

Case Study:

Ordnance Survey Open Data

Type: programme, organisation

Organisation(s): Ordnance Survey

Tags: open data, mapping



[Ordnance Survey](#) (OS) is Great Britain's mapping service, responsible for the collection, maintenance and distribution of up-to date geospatial information about Great Britain (Northern Ireland is covered by a separate organisation).

OS is a government delivery body which has been tasked with operating in a commercial manner as a Government Company to fulfil the role of the National Mapping Service, delivering against its Public Task as required under the Public Sector Geospatial Agreement.

The organisation has, for a number of years, released much of its data as [open data](#). This began with simple boundary line information and has steadily grown to the release of OS Open Mastermap up to a certain level of usage for free in July 2020. The provision of freely available open data can be seen as a direct challenge to its data licensing model. This provides an interesting case study on how the provision of some open data has stimulated innovation within the organisation that publishes the data.

Background

Ordnance Survey (OS) is Great Britain's national mapping service, and has been for over 229 years. It originated in 1791 to provide strategic mapping for the movement and positions of the British armed forces, but its remit and focus has expanded and shifted over that time. Today, the geospatial data provided by OS is core reference data for Great Britain, and it plays a key part in the data infrastructure of the UK. As a business, the organisation:

- collects and curates accurate and detailed geospatial data;
- provides trusted geospatial data and services to HM Government and authorities;
- provides services to government internationally and sells data directly to sectors including energy and infrastructure platform providers;

- provides commercial data licensed to a ‘partner’ network which brings in commercial revenue; and
- offers mapping products and experiences to a consumer market to help people get outside.

The organisation has undergone significant change in the last 20 years as digital mapping has become more prominent. In 2001, [OS MasterMap](#) was launched as the integrated detailed continuous digital topographic map of GB, containing 500 million geospatial features, and updating over 20,000 changes each day.

[GeoPlace](#) is a 50:50 joint venture with the Local Government Association, which develops addressing products licensed to the company, like the National Address Gazetteer.

The organisation has also changed in terms of its business model, becoming a Government Company in 2015. Prior to this, the organisation had already begun to open up some of its datasets, with 12 data products – including boundary data for administrative geographies – released by 2010. Initial moves towards providing open data began in 2008, resulting in the development of OS Open Data in 2010. In the first eight years of OS Open Data, there were 1.9 million data downloads of open data products.

In more recent years, the organisation has started to open up more data products. These include some simplified products, and less detailed data products than OS Mastermap – such as [OS Open Zoomstack](#), [OS Open Rivers](#), [OS Open Names](#) and [OS Open Greenspace](#). At the same time, it has changed the way customers receive the data from a primarily hard copy format (e.g. disks) to data downloads and APIs. In July 2020, this culminated in the release of OS Open Mastermap via the OS Data Hub, including a range of easy to use APIs. This allows the organisation to provide OS Mastermap data for free, up to a monthly value limit of £1,000.

Important considerations

Provision of data

Ordnance Survey helps its customers gain location insight, which positively impacts the economy, sustainability and society as a whole. It does this by collecting and providing detailed location data.

The organisation has responded to the changing demands of customers over time, providing new data formats, to different standards, and changing delivery approaches. This has meant more organisations can take advantage of OS APIs, rather than downloading and storing data locally. It also means that, over time, the organisation has phased out the provision of digital hard copies, and focused instead on data downloads direct from the OS website.

OS have improved the way that geospatial data is accessed, by updating its website and content infrastructure, including systems for customer accounts and download

functionality. Customers are able to make simple choices on the website about which data products they wish to download, and instantaneous transfer is initiated with a click.

Ordnance Survey as a Government Company

OS is a government company – a public corporation, which is defined in government guidance as “a trading body controlled by central government... that has substantial day to day operating independence.” This means that, at a minimum, it is expected to be financially self-sufficient, and that a dividend be returned to the government each financial year.

OS offers a range of licensed data products, from premium (paid for) data and services alongside its free open data. This business model allows for the provision of both free and premium versions of data products, similar to the ‘freemium’ model prevalent across many digital businesses. Essentially, a pricing strategy offers a basic product or service free of charge, but money (a premium) is charged for the expansion of additional functions, features, services or goods.

Public Sector Geospatial Agreement

The [Public Sector Geospatial Agreement](#) (PSGA), launched in April 2020, codifies OS’s Public Task and the services the organisation will provide, as negotiated with the [Geospatial Commission](#) (part of the Cabinet Office). The contract is an investment by the government of £1billion over ten years, and includes recompense for making some data available under Open Government Licensing terms.

The PSGA is a core part of the delivery of the [UK’s Geospatial Strategy](#) (June, 2020). In this strategy, the government talks about ‘open’ as referring to different qualities of data, such as: whether it is findable, accessible, interoperable and reusable (FAIR); free at the point of use; or has clear licensing conditions that do not restrict use. The government’s investment in OS through the PSGA is a commitment to continue to manage its location data, and to make sure that it is high quality and FAIR (Findable, Accessible, Interoperable and Reusable).

The PSGA’s precursor, the Public Sector Mapping Agreement (PSMA), and the One Scotland Mapping Agreement (OSMA) in Scotland, provided premium OS data to the public sector for free. This included access to addressing products (such as AddressBase Premium) and mapping products (such as MasterMap).

The PSGA is the ‘next generation’ of these agreements. The PSGA provides for new, richer data, new ways to access data and new freedoms to share data. As a ten year agreement, the PSGA enables OS to develop, test and deliver innovative new geospatial data capabilities and services, and also stimulate innovation in the wider economy by offering premium data for free up to a threshold and with a lowered royalty rate.

Responding to challenges

Business model

A major challenge for the organisation has been in balancing two potentially competing interests: a push for OS to release more open data, for the benefit of the national economy; and the need to protect income streams that pay for the collection and curation of this data in the first place. The OS business model is diverse, encompassing international and commercial work, delivery of a core public sector offer that aligns to government strategy, and a leisure and consumer 'arm' to encourage access to the outdoors.

As mentioned above, OS's data offer is accessible to customers through a 'freemium'-type model, which provides less detailed or simpler data for free, while charging for access to more premium and detailed products. As more data is released openly, there is a risk that organisations that would traditionally purchase premium products may find open data products (less detail, but for free) sufficient for their needs. However, it may also be the case that customers find more detailed data additive to their own customers and consider a rising data access cost model appropriate.

The mixed pricing and licensing strategy ensures that open and premium data remain viable and valuable. Not all mapping updates can be automated through AI or machine learning techniques, and other surveying and cartography skills and techniques are still required to maintain a high quality, verified, authoritative view of what's happening at on the ground.

A push for OS geospatial data to be fully open by default would be a trade-off against the government's mandate for the organisation to operate commercially. Therefore, the government has invested in the organisation to allow it to open up more data, and add value to the national economy through the PSGA. Alongside this, the organisation has worked hard to ensure that there is a mixed model approach, with both free and premium data products and services. This protects the organisation's commercial income streams from any adverse impact.

A culture of innovation and driving customer value

It is interesting that OS appears to have responded to the challenges of open data by focussing on innovation to improve the National Geospatial Database, and on the creation of additional value from the data. For example, OS has initiated projects to: improve data quality and data discoverability; consider the ways in which geospatial data is accessed; and develop methods to improve OS data interoperability with other datasets.

OS also launched [Geovation](#) in 2010 to support promising GeoTech and PropTech start-ups by offering them focused guidance and support, access to quality data, and technical and financial resources to help them develop and thrive. Last year

Geovation celebrated five years of its London-based [Accelerator Programme](#), run in association with HM Land Registry. It also launched a new Edinburgh based accelerator programme run in association with Registers of Scotland. The accelerator programmes are specially designed to propel pre-seed or seed stage start-ups to the next level and have established an impressive track record of success. To date they have helped turn 117 start-ups into thriving businesses, which has led to the creation of 484 new jobs and £77 million investment into the start-ups. Over the past 12 months Geovation has also carried out its plan to support and nurture more new businesses through strategic partnerships with complimentary Innovation Hubs in Birmingham, Bristol, Cardiff and Manchester.

Investing in customer value driven innovation propositions, such as adding speed data to its highways network information, has helped to increase the usefulness of its data to customers in both public and private sectors of the UK economy.

What can Greater Manchester take from this?

- The benefits of opening data up for that it is findable, accessible, interoperable and reusable do not directly fall to the organisation collecting and curating the information. This has to be accepted as a core, sunk cost from the provision of open data, to be compensated from other business activities. The value and benefits are more widely appreciated within the wider economy, and as such will have impacts on the public sector in non-direct ways.
- Focusing on data quality and innovation can help drive up the potential value of data to the customer – whether open or licensed. Opening data can be seen as a challenge, but it may also lead to an organisation improving its data provision, with lasting innovative benefits to both the data users and the organisation itself.
- Value can be added to data not simply by improving the quality of data, but also by improving the content. Shaping data so that it may be interoperable with other datasets that were previously disparate – such as the example of speed data merged with highways information – can provide a more detailed, useable and useful data analyses from which greater insight may be drawn.
- It is important to consider not only *what* data is provided, but also *how* data is provided. Regularly reviewing which data is accessed and how it is accessed can help improve discoverability, and thereby help improve use, re-use and therefore its value.
- Ordnance Survey's coverage of Great Britain adds value because of the consistency of data throughout the geographical area. This suggests that datasets covering larger areas that are consistent across the area, would have a greater value and impact than those at a smaller scale.
- A rolling and continuous update process to data can provide confidence to data users on the long-term provision of this data, increasing the value of the data further.

Find out more:

[OS blog - Ordnance Survey's open data journey](#)

[OS - business and government](#)

[Cabinet Office policy paper - MasterMap announcement](#)

[Unlocking the power of location: The UK's geospatial strategy](#)

