A strategic approach to location for Great Britain: why place matters

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18 June 2007

Toward more transparent government: Workshop on eGovernment and the web
United States National Academy of Sciences, Washington
Location is the fourth driver to decision-making in both the public and the private sector.
The world is changing.....
New views of the world – merging of ideas
Local Search
Creation and provision of free data…

This map was generated by OpenStreetmap contributors using GPS data, and are licensed as Creative Commons CC-BY-SA 2.0.
Geography has gone mobile
Geography has gone mobile

Want to see if your kid is still at soccer practice by locating his or her phone using GPS technology?

© Disney Mobile
Ordnance Survey Great Britain

- Ordnance Survey is 216 years old
- Civilian organisation since 1983; 1448 staff
- Independent Government Department and Executive Agency reporting directly to a Government Minister
- Trading Fund since April 1999
- Annual Report for 2005/06: operating turnover of £118.4m; profit before dividend and interest £7.9M
- 100% owned by Government and we pay a dividend to the Government equivalent to 5.5% ROCE
- Less than 50% of our trading revenue is sourced from the public sector
- At most only 27% of Great Britain is profitable to map; however Ordnance Survey maps the whole of Great Britain
Ordnance Survey today

- Creates and maintains the ‘master map’ of Great Britain from which others derive benefit
- Manages complete national large scale digital data down to building level detail
- Maintains a database of 440 million features with approximately 5,000 changes made daily
- In 2006/07, 99.86% of real world features were represented in the database within six months of completion on the ground
- From the database, Ordnance Survey produces a range of digital data and paper maps for business, leisure, educational and administrative use

Provides the underpinning geographic framework for Great Britain
Ordnance Survey’s business

Customers/Partners

Online  Digital Media  Graphic Media

Data Supply

Data Integration/Processing

Data Maintenance

Data Collection
“Looking at an Ordnance Survey map is one of the most satisfying things in life. Every little woodland has got a name. Everything on the landscape is named.”

Bill Bryson, the new President of the Campaign for the Protection of Rural England, speaking on BBC Radio 5 Live, Wednesday 1st May, 2007.
The growing value of geographic information

• Geography (in disguise) is becoming a working tool in wider markets
• Public sector information is a huge untapped asset (OFT; 2006)
• Geographic information from Ordnance Survey alone is said to underpin in excess of $200bn of GDP per annum (OXERA 1999; 2004)
• Information-rich sectors of the UK economy are faster growing than the rest of the economy over the past five years (The Economist; 2006)
• US economists have 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 (US Bureau of Labor; 2006)
• Geographic information is an essential ingredient to tackling the nation’s grand challenges
• Many major companies, such as Microsoft, Google and Yahoo!, are realizing the benefit of using geographic information.
First map of Kent in 1801
Changing models of geospatial information

Paper maps
1791-1971

Digital data files
1971-2001

Spatial database
2001-

Web service
near future
OS MasterMap current layers

- Imagery
- Integrated Transport Network Layer
- Address
- Topography
Layers of OS MasterMap

Topography
Addresses
Integrated Transport Network
Imagery
Open Geospatial Consortium

• The Open Geospatial Consortium (1994) is an international industry consortium of 339 companies, government agencies and universities

• OpenGIS® Specifications support interoperable solutions that "geo-enable" the Web, wireless and location-based services, and mainstream IT

• Consensus process to develop interface standards (i.e. GML, WMS, WFS, …)

• Liaisons with other standards, professional and educational organizations
A spatial database… to what benefit?

- Every object represented in has a unique identifier. These IDs can be used to connect other information.

Highways database
road_name: Chester Close
road_type: cul-de-sac
lighting: none
TOID: 1000000729427341

Crime report database
crime_type: vehicle break-in
date: 09/05/2003
TOID: 1000000729427341

Highways and Police can share information
The need for a referencing framework

- There are well-established sources of base information
- There are many users with different applications
- The challenge - make information accessible and connectable
Digital National Framework
DNF for managing buried services

- The cost of not knowing precisely where pipelines and cables are buried is extremely high
- There are 4 million road excavations every year
- The Institution of Civil Engineers has recommended that all buried services should from now on be captured to DNF standards and principles
Georeferencing of Statistics

At point level
Either: Address or map feature etc - are linked to the feature [TOID]

Aggregated data

Geographical area i.e. Region

Geographical area i.e. by District

Geographical area e.g. by Super Output Area

Geographical area e.g. by Output Area

Georeferencing:
At point level

Drill down
Evolving Information Management Frameworks

Tim Berners-Lee, Terra future, 2006
GeoSemantics: interoperability and semantic information

Address: 22 Pine Street, Swindon

Query: Show me the address for a Church at a roundabout in Swindon

In Swindon

Roundabout
A road junction at which traffic streams circularly around a central island

Database

In Swindon

GPS

+ Navigation Application
GI trends: Web services as a window
GI trends: Augmented reality

Managing service infrastructure by adding computer graphics to the engineers view of the real world
GI trends: Participatory model

Massive blaze rages at fuel depot

The man in charge of investigating the massive fires at a Hertfordshire oil depot on Sunday says the flames may have destroyed all clues to the cause.

Deputy Prime Minister John Prescott has visited the scene of the blasts which injured 43 people, two seriously.

The fire chief described the incident at the Buncefield fuel depot near Hemel Hempstead, after 0600 GMT, as possibly the largest in peacetime Europe.

The M1 finally reopened around 2200 GMT after being closed for 12 hours.

Hertfordshire's Chief Fire Officer Roy Wilsher said: "The damage a fire of this intensity will cause may, or may not, leave clues for the fire investigation team."

Junction 8 of the motorway, as well as some slip roads, however, remain closed. The Highways Agency said it would

BBC – Buncefield Oil Depot Coverage
GI trends: Participatory model

**step 1** enter locality within Southampton

**step 2** plot points

**step 3** save
You can now refine your points by dragging them to get the shape just right. When you're happy with the shape you have drawn, hit 'save' below

**step 4** repeat or exit
Social trends: Social networking
E-Government: the landscape has changed

- Information is now generated, mashed up and consumed in the:
  - Public sector
  - Private sector
  - ....and the community....where users create and use content to generated services useful to that community

- There is huge potential for government and society to utilise all three sectors to address grand challenges
  - for eg: Climate change – being addressed by global, regional, national, local, governments, private sector, communities and individuals
  - for eg: Neighbourhoodfixit.com addressing community based issues
E-Government and Social Networking

Neighbourhood Fix-It Beta

Click on the map to report a problem

If you cannot see a map – if you have images turned off, or are using a text only browser, for example – and you wish to report a problem, please skip this step and we will ask you to describe the location of your problem instead.

Recent problems reported on this map

No problems have been reported yet.

Closest problems within 10km

1. pothole (c. 0.7km)
2. Overgrown footpath (c. 0.8km)
3. Abandoned and vandalised supermarket trolley (c. 0.8km)
4. Illegal Parking (c. 1.1km)
5. Bird droppings at Bishops Mill, Winchester (c. 1.4km)
6. broken drain cover on main road (c. 7.8km)
7. Pothole (c. 0.9km)

Recently fixed problems within 10km

1. Hole in road (c. 6.2km)
Consumer Web Channel
You too can participate...

SPOTTING BRITISH WILDLIFE

the BADGER

Spotted at:
27 St Peters Road,
Wellington,
Northumberland
NT45 3DP

Spotted by jane123

Visit our website and discover more about badgers
The Power of Information

An independent review by Ed Mayo and Tom Steinberg

This report reflects the views of the external authors and is not a statement of government policy.

Independent review, under consideration by UK Government

The report calls for openness and ease of access to public sector information to stimulate interaction between the Government and the Citizen

“Recommendation 5. To promote innovation, Ordnance Survey should, by the end of December 2007, launch its OpenSpace project to allow non-commercial experimentation with mapping data.”
OpenSpace: platform for innovation

OpenSpace aims to encourage, innovate and support users with map-based ideas to build non-commercial sites

- The focus is on innovation
- There will be an Open API for ‘Mash Up’ websites
- Ordnance Survey data will be available to OpenSpace users
- Non-commercial use only
- Commercial use of API will be possible
Open Space
A weekend’s work:

Just good enough is good enough.....

but ...

In a world where everybody can create information, who do you trust?
Customer Focused Supply Models

- Custom Generated
- Offline
- Paper

- Pre-generated
- Online
- Media

- On-demand
- DVD
- FTP

- Content
- Format

- Paper
- Offline
- Pre-generated

- Custom Generated
- Online
- On-demand

- Media
- GIF
- SVG
- GML
- NTF
Ordnance Survey – on demand

• 96,000 potential users.
• Application sent between 60,000 and 74,000 requests per month and often more than 5,000 requests per day for map images from the products available.
• Service available for 100% of this time - no single request failed as a result of our servers being unavailable when a user needed a map.
• Average response time for a map image to be returned to a user was less than 0.6 seconds with even the most detailed OS MasterMap images returned in little over a second.
“Data is the new Intel Inside” (Tim O'Reilly)

Products
- OpenStreetMap
- DNF compliant database
- OS MasterMap

Services
- Google Maps
- OS On Demand
- OSNet

Increasing value/trust
Geographic Information Panel: aims

• To give high-level advice to 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;
  • Encourage more effective, extensive and systematic use of geographic information, led by the example of Government Departments and other public bodies where appropriate;
  • Facilitate a co-ordinated position on potential legislation, both national and international, that might impact on the geographic information market;
  • To promote a coherent approach to the management of geographic information in the United Kingdom.
Location strategy for the United Kingdom: the results

• A document is being finalised entitled ‘A Location Strategy for the United Kingdom – Why Place matters’. It will be the submission for the Transformational Government Agenda

• Will assist the analysis to support the ‘place-based’ agenda

• Will meet the needs of the data users as there will be increased knowledge on the collection standards, the maintenance standards and the availability of the data

• Will drive interoperability standards throughout the wider public sector; every indication is that these in turn will ensure these standards are adopted by the private sector

• Will drive cost out of the collection and maintenance of data collection by reducing duplication across and within departments

• Will ensure that the United Kingdom can implement the INSPIRE Directive appropriately and within timescale
A strategic approach to location for Great Britain: Ordnance Survey’s role

- Department of trusted relied upon information on location and place
- Location Information is similar to a nation’s insurance policy as it underpins the planning process, the land registration process, the emergency services, the security services etc
- Delivering solutions through over 500 partners
- Actively encourage community participation and, social networks to build communities, social value and deliver community to community, citizen to citizen information and services
- An essential ingredient to tackling the (Government’s) Grand Challenges e.g. criminal justice, climate change
- Underpinning the semantic web and data integration
A strategic approach to location for Great Britain: why place matters
Thank you

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