, Academic and Voluntary Sectors.

*Central/devolved and local government

Abbreviations used in this diagram:

OGD   Other Government Department
SCS   Senior Civil Service
UKLS   UK Location Strategy

Appendix 6: Glossary of terms

Term	Definition
Atlantis Initiative	The Atlantis Initiative is being undertaken by the British Geological Survey, the Centre for Ecology and Hydrology, the Environment Agency, Ordnance Survey, the Met Office and the United Kingdom Hydrographic Office. Its aim is 'to provide integrated base geographic and environmental datasets to better support water management in flooding and water quality for the 21st century'.
Chief Information Officer (CIO) Council	Forum that brings together CIOs from across all parts of the public sector to address common issues.
Chief Technology Officer (CTO) Council	Cross–government body responsible for supporting 'joining up' at a technological level.
Comitology	System of committees the EU uses to put legally binding detail into framework legislation.
Core Reference Geographies	Commonly used geographic datasets that provide a framework for linking and integrating other geo-referenced information as well as providing key contextual information.
DA(PED)	Ministerial Cabinet Committee on Domestic Affairs (Sub Committee on Public Engagement and the Delivery of Services).
Digital National Framework (DNF)	An industry standard for integrating and sharing business and geographic information from multiple sources.
e-Government Interoperability Framework (e-GIF)	The UK government's technical policies and specifications for achieving interoperability.
Geodetic Framework	Network of points whose precise position on the surface of the earth has been calculated and which provide a framework for further positioning calculations.
Geographic Information (GI)	Taken in its widest sense to mean geo-referenced information about land, sea and air.
INSPIRE	European Directive which lays down general rules aimed at the establishment of the Infrastructure for Spatial Information in the European Community, for the purposes of Community environmental policies and policies or activities which may have an impact on the environment.
Interoperability (Information)	Capability to reference objects from one dataset to objects in another dataset using a common system of georeferencing incorporating common identifiers.
Interoperability (Systems)	Capability to communicate, execute programs or transfer data among various functional units in a manner that requires the user to have little or no knowledge of the unique characteristics of those units.
Information & Communication Technology (ICT)	The study, design, development, implementation, support or management of computer-based information systems.
ISO	International Organization for Standardization.

Term	Definition
Mash-up	A website or application that seamlessly combines content from more than one source into an integrated experience. Content used in mash-ups is typically sourced from a third party via a public interface.
Metadata	Data about data to support the discovery, exploration and exploitation of geographic information and services.
National Underground Assets Group(NUAG)	The National Underground Assets Group (NUAG) is a group of relevant stakeholders, including utilities and local authorities, established to support the Department for Transport in achieving the relevant Traffic Management Act targets, and to act as a point of focus and single voice for everyone involved with underground, and appropriate associated above ground assets.
Open Geospatial Consortium (OGC)	A non-profit, international consensus-based standards body is leading the development of open specifications for web access to geographic information.
Web 2.0	Web 2.0 is a phrase coined by O'Reilly media in 2003. It refers to the perceived second generation of web-based communities and hosted services which facilitate collaboration and sharing between users. Examples being wikis and social networking sites.

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