



What is open data and why does it matter?

In partnership with Open Data Scotland

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Introduction

Open data is data that can be freely used, re-used, and redistributed, and has the potential to drive innovative solutions to some of Scotland’s biggest challenges. An open data culture leads to improved government, economic growth, insightful data analysis, and a more participatory democracy. However, despite the benefits demonstrated by those leading the way in open data, Scotland is moving at a glacial pace and the gap with other countries is widening.

Scotland has made a start, but progress has faltered. In 2015, the Scottish Government launched its Open Data Strategy which set out its vision that, by 2020, Scotland will value data and responsibly make use of it in order to improve public services and deliver wider societal and economic benefits for all.¹ The strategy was accompanied by resources to help other public bodies to develop and implement their own plans for open data.

Since 2015, Scotland’s data has been “open by default” but progress remains slow and over half of councils (18 of 32) still make no open data provision.²

Calculations showed that over 95% of the data that could and should be open was still locked up.³ It is estimated that the economic value of opening this data could be worth over £2bn annually to Scotland’s GDP.⁴ Furthermore, a network effect has the potential to increase and multiply this growth over time due to the greater opportunities created for data re-use.⁵ While the economic value of open data is recognised in the 2021 Digital Strategy for Scotland,⁶ there has been no visible activity in the 12 months since its publication to address this lost potential.

¹ Scottish Government, 2015. Open Data Strategy. [Online](#). Accessed 17 January 2022.

² Open Data Scotland, 2021. Scorecard. [Online](#). Accessed 23 February 2022.

³ Watt, 2019. Scotland’s Open Data, February 2019. An update. [Online](#). Accessed 15 February 2022.

⁴ European Data Portal, 2020. The Economic Impact of Open Data: Opportunities for value creation in Europe. [Online](#). Accessed 28th February 2022.

⁵ European Data Portal, 2020. The Economic Impact of Open Data: Opportunities for value creation in Europe. [Online](#). Accessed 28th February 2022.

⁶ Scottish Government, 2021. A changing nation: how Scotland will thrive in a digital world. [Online](#). Accessed 28th February 2022.

Background

Open data, especially open government data, is a tremendous resource that can create value across a wide range of areas:⁷

- Innovation
- Improved efficiency of government services
- Improved effectiveness of government services
- Impact measurement of policies
- Transparency and democratic control
- Participation
- Self-empowerment
- Improved or new private products and services
- New knowledge from combined data sources and patterns in large data volumes

Benefits for individuals, businesses and government

Open data has a wide range of benefits that already positively impact many individuals, from the live Covid dashboards used by media, to online mapping and navigation apps, all of which use open data.⁸

Open data has significant potential for Scotland's businesses to strengthen growth and create more meaningful customer engagement. Retailer Asos is among those embracing open data by allowing developers to build apps and platforms using their catalogue of products, extending their online presence.⁹ As this is open data other developers can learn from the experiment and create functional improvements in real time.¹⁰

Whilst Scottish industry and business will play an important role in interpreting and adding to open data, commercial approaches will not create the large-scale, nationwide economic benefits but could instead limit societal benefits and innovation.¹¹ There are benefits for government at all levels in leading open data access, as in the case of Finland's Helsinki Region Infoshare.

⁷ Open Data Handbook. Why Open Data? [Online](#). Accessed 24 January 2022.

⁸ Watt, 2021. [Online](#). Accessed 9 February 2022.

⁹ Retail Week, 2011. Asos to open data to external web developers. [Online](#). Accessed 9 February 2022.

¹⁰ Liu et al, 2021. Datasets for Online Controlled Experiments. [Online](#). Accessed 9 February 2022.

¹¹ Watt, 2020 . Ten Years After. [Online](#). Accessed 15 February 2022.

Case study:

Helsinki Region Infoshare (HRI)

HRI makes public data available for citizens to access, use and transform creative new mobile applications.¹² Beginning in 2010, initial development focused on a platform and subsequently Helsinki City Council digitised its case management system and made all documents publicly accessible. It developed OpenAhjo, an API for accessing decision making material for the City of Helsinki.¹³

HRI has subsequently been refined and now hosts over 1,000 data sets including data on public transport, public decision making, public service points, maps, statistics and detailed statistical data on schools, wellbeing and social services, historical maps, and aerial photos.

Access to open data has enabled innovation through various apps for example around public transport and tourist services. One example of these is Blindsquare¹⁴, which allows blind, blinddeaf and sight impaired citizens to more easily navigate the region.

HRI and the apps that have been developed through open government data have made using public services easier and more accessible for citizens, improved quality of life and satisfaction, had a positive impact on the city, and created new businesses and jobs.

HRI is based on the contribution of member cities and citizens. Each member city within HRI has its own contact who continually monitors and identifies data that could be published. Anyone can give feedback on the data and suggest specific data they would like to see published. The value of open data increases the more it is used.¹⁵

¹² Urban Sustainability Exchange. Helsinki Region Infoshare. [Online](#). Accessed 10 February 2022.

¹³ OpenAhjo website. [Online](#). Accessed 10 February 2022.

¹⁴ Blindsquare website. [Online](#). Accessed 23 February 2022.

¹⁵ Urban Sustainability Exchange. Helsinki Region Infoshare. [Online](#). Accessed 10 February 2022.

Not only does widening access and use of open data have significant economic potential for Scotland, it has the opportunity to help foster an open data culture. By embedding open data in society, sharing information is made easier across communities at all different levels, including internationally. This sharing can allow for the growth and development of new ideas across all areas of public life.¹⁶

The encouragement and use of open data can help bring Scotland closer to its National Outcomes as defined by the National Performance Framework (NPF).¹⁷ Integrating open data more widely into our public processes cuts across many aspects of the NPF, including International (we are open, connected and make a positive contribution internationally), Communities (we live in communities that are inclusive, empowered, resilient and safe) and Economy (we have a globally competitive, entrepreneurial, inclusive and sustainable economy).

The use of open data is evolving quickly and soon countries that encourage its use will differ greatly from those that do not. The benefits are beyond business and innovation, open data is becoming part of a democratic way of life.

The evolution of open data culture is happening at pace and its benefits extend beyond government and business innovation. The adoption of open data is likely to become a recognised hallmark of democratic, transparent, and progressive countries. Failure to embrace open data risks undermining the potential for a greater participation and justice within our democracy.

Progress in Scottish Government

Under [Re-use of Public Sector Information](#) (RPSI) regulations, since 2015 public bodies, including Scottish Government departments and local councils, have been legally obliged to permit reasonable reuse of information.¹⁸

The Scottish Government has made progress in licensing the data it makes available on its core gov.scot website through the Open Government Licence (OGL3). However, subdomains of the core site (for example <https://findbusinesssupport.gov.scot/>) are not covered consistently. Because the Scottish Government has no open data portal, navigating its complex structures to work out what

¹⁶ Open Data Handbook. Why Open Data? [Online](#). Accessed 24 January 2022.

¹⁷ Scottish Government 2021. A changing nation: how Scotland will thrive in a digital world. [Online](#). Accessed 28th February 2022.

¹⁸ Watt, 2020. Scottish Government: Headlines 2020. [Online](#). Accessed 17 January 2022.

data is open and where that can be found is difficult. A full breakdown of the analysis is available [here](#).

A group of civic society data experts came together to develop a crowd-sourced national portal for Scotland (<https://opendata.scot>). As a volunteer-run project that has been established over three weekends it shows the potential for quickly creating the infrastructure. This includes the beginnings of automated analytics of open data publication in Scotland.¹⁹

The Scottish Government permits the reuse of core website content but 30 of the 32 local councils do not. Local councils should make it clear how citizens can re-use data and information from their website through well formatted and licensed open data.²⁰ Without this, it is necessary to use repeated Freedom of Information requests or find an alternative source for the data if it exists, which wastes time and money.²¹

As part of The David Hume Institute's recent work analysing open data available for communities in partnership with the William Grant Foundation, we could not include data that was available from some local authorities which could not be found for the whole of Scotland. This meant not using data that would have been useful because of unequal data provision across the country. This could potentially be impacting other projects, and should be urgently addressed.

Findability and the adoption of standards

Publishing open data accompanied by the best metadata standards available aids the findability of that data and helps end users to understand that data contextually.²² Similarly, having data portals which can group the data geographically aids discoverability and helps to group common data across providers.

The annual survey by Data.Europa.EU²³ which measures open data maturity assesses a number of aspects of open data publication to arrive at a series of scores for each country. These include policy, impact, portal provision, and data quality (compliance with DCAT-AP metadata standard). The exception in the public sector in Scotland is SEPA which explicitly uses DCAT-AP standard.²⁴

¹⁹ Open Data Scotland, 2021. Scorecard. [Online](#). Accessed 17 January 2022.

²⁰ Watt, 2020. Permission to re-use local authority website content. [Online](#). Accessed 17 January 2022.

²¹ What do they know, Freedom of information requests. [Online](#). Accessed 17 January 2022.

²² Code the City, 2018. Response to Scotland's Draft Action plan on open government. [Online](#). Accessed 17 January 2022.

²³ Data Europa.EU 2021. Open Data in Europe 2021 Dashboard. [Online](#). Accessed 17 January 2022.

²⁴ SEPA SEWeb Data catalogue linked data resources. [Online](#). Accessed 17 January 2022.

In Scotland there is no government-provided national open data portal. This is in stark contrast with other European countries such as France whose portal collates 40,863 data sets and 218,538 data resources.²⁵

Progress for Scottish Local Authorities

It is widely recognised that the benefits of opening public data are not only transparency but wider social and economic benefits.²⁶ To reap these benefits the data must be usable, useful and used. For these things to happen we need to have consistency, standardisation and reliability baked into the publishing process. Unfortunately, this is not the case.

Currently, only fourteen of thirty-two (or 43.75%) councils publish any open data.²⁷ Over the last seven years several portals have been launched, moved address or closed down. The Highland Council's (which was part-funded by the Scottish Cities Alliance's Data Cluster programme) vanished completely.²⁸

In 2015 Glasgow City Council were seen as a European Leader with a portal with over 400 datasets²⁹ but that presence was taken offline and replaced with a much more modest offering with 62 data sets.³⁰ Similarly, the City of Edinburgh Council (CEC) in 2019 had a portal supplying 236 datasets³¹ (many of which, sadly, were outdated and not maintained). In February 2022, CEC have a Geospatial portal with only 43 data sets.³² In both cases there is no known archive of the lost data that can be accessed. Any published resource should follow the concept of persistent and resolvable URIs (addresses) for web assets - especially those at which open data is published.³³

This process of changing portals, and web addresses, and removing individual data sets make the publication process unreliable. There are no public announcements of impending shut-downs - giving no opportunity for the civic community to archive data sets before they are lost.

Similarly, and ignoring the 56% of local councils who don't publish open data, there is no

²⁵ Gouvernement Francais, Open Platform for French Public Data. [Online](#). Accessed 17 January 2022

²⁶ Scottish Government, 2015. Open Data Strategy. [Online](#). Accessed 17 January 2022.

²⁷ Open Data Scotland, 2021. Scorecard. [Online](#). Accessed 23rd February 2022

²⁸ Watt, 2021. Scottish Local Authorities Open Data List. [Online](#). Accessed 17 January 2022.

²⁹ Urban Sustainability Exchange. OPEN Glasgow - City Data Hub. [Online](#). Accessed 23rd February 2022.

³⁰ Glasgow Open Data. [Online](#). Accessed 23rd February 2022.

³¹ Watt, 2019. Scotland's Open Data, February 2019. An update. [Online](#). Accessed 17 January 2022.

³² Open Data Scotland. Organizations. [Online](#). Accessed 23rd February 2022.

³³ Interoperability Solutions for European Public Administrations, 2012. Study on persistent URIs, with identification of best practices and recommendations on the topic for the MSs and the EC. [Online](#). Accessed 23rd February 2022.

consistency across local authorities as to what is published. If only one or two authorities of 32 publish data on planning applications, or urban footfall, for example, what incentive is there to use that data to create new insight? Which business would invest in creating new products or services based on this data if it could vanish tomorrow?

The report commissioned by Scottish Cities Alliance *SCA Data Cluster Consultancy Final Report*³⁴ looked at the progress of the (Open) Data Cluster of Scotland's eight city authorities. It is both interesting and will prove useful if the conclusions are accepted by government. The report identifies a number of barriers to open data publication and suggested changes, including a legislative mandate as necessary to fix the system.

Progress for health

Public understanding of health has never been more vital than during the Covid-19 pandemic. Individuals and experts have been under significant pressure to interpret data and understand the issue and have required fast changes in the way health data is processed openly.

- The NHS Scotland Open Data platform continues to be developed as a very useful resource. The number of datasets have more than doubled in recent years.
- None of the fourteen Health Boards publish their own open data.
- Only one of the 30 Health and Social Care Partnerships (HSCPs) publish anything close to open data: *Angus HSCP*.
- Many health bodies have publication schemes on their website which date back six or more years and state an intent to publish open data.

In the early months of the pandemic, while Italy was producing detailed daily open data on infection rates, hospitalisation, ICU occupancy and deaths and more, Scotland had no open data - and were deleting each day's data as they published the new day. Change only occurred after civic society called for the data to be published quickly, consistently, and in a way that makes it easy for the data users to consume it, using best practice and quickly adopting those standards and approaches.³⁵

It is vital that appropriate health data is published openly as a matter of course by health bodies in Scotland.

³⁴ Optimat Ltd for Dundee City Council (on behalf of the Scottish Cities Alliance Data Cluster), 2021. [Online](#) Accessed 23 February 2022.

³⁵ Code the City, 2020. Scotland's Covid-19 Open Data. [Online](#). Accessed 23 February 2022.

Progress for universities and colleges

The vast majority of institutions make no provision for open data and some have stated vague plans. Universities and colleges play a crucial role in planning the future workforce, understanding population and migration trends and the development of research. Openly published data from higher education institutions would have a valuable impact on planning for the economy and business.

Effective analysis of universities and colleges should be based on licenced, properly structured data covering topics such as³⁶:

- Courses
- Modules
- Events
- Performance
- Physical assets
- Environmental performance
- KPI targets and achievements etc.

A [full breakdown](#) of the analysis is available here.

In addition courses at Universities, such as MSc in Data Science or computing science could be using existing open data as part of their courses, showing how to create and licence open data, and encouraging students to support the open data community.

Call for faster progress

The [European Data Portal](#) identified areas where open data is already having a high economic impact, and areas of high potential across Europe. 15.7% growth is expected from these sectors through the use of open data. High impact sectors include public administration, professional, scientific and technical activities, information and communication and ICT, transportation, and storage. High potential sectors include agriculture, financial services and insurance, health, education, wholesale retail and trade, and real estate activities.³⁷

³⁶ Watt, 2020. Scottish Universities and Colleges. [Online](#). Accessed 11 February 2022.

³⁷ European Data Portal, 2020. The Economic Impact of Open Data: Opportunities for value creation in Europe. [Online](#). Accessed 17 January 2022.

Open data can positively impact a wide range of the Scottish economy. It can drive innovation and creative policy and business solutions. Open data also fosters transparency and trust, which are essential to the proper functioning of government.

Faster action is needed to make this transition, as promised in multiple government strategies but not yet delivered.

What next?

The social and economic arguments for open data are clear. Globally, governments and political unions including the EU and developing countries have prioritised action which in many cases overtake Scotland's progress in the delivery of Open Government data plans. This includes creative use of open data from countries including Kenya, Romania, Mexico, Honduras, Paraguay and Uruguay. Urgent action is needed to ensure Scotland doesn't miss out.

Effective development of open data requires targets and measures. Monitoring and open reporting of progress would:

- Look at engagement, the usefulness of data and its integration into education - not just counting datasets
- Fund innovation: specifically in the use of open data; in the creation of tools; in developing services to both support government in creating data pipelines, and in helping citizens in data use
- Adopt, or co-develop, and mandate the use of data standards across the public sector
- Make data findable, easy to aggregate, or compare by developing a national open data portal
- Develop and share canonical lists of 'things' with unique identifiers allowing data sets to be integrated
- Adopt the concept of data as infrastructure on which new products, services, apps, and insights could be built.

There must be rapid change in attitude and practice for Scotland to make the most of the opportunities afforded by open data.

Appendix for a breakdown of actions

Action for NHS Scotland

- Each health board, HSCP and other body to develop and implement a plan for open data provision.
- To adopt common approaches, standards and licences for that data publication.

Action for COSLA and Scottish councils

- Update Re-use of Public Service Information (RPSI) rights on every council's website content as an initial step to achieving more open data, specifically in relation to the Open Government Licence (OGL3). This is already an obligation on public bodies, but 25 local authorities do not do so.³⁸
- Use its membership on the Open Government Scotland steering group to prompt faster and more consistent action across all local authority areas.
- Align local authority's plans to publish open data.
- To ensure adoption of common metadata standards, and formats and platforms for publishing.
- To agree on priority data sets.
- Use the conclusions of the Optimat report for SCA as a shortcut to identification of actions.³⁹
- Once common data needs are identified, work with the Improvement Service on planning, implementation and publication.

³⁸ Watt, 2020. Permission to re-use local authority website content. [Online](#). Accessed 17 January 2022.

³⁹ Optimat Ltd for Dundee City Council (on behalf of the Scottish Cities Alliance Data Cluster), 2021. [Online](#) Accessed 23 February 2022.

Action for Scottish Government

- To shift from managing open data as a transparency issue under the Open Government Partnership to managing it as a core part of their Digital Strategy, and resource this as needed.
- To refresh the 2015 Strategy - and to set deliverable actions across the Scottish public sector the delivery of which is monitored and reported on.
- To create a national open data portal.
- To adopt or create with departments and public sector organisations common open data publishing standards.
- To provide publishing platforms for open data through a central contract which makes it easier and cheaper for local authorities to publish their data.
- Stimulate the use of open data through data expeditions and hackathons. This should be in partnership with the technology and data sectors. Extra-curricular programming clubs should be supported at the school stage in partnership with local councils.
- Encourage businesses to engage with open data by providing better explanations of the context surrounding public data resources, particularly around their scope and quality.
- The UK and Scottish Governments should work together with commercial partners to accelerate superfast broadband provision, in order to deliver reliable, high speed broadband connectivity across Scotland so that all areas in Scotland can benefit from advances in technology.

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