

Data Cluster Consultancy

Final Report
Dundee City Council
26th July 2021

J3260



Executive Summary

Open data is defined by the Open Data Institute as:

“data that anyone can access, use and share”¹

Scotland’s open data landscape is underpinned by the Scottish Government’s Open Data Strategy² (2015) and, more holistically, by its Digital Strategy³ - ‘A Changing Nation – how Scotland will thrive in a digital world’ (2021). The landscape is supported by frameworks and tools, like the Open Data Institute’s Data Skills Framework, and continues to evolve and innovate through strategic interventions like “Scotland’s 8th City – The Smart City” ERDF Programme in connection with the Scottish Cities Alliance/ Smart Cities Scotland. “Scotland’s 8th City – The Smart City” ERDF Programme, or the 8th City Programme, was established in 2015, delivering a range of projects across numerous themes, with the stated aim of enhancing “Smart City activity to accelerate and transform the delivery of city services and make Scotland’s cities more attractive, liveable and resilient.”⁴ One of these strands, or “Operations”, focused on open data. This programme represents 41 projects either completed or currently underway, with a total investment of £48.8m, of which £20.5m is from the European Regional Development Fund (ERDF), and £500k from the SCA Cities Investment Fund.⁵

This report presents the analysis, action plan and conclusions of a consultation study conducted by Optimat Ltd for Dundee City Council (on behalf of the Scottish Cities Alliance Data Cluster⁶), between October 2020 and June 2021, to provide “data cluster consultancy”. The consultation study comprised a stakeholder review with the following main activities (described in detail in Section 1.2 of the report):

- Open Data User Group Formation & Engagement
 - Identifying the composition of the Open Data User Group⁷
 - Forming the Open Data User Group
 - Engaging with the Open Data User Group via MS Teams consultations (calls)
- Online Survey
 - Designing a survey with branching logic to create a custom path based on a user's response(s)
- Open Data Workshop
 - Hosting a workshop in partnership with Scottish Cities Alliance and Scottish Government which brought together key players within the open data community in Scotland to discuss the purpose, needs and ambitions of the Open Data User Group and the

¹ <https://theodi.org/article/what-makes-data-open/>

² <https://www.gov.scot/publications/open-data-strategy/>

³ <https://www.gov.scot/publications/a-changing-nation-how-scotland-will-thrive-in-a-digital-world/>

⁴ Scottish Cities Alliance Website: [Smart Cities : Scottish Cities Alliance](#)

⁵ 8th City Programme Newsletter – May 2021: [8th-City-Update-Newsletter-19-March-May-2021.pdf \(scottishcities.org.uk\)](#)

⁶ Please note that Data Working Group / Data Cluster are used interchangeably within the report but are the same group – this relates to the Data Cluster within SCA.

⁷ The Open Data User Group is the group that was formed as a result of this consultancy project and with whom the SCA Data Cluster seek to continue engagement with.

necessary actions that will facilitate sustainability and continued engagement to support the development of open data in Scotland.

Analysis of the consultations, online survey, follow-up consultations and workshop, as well as additional input obtained via discussions with the project manager, representatives from Scottish Government and partner organisations and post-workshop feedback from attendees helped to identify key themes. The key feedback themes (described in detail in Section 5 of the report) were identified as:

- Discoverability
- Accessibility
- Standardisation
- Skills
- Level of commitment
- Fragmented nature of the Data Cluster

An action plan was devised based on the analysis of feedback. It is our belief, based on the study findings, that there is a need to undertake internal actions before engaging with the Open Data User Group. This will ensure that there is a clear and consistent approach to open data that not only aligns with the Phase 2 plans (Data Cluster Workplan⁸) but that also concurs with policies and initiatives from stakeholders within the wider ecosystem including, for example, Scottish Government, the Innovation Centres and the Improvement Service; thus, resulting in a joined-up approach.

The action plan provides a pragmatic starting point for the Data Cluster to progress into Phase 2 and beyond whilst engaging with open data end users. It is our recommendation that the Data Cluster now need to come together to discuss the findings in line with the Phase 2 plans and agree how best to action the proposed plan and align it with the ongoing activities of the cluster.

In conclusion, the analysis indicates that there is an appetite for access to open datasets in Scotland and a desire to be part of an Open Data User Group. There is also an opportunity for the Data Cluster, in partnership with stakeholder partners, to address the challenges identified via the proposed Action Plan. The Action Plan will enable the Data Cluster to undertake some housekeeping whilst addressing many of the challenges identified within the study, and by working closely with fellow stakeholders in the ecosystem it can open up access to data and achieve the open data ambitions set out in the 2021 Digital Strategy – ‘A Changing Nation: how Scotland will thrive in a digital world’ and conserve the fundamentals and principals of the national Open Data Strategy published in 2015.

⁸ Document shared by Doug Young (Dundee City Council) outlining Phase 2 plans entitled Data Cluster Workplan – update 11-20 WIP

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Prepared By: Ashley Stewart & Jordan Stodart

Date: 25 July 2021

Approved By: Iain Weir

Date: 26 July 2021

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1 Introduction

This report presents the analysis, action plan and conclusions of a consultation study conducted by Optimat Ltd for Dundee City Council (on behalf of the Scottish Cities Alliance Data Cluster), between October 2020 and June 2021, to provide data cluster consultancy in the form of a stakeholder review.

1.1 Project Context

Open data is defined by the Open Data Institute as:

“data that anyone can access, use and share”⁹

Scotland’s open data landscape is underpinned by the Scottish Government’s Open Data Strategy¹⁰ (2015) and, more holistically, by its Digital Strategy¹¹ - ‘A Changing Nation – how Scotland will thrive in a digital world’ (2021). The landscape is supported by frameworks and tools, like the Open Data Institute’s Data Skills Framework, and continues to evolve and innovate through strategic interventions like “Scotland’s 8th City – The Smart City” ERDF Programme in connection with the Scottish Cities Alliance/ Smart Cities Scotland. “Scotland’s 8th City – The Smart City” ERDF Programme, or the 8th City Programme, was established in 2015, delivering a range of projects across numerous themes, with the stated aim of enhancing “Smart City activity to accelerate and transform the delivery of city services and make Scotland’s cities more attractive, liveable and resilient.”¹² One of these strands, or Operations, focused on open data. This programme represents 41 projects either completed or currently underway, with a total investment of £48.8m, of which £20.5m is from the European Regional Development Fund (ERDF), and £500k from the SCA Cities Investment Fund.¹³

As the Programme was being launched, it was recognised that collaboration between the cities would be particularly vital to the Data Operation and its associated projects. To that extent, the Data Cluster and associated Steering Group was established as part of the Programme, with a focus of sharing knowledge and best practice across the cities.

In 2016, the Smart Cities Scotland Blueprint – prepared for the Scottish Cities Alliance – set out five delivery objectives for Smart Cities Scotland, including the objective of ‘Open Data & Transparency’, which serves the purpose of *“moving from passive provision of data to an active engagement with data community to identify and develop innovative smart city solutions”*. This integration of data and digital technologies intends to enable a more strategic approach to sustainability, citizen wellbeing and economic development.

⁹ <https://theodi.org/article/what-makes-data-open/>

¹⁰ <https://www.gov.scot/publications/open-data-strategy/>

¹¹ <https://www.gov.scot/publications/a-changing-nation-how-scotland-will-thrive-in-a-digital-world/>

¹² Scottish Cities Alliance Website: [Smart Cities : Scottish Cities Alliance](#)

¹³ 8th City Programme Newsletter – May 2021: [8th-City-Update-Newsletter-19-March-May-2021.pdf \(scottishcities.org.uk\)](#)

As presented in the Smart Cities Scotland Investment Map, each of Scotland's seven cities shortlisted priority activities including the development of open data platforms / portals¹⁴. It was proposed that the open data platforms combine the following core activities:

- Support for cities and end-users to develop and use data-led solutions through partnerships with universities, business and, where desirable, embedded technologists/coders and service designers in residence placed in local authorities
- Challenge-led competitions aligned with priorities defined by the Scottish Government's national outcomes and shared objectives in city region agendas
- A programme of meet ups and business support to link cities to data and visualisation communities, and to assist data-led companies to grow

All seven cities now have open data platforms, with circa 450 different data sets published by February 2019¹⁵ - it should be noted that Edinburgh and Glasgow datasets pre-existed the 8th City programme.

As detailed subsequently, this study was undertaken to form and engage with an Open Data User Group in order to provide feedback on the Scottish Cities open data publication plans, and to inform future open data publication by the cities. This feedback may form the evidence base used by the Scottish Cities Alliance Data Cluster to sustain engagement with the Open Data User Group and support the development of open data in Scotland.

1.2 Project Aims and Objectives

The aim of this work was to undertake a stakeholder review aimed at:

- Forming and engaging with an "Open Data User Group" in order to provide feedback on the Scottish Cities open data publication plans, and to inform future open data publication by the cities.
- Creating a strategy for continuous engagement by the Data Cluster Working Group with the user groups in order to maximise the value of further open data publication.
- Creating a methodology for assessing the engagement of the Scottish Cities open datasets, based on engagement with the User Group and on Open Data Platform site analytics.

1.3 Project Method and Activities

Our approach to this assignment centred on the identification of the composition of an Open Data User Group which involved utilising existing directories and engaging with our network of contacts, cross checking against existing databases and liaising with partners, national bodies and related research projects to identify companies and stakeholders pertinent to the Open Data User Group.

Appendix A includes a list of organisations and stakeholders that were contacted as part of the stakeholder review.

A programme of consultations (MS Teams calls) was then carried out which sought to:

¹⁴ For example, [Perth](#), [Dundee](#), and [Stirling](#) (click hyperlink to visit portal)

¹⁵ According to delivery group minutes

- Make pertinent stakeholders and organisations aware of the Open Data User Group project being undertaken by Optimat on behalf of the Scottish Cities Alliance and its ambitions to establish an Open Data User Group
- Invite stakeholders and organisations to join the Open Data User LinkedIn Group¹⁶
- Explore open data experiences
- Gain an understanding of the challenges facing end users of open data
- Gain an understanding of their awareness (or otherwise) of the Scottish Cities Alliance members (i.e., Scottish cities) open data portals and available datasets

The consultation discussions were fluid and unique to each consultee rather than structured by a pro-forma as in our experience this enables the consultee to be candid and provides much richer outcomes. Themes were, of course, covered during the discussions and were in alignment with the online survey (detailed in Section 3 below). This included, for example, awareness of the Scottish Cities Alliance and the open data portals / open datasets of each city, their experiences with open data, how open data benefits them, what challenges they have faced, what improvements could be made, etc. The feedback themes which emerged from these consultations (and the survey) are discussed at length in Section 5 of the report.

This was then followed by an online survey which was designed with branching logic to create a custom path based on a user's response(s). The survey sought to engage with organisations that were either already familiar with, and use, open data as well as those that were not already working with open data but could benefit from doing so, for example, by leveraging open data to develop innovative products and services.

The survey was developed to allow us to:

- Identify the level of open data experience within the Open Data User Group
- Explore user experiences including applications of open data, value generated and challenges faced
- Determine awareness of the Scottish Cities Alliance and the cities open data portals
- Identify usage levels and user experiences of working with the available datasets from the cities
- Identify types of open data that the Open Data User Group would be interested in gaining access to

Based on the feedback from the consultations and the survey (described in detail in section 5) the methodology was altered as it became apparent that a programme of events was not going to add value to the Open Data User Group project outcomes. Thus, following agreement with the project manager, Doug Young at Dundee City Council, further effort was placed on engaging with the Open Data User Group following the online survey. The follow-up consultations enabled us to delve much deeper into some of the feedback points and informed the action plan and conclusions set out within the report.

A final Open Data Workshop was jointly delivered by Optimat, the Scottish Cities Alliance and Scottish Government. It was an opportunity for the Scottish Cities Alliance to share information about its strategic ambitions and to discuss the findings of the Open Data User Group study. But, it was also an opportunity for Scottish Government to share information on its latest strategies, policies and initiatives

¹⁶ <https://www.linkedin.com/groups/8992897/>

that will support open data and could potentially address some of the challenges highlighted during the study. It brought together key players within the open data community in Scotland to discuss the purpose, needs and ambitions of the Open Data User Group and the necessary actions that will facilitate sustainability and continued engagement to support the development of open data in Scotland.

In this report, we present analysis of all feedback obtained from the Open Data User Group to date. We firstly introduce the Open Data User Group including the formation and consultations, the online survey, and the workshop and then present analysis of the overall feedback. We have amalgamated this feedback so as to not attribute comments to any individual or organisation (as was agreed with Dundee City Council and stated during the consultations, survey and workshop).

2 Open Data User Group – Formation and Engagement

As introduced earlier, one of the key activities in this consultancy assignment was to form and engage with an Open Data User Group to provide feedback on the Scottish Cities open data publication plan, and to inform future open data publication by the cities. A summary of this activity is provided below.

2.1 Formation of the Open Data User Group

The aim of this activity was to develop an understanding of the potential membership (end users) that may have an interest in open data including, for example, local government and the wider public sector as well as private, third sector and academic organisations.

2.1.1 Identifying the Composition of the Open Data User Group

We utilised our existing network of contacts and adopted a network of network approach to identify companies and stakeholders pertinent to the Open Data User Group. This included engaging with the following key partners:

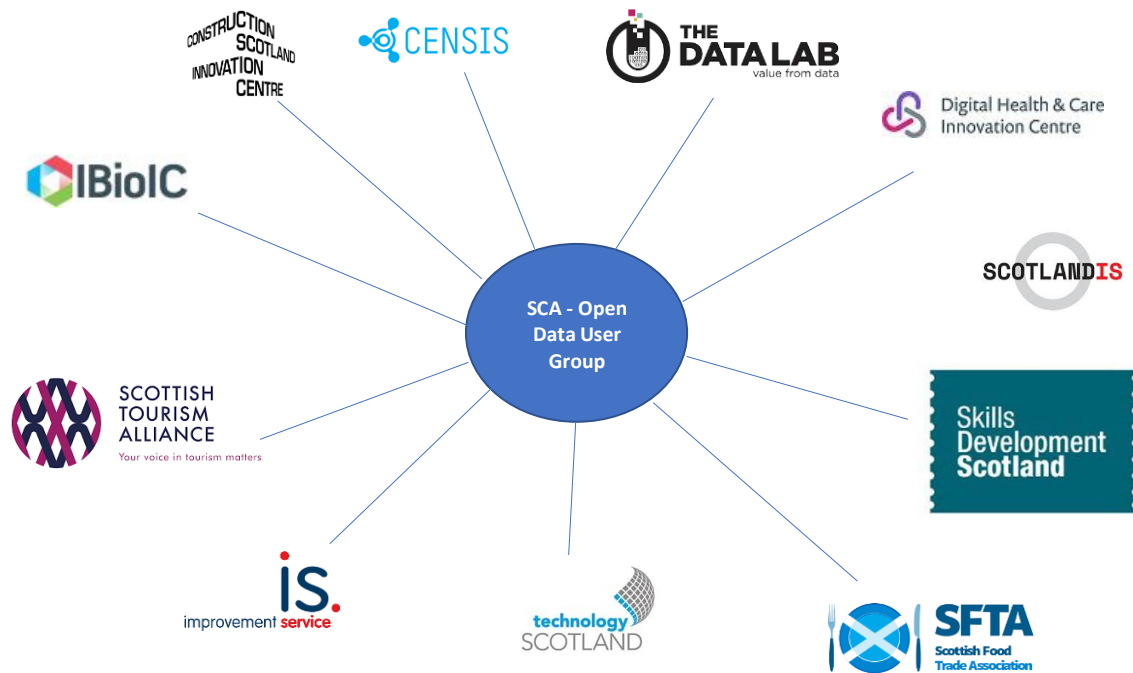


Figure 1: Network of Network Approach

A database of nearly 250 people from various sectors was compiled over the course of the research project; in total 187 people were contacted representing 138 organisations¹⁷ (occasionally we contacted multiple people from a single organisation, hence more people than organisations). The database was initially developed as a result of our outreach activities and a network of networks approach, and was updated as new contacts emerged through such activities as the workshop event. Outreach activities included, for example, network partners disseminating an email to their network of contacts, sharing a link to the LinkedIn Group and inviting them to engage in the study. The database can be found in Appendix A.

2.2 Engagement with the Open Data User Group

2.2.1 Engagement Process

The process for engaging with members of the Open Data User Group is illustrated in the process diagram presented below.

¹⁷ Not every person/contact in the database was approached. This was because a) we did not have their contact details; b) new contacts emerged having participated in the end-of-project workshop, at which point the consultation phase had completed.

Key:

- Optimat action
- Network action

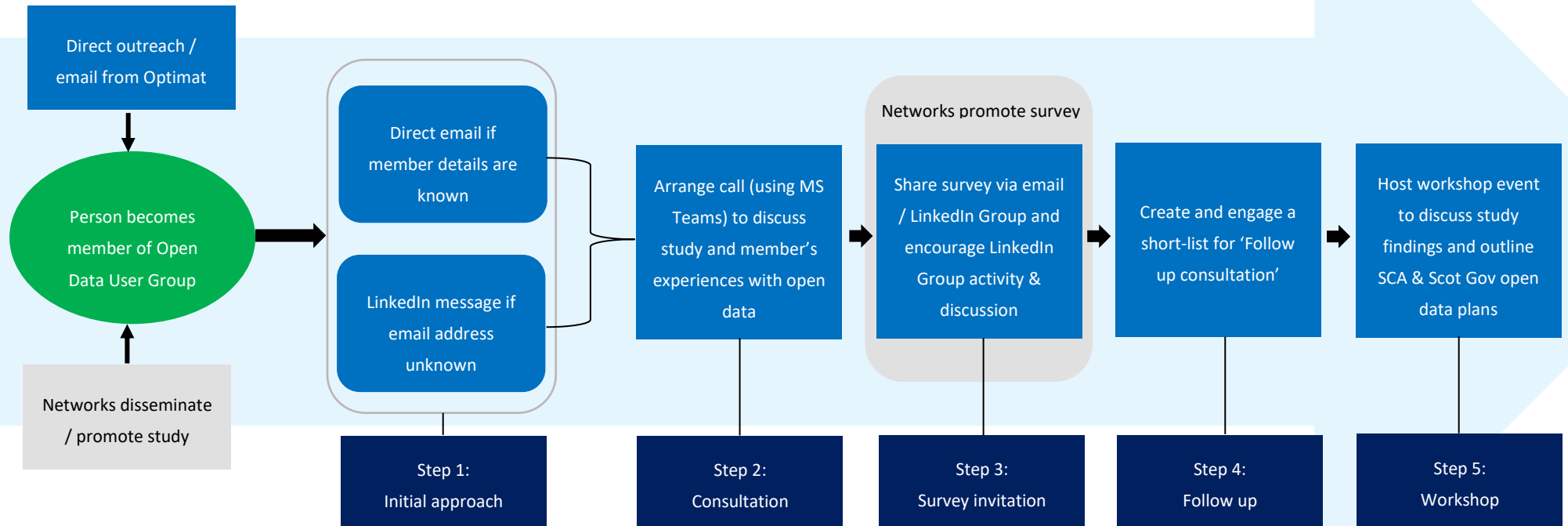


Figure 2: User Group Engagement Process

2.2.2 Creation of a LinkedIn Group

A LinkedIn Group, Scottish Cities Alliance – Open Data User Group¹⁸, was established to share content about the Open Data Users Group activities, events, new/updated datasets and provide members with a platform to share insights and experiences working with open data, link interesting articles and studies, and even publish analysis.

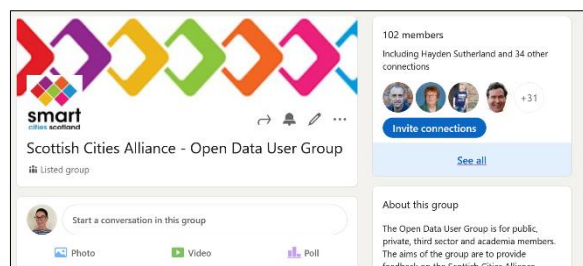


Figure 3: LinkedIn Group

The LinkedIn Group now has more than 100 members. The LinkedIn Group comprises a mix of public, private, academic and third sector members, as shown in the chart below.

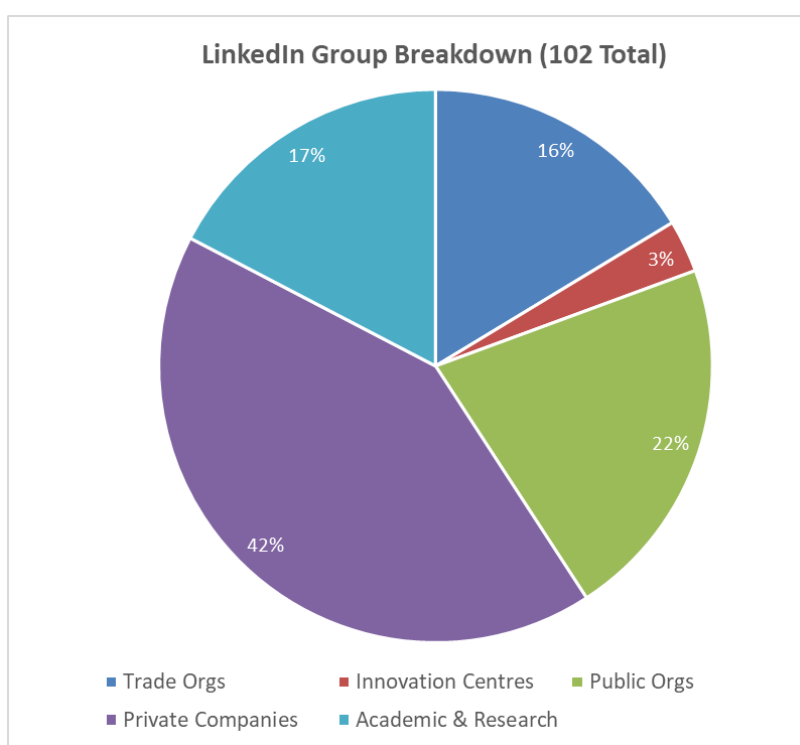


Figure 4: LinkedIn Group Breakdown by Sector

The composition of the overall Open Data User Group is described in more detail below.

¹⁸ <https://www.linkedin.com/groups/8992897/>

2.3 Composition of the Open Data User Group

There are 140 members of the Open Data User Group (representing 96 organisations), as outlined in Appendix B. Membership is determined by any of the following actions:

- Joining the LinkedIn Group
- Engaging in a one-to-one consultation
- Attending the workshop event

A breakdown of the Open Data User Group by sector is illustrated in the chart below.

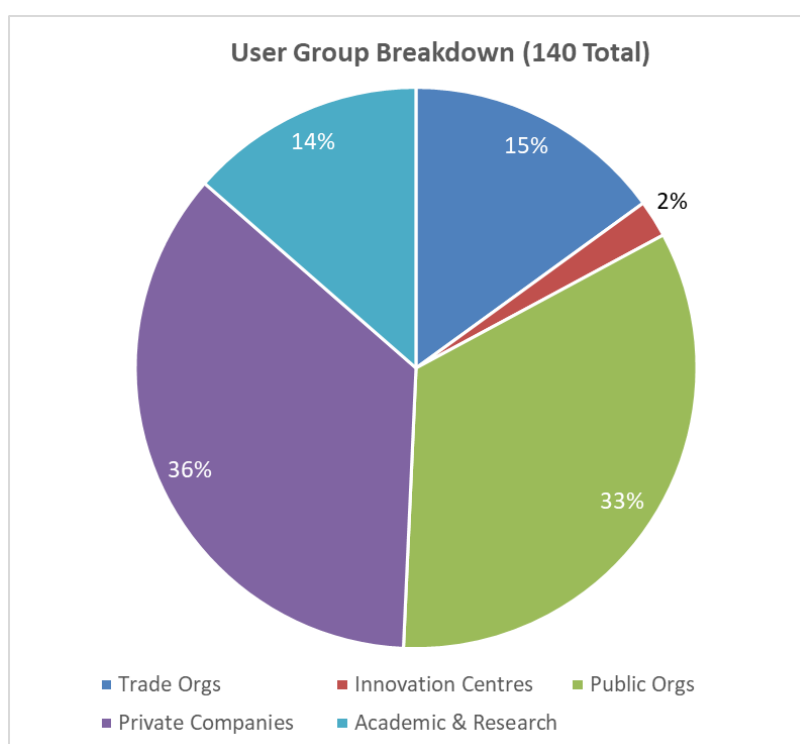


Figure 5: Open Data User Group Breakdown by Sector

The 'Public Orgs' segment consists of members who, predominantly, attended the workshop event held on the 26th May. This is a result of the Scottish Government using the event to outline its open data plans and initiatives – as such, a greater number of Scottish Government personnel were in attendance. If these figures were discounted, there would be a significantly lower proportion of the public sector (or 'Public Orgs') participating in the Open Data User Group, which would be consistent with the overall study – as seen in Figure 4 above – the private sector generally showed greater interest and engagement, overall.

3 Online Survey

As introduced earlier, the online survey¹⁹ (hosted on QuestionPro) was used to engage with organisations that were either:

- Already familiar with, and use, open data
- Not already working with open data but could benefit from doing so, for example, by leveraging open data to develop innovative products and services.

The survey was designed with branching logic to create a custom path based on a user's response(s). For example, the survey presented customised questions based on the respondents answer to whether they were already familiar with open data or had not worked with it.

The survey was structured into three main sections:

1. About your organisation

This enabled us to gather basic information including, for example, contact and sector information which facilitated organisational type and sectoral analysis.

2. Open data experience

This section focused on gaining an understanding of the participant's existing level of knowledge and experiences with open data. This included, for example, their level of understanding, their experiences of working with open data and the challenges faced when using open data.

3. Scottish Cities Alliance

This allowed us to determine the level of awareness of the Scottish Cities Alliance, the open data portals and the available datasets from the cities (i.e. Data Cluster members). Additionally, it enabled us to gain an understanding of the particular datasets that have been utilised by the participant and its organisation and the benefits afforded from access to these as well as an insight into the types of datasets that participants would be interested in gaining access to.

The survey was disseminated to the Open Data User Group via direct email, via the LinkedIn Group and via our network of network partners.

3.1 Survey Analysis

We adopted a sector agnostic approach to disseminating the survey, not specifically targeting one sector or industry over another. This provided responses from a broad cross-section of public, private, academic, and third sector organisations.

The charts below illustrate the key findings from the survey, starting with a breakdown of participants.

¹⁹ <https://www.questionpro.com/a/editSurvey.do?surveyID=7964989>

3.1.1 Breakdown of Survey Response

The survey was completed by a modest sample of 28 from the main sectors shown in the chart below. The different industry affiliations are included further below.

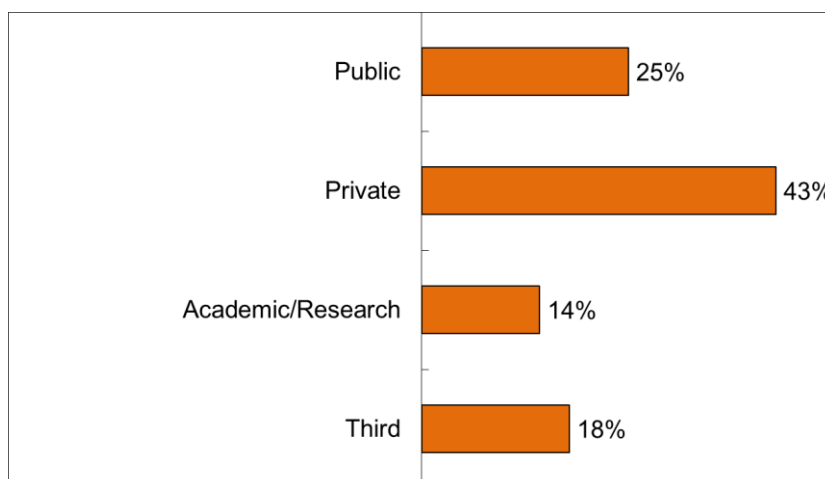


Figure 6: Survey Responses by Sector

In descending order, the following key industries were represented by participants. **NB:** Participants were allowed to check multiple boxes if they straddled multiple industries.

- Technology & Engineering (50%)
- Environment (39%)
- Renewables & Low Carbon (36%)
- Health & Social Care (29%)
- Transport / Logistics (21%)
- Tourism (21%)
- Agriculture (21%)
- Education (18%)
- Food & Drink (18%)
- Oil & Gas (14%)
- Financial Services & FinTech (14%)

3.1.2 Level of Open Data Experience

Gaining an understanding of the level of open data experience across the response group was important to contextualise the survey findings.

The level of open data experience across participants can be seen in the chart below.

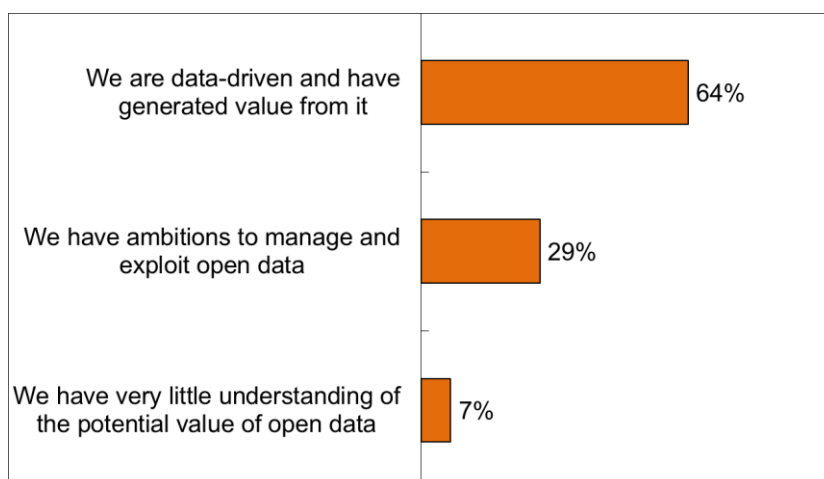


Figure 7: Survey Respondents Open Data Experience

As can be seen in Figure 7, most participants were familiar with open data and either already work with it or would like to. The top bar 'We are data-driven and have generated value from it' predominantly consists of companies who have exploited open data for commercial gain by developing open data products / services. The second and third bars are spread across sectors and signal an interest in learning more about the value of open data.

3.1.3 Awareness of Scottish Cities Alliance & Its Open Datasets

An objective of the study was to understand the level of awareness of the Scottish Cities Alliance and the open datasets available from the cities within the Data Cluster. As illustrated in the chart below, 54% of participants were familiar with the Scottish Cities Alliance; of this group, only 60% were aware that the Scottish Cities Alliance cities have published over 400 open datasets, publicly available for use and re-use. Overall, only a handful of participants (4 out of 28) had actually accessed the datasets and used them.

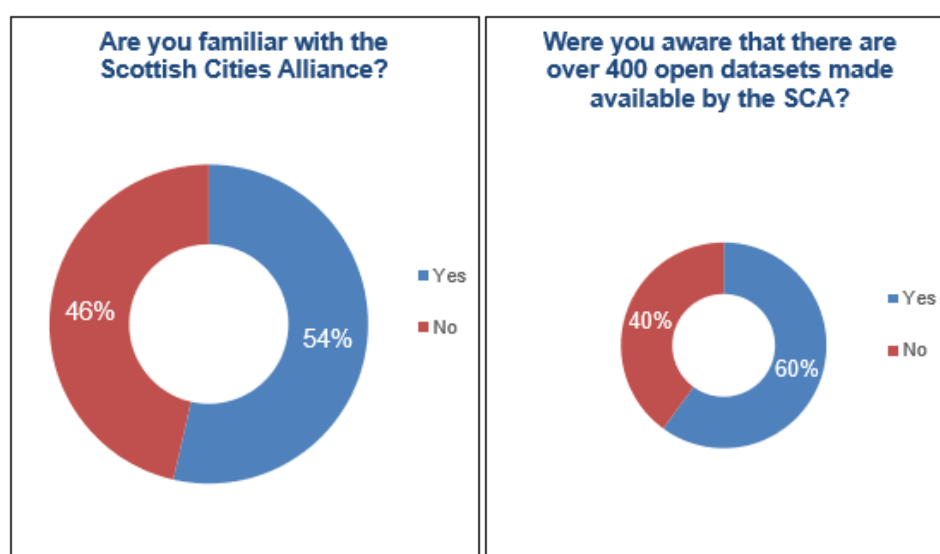


Figure 8: Awareness of the Scottish Cities Alliance & Its Datasets

3.1.4 Challenges of Working With Open Data

The chart below details some of the key challenges that surface when working with or seeking to work with open data.

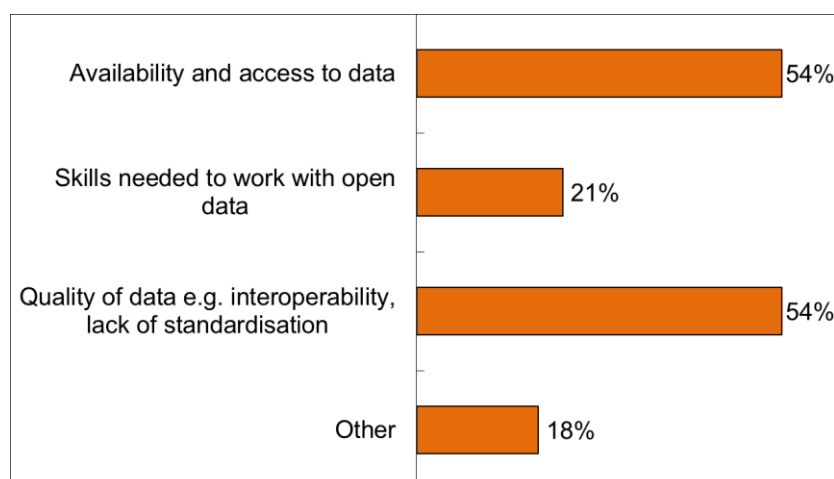


Figure 9: Challenges of Working With Open Data

Two of the major challenges around accessibility and availability of data include: (1) not being able to *discover* data, such as the Scottish Cities Alliance open data portals, due to lack of awareness and promotion; (2) too many disparate portals / websites seemingly sharing the same data which causes confusion. These are major issues for both experienced and inexperienced open data users alike. Moreover, once access has been gained, the datasets required are often not available or are not updated regularly. In addition, the quality of data and lack of *standards* has inhibited widespread adoption of open data as the new open dataset cannot be easily linked and combined with other datasets, i.e., limited interoperability.

For those participants with less open data experience, a lack of skills, in particular data-literacy skills / the ability to actually derive value from open data, was cited as a key barrier to open data adoption.

These and other thematic areas of feedback are discussed in more detail in section 5 of the report.

3.1.5 Industry Benefits of Open Data

There was overwhelming agreement that the survey participants' industries would benefit from regular use of open data – specifically Scottish Cities Alliance open datasets – as illustrated in the left-hand side of the chart below, with 89% of participants in agreement.

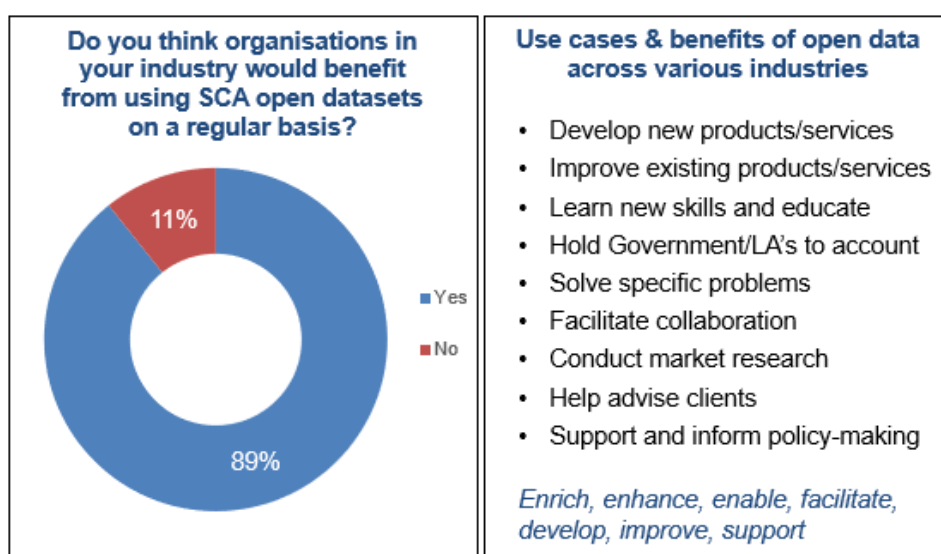


Figure 10: Industry Benefits of Open Data

The right-hand side of the diagram highlights some of the most common use cases and benefits open data can have across different sectors, as identified by survey participants. These range from developing new products to learning new skills, holding Government to account to conducting market research, and facilitating collaboration to informing policy. More detailed use case examples are as follows:

- *“We would require data sets related to welfare benefits applications and assessments to better understand the welfare market structure and to build new data-products to help the welfare sector to monitor benefits and grants”*
- *“We would like access to general population demographics data relevant to health and social care (e.g., deprivation, physical and mental health, etc) to develop an existing [public/third sector] mapping tool for communities, better serving individuals and organisations that use it”*
- *“We would plan to use [new geospatial open datasets] as a syndicated source of data for our clients, enhancing our current products and services by including [the new datasets] in our geospatial data platform”*
- *“The data will be added to our portal, facilitating collaboration, transparency, evidence-based decision making among partner organisations and other stakeholders”*
- *“The data primarily would be used to support and feed into policies but would also be used for developing new services and apps (e.g., energy planning apps) and problem solving”*

The survey demonstrated the far-reaching value of open data. However, several challenges exist for those accessing open data and, for those not currently accessing it, there are significant barriers preventing adoption, such as lack of skills. Despite these issues and challenges, the most striking takeaway is the resounding agreement amongst participants that open data would benefit the sectors they work in. The key feedback themes that emerged during the survey were further developed and validated during the consultation phase and are discussed in section 5.

3.2 Follow-up Consultations

As mentioned earlier in the report, based on the initial findings it was deemed more valuable to conduct a small number of follow-up (secondary) consultations to delve deeper into some of the responses provided during the survey. This enabled us to re-engage with a small sample and discuss their survey responses regarding needs, challenges and experiences in more depth. This was also an opportunity to share details of the workshop and personally invite the participants to attend.

Following a meeting with the project manager and representatives of Scottish Government, it was agreed that the organisations outlined in Figure 11 represented a new perspective on open data because they were, generally, unknown to the client, thus a “new voice” that would be interesting to learn more from.

Organisation	Status
Regulation Technologies Ltd	Unavailable to participate
Data Pepper Limited	Complete
The Health and Social Care Alliance Scotland	Complete
Urban Tide	Complete
GeoSeer	Complete
Cycling Scotland	Complete
Jacobs	Complete
Bell Ingram LLP	Complete
SWRI	Unavailable to participate
Inbest	Complete

Figure 11: Follow-up Consultations

4 Open Data Workshop

Based on the initial findings and a discussion with the Dundee City Council project manager it was agreed that rather than a series of events we would undertake follow up consultations and focus on having one final Open Data Workshop. The workshop was held on 26th May 2021 and was jointly delivered by Optimat, the Scottish Cities Alliance and Scottish Government.

It was agreed that as well as presenting the consultation study findings that the workshop should also include a presentation from the Scottish Cities Alliance to clarify its strategic context for the benefit of those that are unfamiliar with its work. Similarly, it was agreed that it would be valuable for the delegates to hear about the latest open data strategies, policies and initiatives from Scottish Government as this would potentially address some of the challenges highlighted during the study (discussed further in section 5).

The final, agreed, workshop agenda is presented in Figure 12:

14:00 – 14:05	Welcome and introduction	Ashley Stewart, Optimat Ltd
14:05 – 14:15	Scottish Cities Alliance – strategic context	Iain McCreddie, SCA Programme Director
14.15 – 14.25	Scottish Cities Alliance – the data cluster	Doug Young, Dundee City Council
14.25 – 14.35	Open Data User Group Study – the findings	Jordan Stodart, Optimat Ltd
14.35 – 15.00	Open data in Scotland – overview of the landscape and key initiatives	Martin Macfie, Scot Gov
15.00 – 15.10	Local Government Data Task Force and Glasgow Open Data Hub	Kimberley Hose and Stephen Sprott, Glasgow City Council
15.10 – 15.20	Data and Intelligence Network and COVID Data Catalogue	Sandy Smith, Scot Gov
15.20 – 15.30	Open data standards and Community of Practice	Shona Nicol, Scot Gov
15.30 – 15.40	Break	
15.40 – 16.00	Action plan – continuing engagement and sustainability	Ashley Stewart, Optimat Ltd
16.00 – 16.15	Conclusions and next steps	Ashley Stewart, Optimat Ltd

Figure 12: Open Data Workshop Agenda

The workshop brought together key players within the open data community in Scotland to discuss the purpose, needs and ambitions of the Open Data User Group and the necessary actions that will facilitate sustainability and continued engagement to support the development of open data in Scotland.

4.1.1 Workshop Recruitment

The workshop was promoted via the LinkedIn Group (Figure 13) and via our network of network partners as well as personal invites sent to the Open Data User Group.

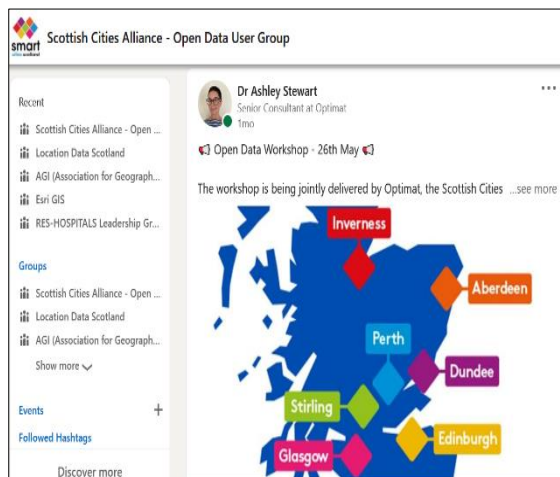


Figure 13: LinkedIn Group - Workshop Promotion Post

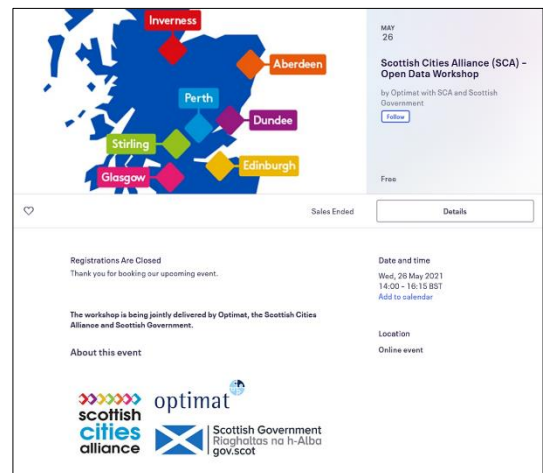


Figure 14: Eventbrite Tool

Eventbrite, which is an event management and ticketing website, was used to coordinate and manage registrations for the workshop. A total of 100 tickets was made available, as shown above (Figure 14).

4.1.2 Registrations and Attendance

We achieved good levels of interest, with 85 registered to attend. The workshop was well attended, with more than 50 delegates participating (representing 35 organisations) which is a fantastic turn-out and there was superb interaction and engagement between delegates on the day.

In terms of attendee distribution by type, there was a higher level of attendance by the public sector at the workshop, as illustrated in the analysis in Figure 15. This is in contrast to the higher levels of engagement with the private sector in the earlier phases of the study, as seen in Figure 4 where the chart illustrates a significantly higher proportion of companies making up the LinkedIn Group. As previously mentioned, this higher level of public sector engagement in the workshop is generally attributed to the Scottish Government promoting the event internally.

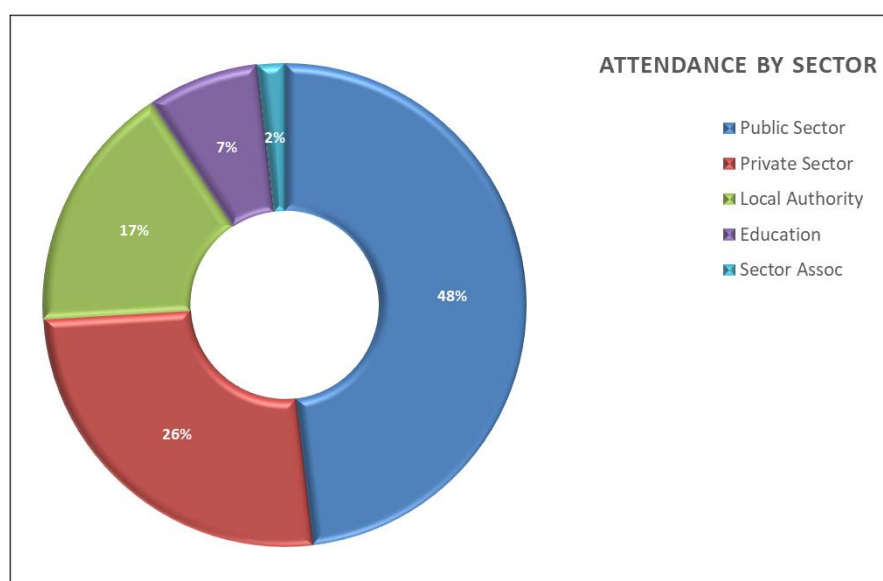


Figure 15: Workshop Attendance by Sector

A list of the organisations that attended the workshop can be found in Appendix C.

4.1.3 Workshop Outputs

One of the key aims of the workshop was to discuss the Action Plan and Strategy to enable continued engagement and sustainability with the Open Data User Group beyond the consultation study period. The draft action plan was presented at the workshop and following discussion it was agreed that the preferred mechanism to host the Open Data User Group in the long-term is Knowledge Hub²⁰. Knowledge Hub is the UK's largest digital platform for public service collaboration; it enables practitioners to connect, exchange knowledge, ideas, insight and experience to improve public services.

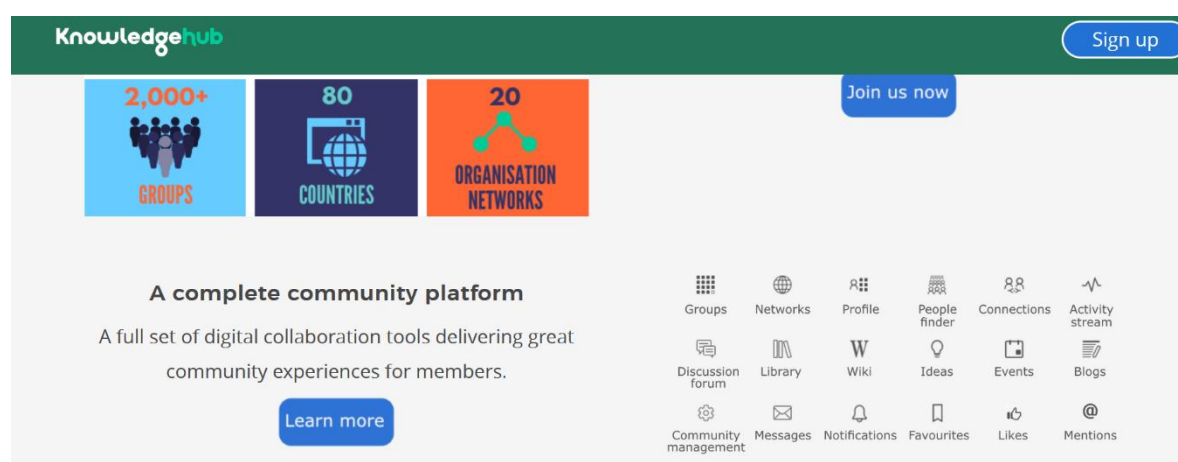


Figure 16: Knowledge Hub

This was widely known by and familiar to the majority of the workshop delegates; therefore, it is a sensible platform to host the Open Data User Group going forward. This has now been built into the Action Plan and Strategy (described in more detail in section 7 of the report).

The workshop also facilitated engagement between attendees via the chat box function on Microsoft Teams. Attendees responded to discussion points proposed by presenters but also interacted independently on various open data themes. After the event we conducted analysis on the chat box thread and created a thematic matrix that mapped the “chat” to the key themes that emerged during the study (discussed in detail in section 5 of the report) – for simplicity, these key themes are Discoverability, Accessibility, Standardisation, Skills, Commitment and Fragmentation. The chat box analysis also identified several sub-themes that connect to these six themes. A condensed version of the matrix is included below with the full version contained in Appendix D.

²⁰ <https://khub.net/>

Theme	Sub-theme	Evidence / Quotes
Discoverability	Range & volume of portals / websites	"a proliferation of data portal / websites / pages describing 'the same thing' seems to make users' life harder and can push things down the search rankings."
	Search / finding portals	"Most of our [Improvement Service / SSDI] data enquiries come from google searches (helps that SSDI and data.gov.uk are search engine optimised)"
Accessibility	Range & volume of portals / websites	"Why does Scotland have 'a number of open data portals'? Surely we should seeking to federate these – at least – if not concatenate them into a national open data portal."
	Technical accessibility	"Catalogues of human-readable open & shared data sources (like Google) are one thing. Machine-readable directories (like the Internet Domain name system – DNS) of the trusted / original data sources are required too"
Standardisation	Range & volume of standards	"So many standards!"
	Commitment to evolving standards	"There's been significant work on Smart City data standards already done by BSI and others – PAS180, PAS182 & PAS183 contain a large amount of standard work"
Skills	Complex user experience	"Think we need to bear in mind that most web content should be accessible, understandable and usable to a 9-11 year old"
Commitment	Resourcing and funding constraints	"Resourcing and importance placed upon [open data] (i.e., governance) is the key thing"
	Policy / legislation / mandate	"[open data] needs a legal direction to enforce its application"
	Culture / importance of open data	"How do we persuade the masses in senior roles to embrace and then lead on the development of an (open) data revolution?"
Fragmentation	Range & volume of initiatives	"So many (UK) government initiatives about making different subsets of data easier to find – energy data, land & planning data, transport data, spatial data, open data...!"
	Disparate / siloed ways of working	"Some LAs (and other public sector organisations) have done some really great work on open data, and others have done nothing at all. How do we avoid a "them and us" in terms of access to good quality data and bring everyone along? Extra funding/resource/software etc?"

Figure 17: Workshop Chat Analysis – Thematic Matrix

Following the workshop a post-event mailer was distributed to those delegates that consented to follow-up contact, as shown opposite. This included a link to the recording of the event, the presentations and to the chat dialogue. Additionally, it sought consent for participants to be included in the Knowledge Hub Open Data User Group.

A follow up email will also be disseminated at the end of the project period to remind delegates to provide their consent for the Knowledge Hub. This will ensure that Scottish Cities Alliance has the full consent of delegates for subsequent engagement; thus, ensuring compliance with GDPR.

SCA - Open Data Workshop

Thank you to all who made it to the Workshop last Wednesday, 26th May. We hope you enjoyed it.

If you were unable to attend on the day the presentations, a recording from the event and the content of the chat box interaction is now available [HERE](#).

At the workshop we discussed the sustainability of the Open Data User Group beyond the period of the consultation project that Optimat have been working on. There was agreement that the preferred platform to host the User Group going forward would be Knowledge Hub. With this in mind, please can you provide consent to be included in the User Group on Knowledge Hub.

The Knowledge Hub User Group will be created following the submission of Optimat's final report; we will, therefore, continue to use the [SCA – Open Data LinkedIn Group](#) in the meantime. The LinkedIn Group will provide further information regarding the final stages of the consultation study and news about the Knowledge Hub in due course.

Thank you

Figure 18: Mailchimp Post-event Mailer

In summary, we received positive feedback following the event including, for example:

“Really enjoyed today's session, thanks for your efforts, much appreciated”.

“Super event! Can I strongly recommend that we don't just work across one sector (e.g. Government / Cities) - but that we also invite collaboration across wider industry? Such as: energy, healthcare, emergency services, transport & mobility, etc”.

“This has been such a great workshop! Thanks everyone so much.”

5 Analysis of Feedback

The analysis of feedback is based on the consultations, online survey, follow-up consultations and workshop. Additional input was obtained via discussions with the project manager, representatives from Scottish Government and partner organisations as well as post-workshop feedback from attendees. Key feedback themes were identified and validated throughout the study and are discussed in detail below and pertain to the Scottish Cities Alliance Data Cluster, but also extend to the public sector more broadly.

5.1 Discoverability

Discoverability relates to the lack of awareness of the Scottish Cities Alliance, the cities open data portals and open datasets, as well as public sector open data plans and initiatives. Participants were generally either unaware of the Scottish Cities Alliance and its open data strategy / publication plan or may be aware of the Scottish Cities Alliance but were unfamiliar with the cities' open data portals and open datasets. For those familiar with any broader public sector open data initiatives, there remained a general consensus that confusion and difficulties arise when searching for open data due to the fragmentation and existence of multiple portals and websites. It is apparent that without the promotion

of open data and without simplifying the discovery of open data, widespread adoption will not likely be achieved.

For this and all remaining themes, see Figure 17 above for sub-themes and quotational evidence that emerged from the workshop event.

The quotes throughout this section are taken from one-to-one consultations with study participants.

“I didn’t know each city had its own dedicated open data portal – I have to go direct to councils for the data I need”

“Awareness of what is out there is needed as this is an ever-changing market with little publicity”

“Multiple portals with different dataset themes and formats is confusing; also makes you unsure how robust the data is”

5.2 Accessibility

Accessibility relates to the access points (e.g., portal, website) and availability of data, and any restrictions imposed on gaining access to it. Participants predominantly cited issues accessing data online, having to go direct to local authorities and organisations for the data they required. Occasionally, participants would recall tensions arising when requesting data direct, implying that authorities were unwilling to supply the data. Another common issue was the disparate nature of open data publication and the number of open data sources available (also relates to discoverability issues) which takes time and effort for users to evaluate and pull data from – a centralised source or portal was often mentioned as preferable. While the formation of a single national portal may be aspirational, there are likely to be steps that could be taken around standardisation to move towards something similar where accessibility to datasets is improved.

“We have to go direct to the councils to get street data – often the council is unwilling to share the dataset”

“One aggregated source of data is needed – we will save time sourcing datasets if we can access from one portal”

5.3 Standardisation

Standardisation relates to data standards adopted by data publishers / suppliers of open datasets. This is an area that Scottish Government is working on with its Data Transformation Framework and CivTech Challenge, aiming to understand what language / keywords people are using to find data. For those experienced in accessing and using open data, of which several study participants were, standards were seen as a significant issue. The data that was being leveraged was not to a standard and quality that enabled datasets to be linked and combined with other datasets (i.e., not interoperable); a lack of consistency at a national level, across the different cities regarding the data they would publish, as well

as the regularity of updates to datasets and maintenance of them, were the key issues raised by study participants.

“A big issue is consistency – we can’t get a full national picture if only one city is publishing the data we need or it publishes one way whilst another publishes differently”

“We get data direct from the council but oftentimes it’s in a non-usable format or full of holes – it’s frustrating when some of the datasets are for basic stuff like roads”

“There is a need for guidance to work from – that would support making data open and available”

5.4 Skills

Skills relates to the technical and non-technical data literacy skills required to work with and derive value from open data. For users of open data, at a fundamental and more basic level, the skills to contextualise data and produce actionable insights from data analysis are considered integral to unlocking the value of open data. Training, upskilling and reskilling industry (in particular more traditional industries where reskilling may be required, e.g., manufacturing) forms a wider agenda around ‘digitalisation’ of industry – this will support wider adoption and usage of open data. For data producers or suppliers, e.g., local authorities, training is required in equal measure, to ensure those departments and personnel understand what data they have available and how that can be exploited for their own benefit but also made available under an open licence for the benefit of, for example, private sector, academic and wider communities.

“We require adequate training in how to exploit the data and derive value from it”

“High level training would help accelerate our capacity in this area – we would require funding to facilitate this”

“Skills remains a challenge i.e. people internally don’t always understand how to use the data or understand its value”

5.5 Level of Commitment

Level of commitment relates to the demonstration of commitment to open data strategies at a Scottish Government level (filtering through local government). Some participants called for legislation²¹ to be brought in - a “stick” rather than a “carrot”. This implies that any incentives to open up data, for example, to improve public services, provide transparency and accountability over government, and to stimulate innovation in the private sector, have failed and a mandate is now required which obliges public sector

²¹ This legislation relates to the recasting of the European PSI directive to the ‘Open Data Directive’ which is expected to come into force in July 2021 and will enforce organisations to share open data.

organisations to make their data open by licence. Experienced open data practitioners in Scotland described a cultural issue whereby senior leaders are not ‘bought in’ to open data and are concerned by the resource and funding issues that would materialise if opening up data was a priority. It was generally agreed by members of the Scottish Cities Alliance – i.e., the main point of contact at each city who was consulted as part of the study – that demonstrating the value of open data within their own council would reposition the open data agenda and encourage senior leaders to attribute more funding and resource.

In short, for many councils, including some member cities of the Scottish Cities Alliance, open data is simply “not on the radar due to lack of resource and funding”. If it were embedded and seen as a valuable asset for local authorities, and the public sector more broadly, then more resourcing would be made available and, it is believed, that public sector open data could be rolled out and “exported” to the private sector and other sectors with greater ease.²² It is acknowledged that significant funding and resource has been committed at the front-end of the 8th City Programme to launch Phase 1 and 2. However, on a national level, fragmentation around open data in the public sector more broadly has contributed to different attitudes toward following up on the national Open Data Strategy 2015.

In the absence of a mandate, a shift in culture and attitude, achieved through demonstrating the value of open data, would encourage greater (cohesive) adoption and implementation of open data strategies.

This theme – level of government commitment – was the most common amongst the study participants and was considered to be the most important. Without greater commitment, the issues, challenges and barriers presented will not be overcome and open data will struggle to evolve and become widely adopted and valued.

“A mandate is required to publish open datasets / a ‘stick’ rather than a ‘carrot’”

“The challenge of open data at local government level is to do with culture / personality – there must be a shift towards a collective commitment to embedding open data as a ‘way of thinking’ if widespread adoption is to be achieved”

“It’s good to have e.g. Open Data and Digital Strategies, but these must be actionable and not just another paper exercise – actions must be carried out and achieved as a result”

“There is a lot of talk about open data, but very little support and actionable activity”

5.6 Fragmented Nature of the Data Cluster

The fragmented nature of the Data Cluster specifically relates to the members of the Scottish Cities Alliance data working group, but as previously alluded, this also extends more broadly to the public sector and the disparate and siloed ways of working which have inhibited the development of open data.

²² Quotes provided by someone who was instrumental in the setup of the digital strategy in 2014 and was a founding project manager of the Scottish Cities Alliance.

Some Scottish Cities Alliance representatives confirmed that a lack of resource has been a major issue and has slowed any progress on their open data strategies – this has led to some cities progressing to Phase 2 of the Data Cluster Workplan, whilst other cities continue to undertake legacy projects from Phase 1 or have paused their open data strategies altogether. One city member disclosed that they have “a resource issue” and that open data is in their Data Strategy, but only as an add-on and not as a priority. Another city member exclaimed that they have “no capacity” and they are concerned by what will happen when funding stops. Another echoed this and stated that “resource and costs are the biggest issues”, a consequence of the team consisting of two original members who have recently left – they also described how “capacity building” and employing a “dedicated officer” formed a key part of their Phase 2 plan.

Additionally, the COVID-19 pandemic has placed increased data pressures on many of the cities which has resulted in resource being diverted to address needs in this area. Moreover, some representatives explained how the cities have been working in siloes and not communicating effectively. This lack of communication and sharing of ideas has contributed to the fragmentation which is signified by the city councils developing their own policies and “doing their own thing” according to one council staff member consulted during the research, leading them to question: “how do we break down the communication siloes?”²³. The consequences of this are the limited roll-out of open data across Scotland’s cities; the inconsistencies between data that is published between the cities; and, ultimately, minimal uptake and adoption of open data by various sectors.

As with the theme above, a show of commitment and a willingness to work together would deliver solutions to some of the issues outlined in the preceding themes – discoverability, accessibility, standardisation – but this would require joined up thinking and a greater connection between the Scottish Cities Alliance members (and public sector organisations more broadly).

“We need to break down siloes [between local authorities] and communicate better to achieve our goals”

“There’s a clear disconnect between the councils in terms of sharing data – some have the appetite, others do not”

“Open data is a luxury – it’s just not a focus at the moment, and there is no funding so the portal is static”

6 Clarifications

The following points were raised during the project activities, by several participants who were seeking, anonymously, some clarifications. These are noted as follows:

- Role of Scottish Cities Alliance in the wider ecosystem

²³ Quotes provided by a staff member of a city council and city lead for the Scottish Cities Alliance / Data Cluster.

There was some confusion over the role and position of Scottish Cities Alliance in both the open data and the public sector ecosystem and its connection/relationship to, for example, local authorities out with the Scottish Cities Alliance, the Improvement Service and Scottish Government.

- Synergy with existing open data activities in Scotland

There was concern over the alignment and synergy between the work of the Scottish Cities Alliance and, for example, Scottish Government's activities on data standards.

- Scottish Government's commitment to open data

As explained in section 5, broader concerns were raised over the level of commitment to open data in Scotland. Concern was expressed that there is a need for guidance and action rather than strategy development.

- EU Directive and Scottish Government commitment

As outlined in section 5, there is a suggestion that legislation is needed to progress open data in Scotland. There was a specific query relating to whether Scottish Government would implement the new European Legislation on Open Data²⁴.

7 Action Plan

The action plan (illustrated in Figure 19) has been devised based on the analysis of feedback (section 5 of the report). It is our belief, based on the study findings, that there is a need to undertake internal actions before engaging with the Open Data User Group. This will ensure that there is a clear and consistent approach to open data that not only aligns with the Phase 2 plans (Data Cluster Workplan²⁵) but that also concurs with policies and initiatives from stakeholders within the wider ecosystem including, for example, Scottish Government, the Innovation Centres and the Improvement Service; thus, resulting in a joined-up approach.

The proposed plan has been developed bearing in mind the resource and funding constraints of the Scottish Cities Alliance and the individual cities. Therefore, we believe the plan will enable a pragmatic approach to be adopted to further develop the open data ambitions of the Scottish Cities Alliance (and the data working group) and enable continue engagement with the Open Data User Group developed as part of this study.

²⁴ <https://digital-strategy.ec.europa.eu/en/policies/legislation-open-data>

²⁵ Document shared by Doug Young (Dundee City Council) outlining Phase 2 plans entitled Data Cluster Workplan – update 11-20 WIP

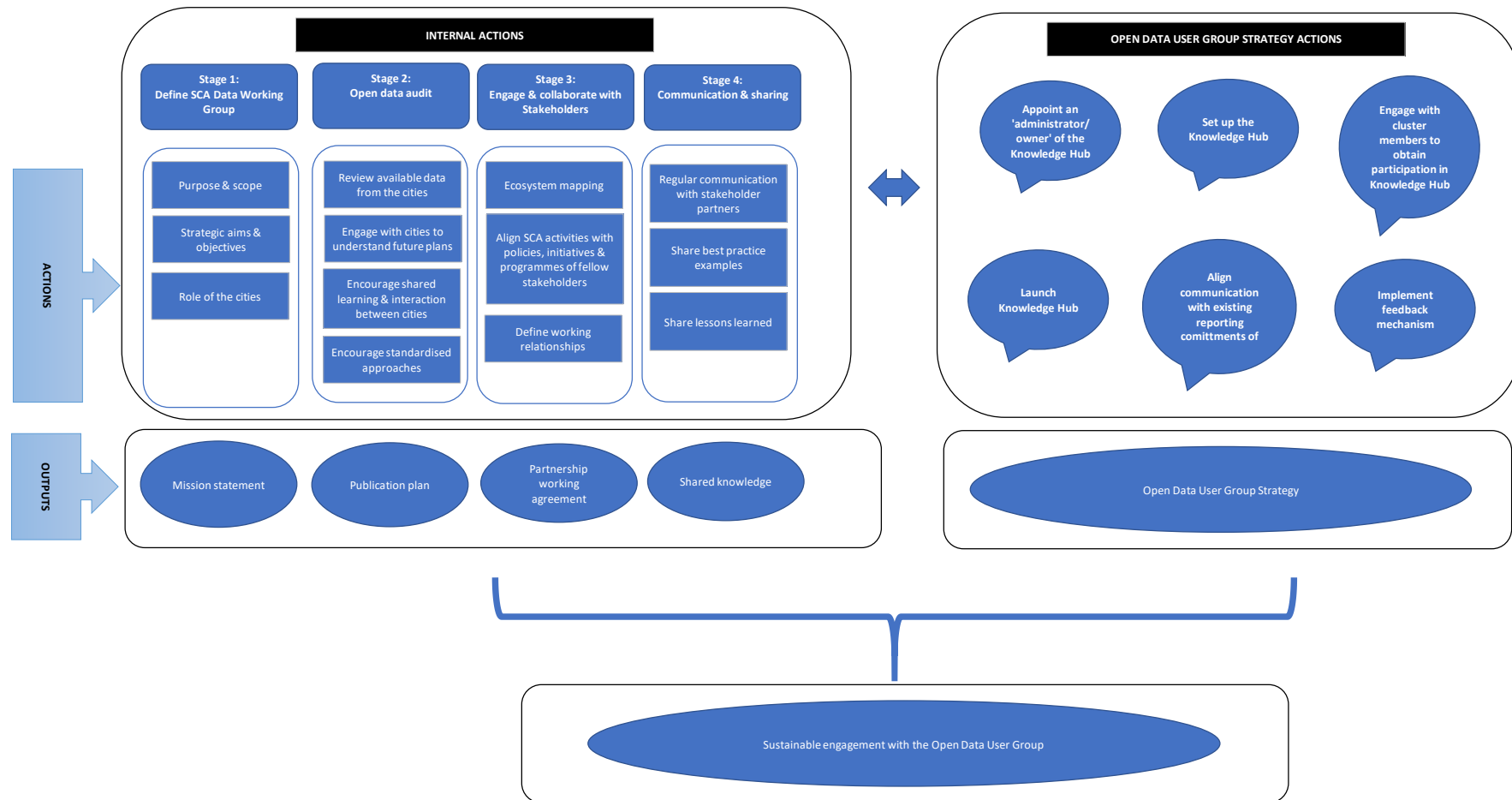


Figure 19: Action Plan and Strategy

7.1 Internal Action Plan

We have developed the following internal Action Plan which will enable the Scottish Cities Alliance to address the concerns raised during the review, namely, fragmentation within the Data Cluster, commitment of the cities and purpose and alignment of the data working group within the wider ecosystem. The Action Plan outlined below will also provide an opportunity for the Scottish Cities Alliance to go back to basics and revisit the aims and objectives of the Data Cluster.

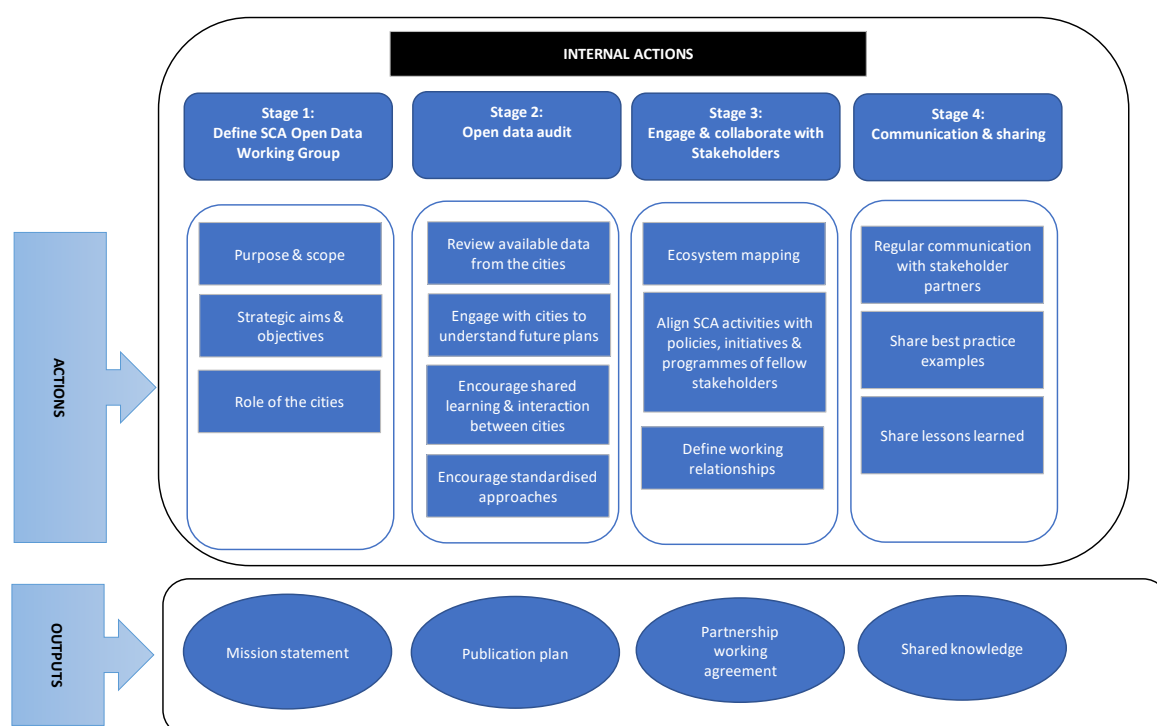


Figure 20: Internal Actions

The internal Action Plan has four key stages which have been discussed and validated with study participants, the project manager Doug Young (from Dundee City Council) and representatives of Scottish Government. Each stage is summarised below.

7.1.1 Stage 1: Define Scottish Cities Alliance Data Working Group

This stage comprises three activities, which seek to define:

1. The purpose and scope of the data working group
2. The strategic aims and objectives of the data working group
3. The roles of the cities within the data group

These activities will enable the Scottish Cities Alliance to revisit the original aims and objectives of the Data Cluster and adjust them accordingly based on the feedback from the study and the development of Phase 2 plans (Data Cluster Workplan). The output of which will be a mission statement that clearly outlines what the Scottish Cities Alliance data group is, what its overall goal is and what kind of

product/service it provides and how the Open Data User Group can support the achievement of these objectives.

7.1.2 Stage 2: Open Data Audit

This stage comprises four activities, as follows:

1. Review the available data from the cities
2. Engage with the cities to understand future plans
3. Encourage shared learning and interaction between the cities
4. Encourage a standardised approach to data set production

This stage will enable the Scottish Cities Alliance to get a holistic understanding of the datasets available from the cities, which will inform the Open Data Publication Plan (the output of this stage) but can also form the basis of an initial engagement with the Open Data User Group, as providing an overview of what is available (and from which city) would be of great interest and value to the user group as this would directly address the discoverability challenge. Additionally, engaging with the cities to understand their future plans will ensure that there is open communication between the Scottish Cities Alliance and the cities themselves; again, these plans alongside promotion of the city platforms and use cases can be shared with the Open Data User Group to keep them abreast of developments and to demonstrate commitment and activity to advance open data availability. Similarly, encouraging interaction and engagement between Scottish Cities Alliance members will avoid the notion of fragmentation that is currently being expressed. This openness and engagement between Scottish Cities Alliance members is also an opportunity to share best practice and lessons learned which is an invaluable asset to those cities that are perhaps less advanced in their open data journey. Likewise, working together will enable a more standardised approach to the development of data sets; thus, addressing the interoperability challenge that was highlighted during the study. It is worth noting, however, that datasets that come under the 8th City Programme's remit are currently covered by an internal quarterly reporting cycle to the Data Cluster Steering Group, with opportunities for further discussion on the planned publication of data sets, including those linked to other projects across the 8th City programme. This reporting should, therefore, feed into and inform the open data audit.

This phase also aligns with the Data Cluster Workplan; namely, work package 2 – “Publication and Discoverability activity to develop a long-term strategy for data publication based on interviews with each of the cities for approval by the Data Cluster Working/Steering Group or 8th City Advisory Group”.

7.1.3 Stage 3: Engage and Collaborate with Stakeholders

This phase comprises three main activities, as follows:

1. Undertake ecosystem mapping
2. Align activities with initiatives, policies and programmes of fellow stakeholders within the ecosystem
3. Define working relationships

The purpose of this phase is to address the concerns raised relating to the fragmented and siloed nature of data within Scotland. By undertaking an ecosystem mapping exercise, the Scottish Cities Alliance will be able to define its position and role within the ecosystem and identify potential collaborators, which is likely to include many of the network of network partners outlined in Figure 1. This activity aligns with work package 4 - Community and Capacity Building within the Data Cluster Workplan. Similarly, by

aligning the work of the data working group with activities of stakeholders within the ecosystem such as, for example, the data standards work by the Scottish Government, it ensures a joined-up approach to open data in Scotland. This is also reflected in the Data Cluster Workplan – work package 1 - “Cluster to ensure that all Phase 2 work is aligned with outputs of the Scottish Government’s Data Standards team including implementation of the Core Public Sector Vocabulary”. By completing the ecosystem mapping and identifying potential collaborators there is an opportunity to develop working relationships or memorandums of understanding (MoU); thus, building on the MoU established with, for example, CENSIS, which again reinforces commitment and a joined-up approach to enabling and advancing open data in Scotland.

7.1.4 Stage 4: Communication & Sharing

This phase builds on the collaborations identified in Stage 3, and encompasses the following activities:

1. Establishing regular communication with stakeholder partners
2. Sharing best practice
3. Sharing lessons learned

The purpose of this phase is to address the challenges associated with the fragmented, siloed, and disjointed nature of open data in Scotland. Closer engagement and collaboration will also support discoverability, accessibility and standardisation as stakeholder partners will be abreast of activities within the ecosystem and can plan and develop future work plans, initiatives and programmes that are cognisant of existing datasets and activities as well as cross-post within their own respective networks; thus, ensuring wider dissemination of activities within the ecosystem.

The sharing of best practice and lessons learned will not only be invaluable to the ecosystem partners and address the concerns of commitment and fragmentation but will also align with the development of Scottish Government’s Community of Practice. There is also an opportunity to feed into the work currently being undertaken by the Scottish Government’s Digital Office to develop a Data Playbook. For example, a blueprint could be developed that outlines the best practice approaches from, for example, cities such as Glasgow. This would be a valuable resource for other local authorities as it could outline the process undertaken by Glasgow City Council in developing its new open data portal and provide a step-by-step guide towards achieving open data success.

The activities in this stage also align with work package 4 - Communication and Capacity Building set out in the Data Workplan.

7.2 Open Data User Group Strategy Actions

As well as the internal actions outlined above, there are also several actions that must be set in motion to enable the realisation of sustainable engagement with the Open Data User Group that has been established as part of this study.

The Open Data User Group is currently hosted in LinkedIn, but this was set up purely for the purposes of the study. Therefore, and as discussed earlier in section 4.1.3, it was agreed at the Open Data Workshop (held in May 2021) that the preferred platform to host the group beyond the study was Knowledge Hub. The actions outlined below directly relate to the establishment of the Open Data User Group on Knowledge Hub and the ongoing engagement with the group.

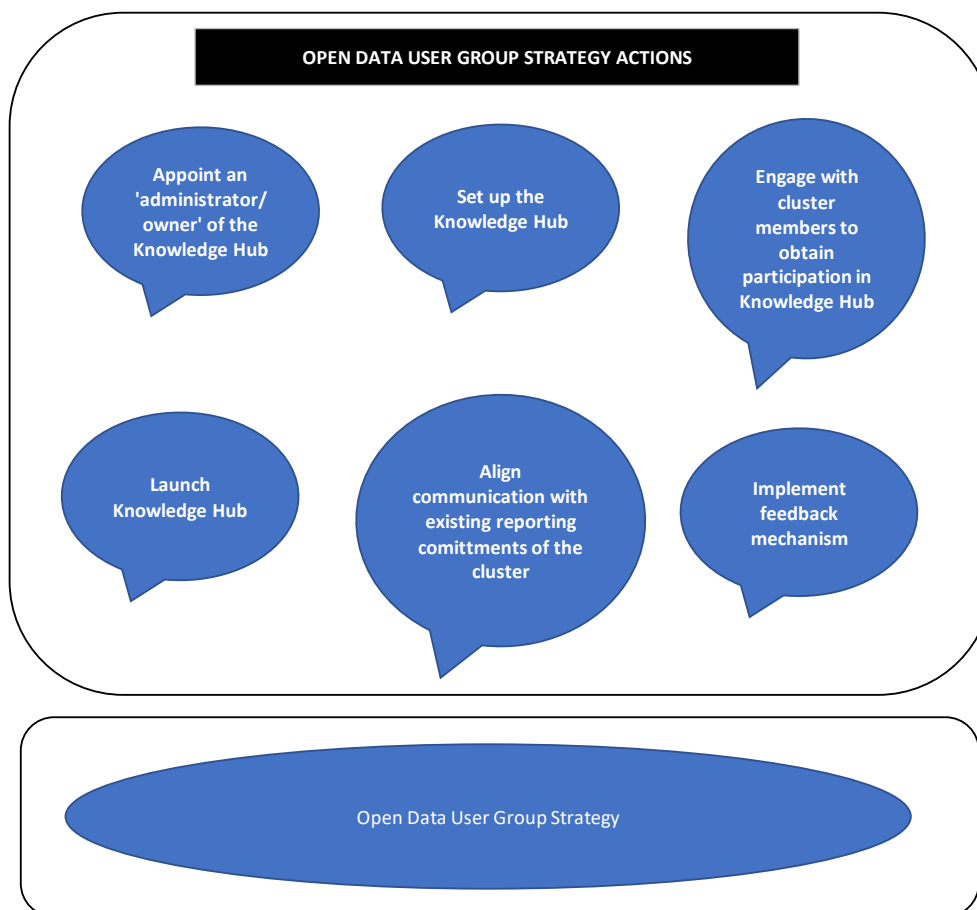


Figure 21: Open Data User Group Strategy Actions

7.2.1 Appoint an Administrator/Owner of the Open Data User Group

Internally it will be important to appoint an administrator or owner of the Open Data User Group, as it will be essential that one person can take ownership of the group and maintain the group on Knowledge Hub.

It is our understanding that in the short-term this role may be shared by Doug Young, of Dundee City Council, and another selected member of the Data Cluster Working Group. In the longer-term this will be reviewed by the Data Cluster Working Group and the Scottish Cities Alliance and amended accordingly.

7.2.2 Set up the Knowledge Hub

The administrator/owner of the Open Data User Group will be responsible for setting up the group on Knowledge Hub.

Knowledge Hub affords different types of groups including:

- **Open Group** - FREE to create for public and not for profit sectors

All registered members of the Knowledge Hub may join the group.

The group details and its content are searchable and viewable by all members of the Knowledge Hub.

- **Restricted Groups** - FREE to create for public and not for profit sectors

Only members approved by the group administrators may join.

The group details are searchable and viewable by all members of the Knowledge Hub.

- **Private groups**

Only those invited by the group administrators may join.

The group and its content are not visible or findable on the Knowledge Hub.

There is an annual fee for a private group.

We would recommend that a Restricted Group would be the most suitable group type as this will enable the Scottish Cities Alliance to control membership.

The administrator/owner will be responsible for creating the dedicated space for the user group which may include, for example:

- Homepage – outlining the purpose and aims of the group
- Forum – to enable members of the user group to interact and raise points for discussion
- Library – to enable documents and files to be shared. For example, this may include strategy documents, the Open Data Publication Plan and such like.
- Members – directory of members which will support interaction and engagement between members as they will be able to see a list of peers involved in the user group
- Announcement and messages – this could be used to facilitate announcements regarding new datasets and could also be the feedback mechanism to enable users to send a message with data feedback to the group administrator which can then be relayed to the relevant city.

7.2.3 Engage With Cluster Members to Obtain Participation in the Knowledge Hub

Based on the findings of the study and the involvement of city representatives in the LinkedIn group it is apparent that there is fragmentation within the Scottish Cities Alliance data working group and members are involved in the group to different degrees. It will be essential to obtain their 'buy-in' and participation to the Knowledge Hub to ensure consistency; otherwise, this too has the potential to appear fragmented to the user group members which will simply reinforce the concerns raised during the study.

This will involve agreeing roles and responsibilities of the group members. It will be essential that each city has a representative that can take responsibility for engaging with the Open Data User Group on the Knowledge Hub and provide regular updates on activities and dataset availability. This must, however, be pragmatic; therefore, it is suggested that these updates could be quarterly and align with existing reporting requirements (as explained below in section 7.2.5).

7.2.4 Launch the Knowledge Hub

Upon completion of the set-up it will be essential to launch the Open Data User Group on Knowledge Hub. Given that it is likely that a significant period of time will have passed since the members attended the workshop and/or received an update on LinkedIn we suggest that a final mailer is disseminated from Optimat to 'launch' the Knowledge Hub Open Data User Group and make members aware that the new space is live. In addition, a LinkedIn post will be shared announcing the new space and providing the necessary details and links. The launch should, however, also be supported by the Scottish Cities Alliance marketing team to promote the new group across its social channels.

7.2.5 Align Communication With Existing Reporting Requirements

We appreciate that a pragmatic approach is critical to ensuring a balance is achieved between the day-to-day data responsibilities of the cities and engagement with the Open Data User Group. With this in mind, we would recommend that communication with the user group is aligned to existing reporting requirements. For example, it is our understanding that alliance members currently provide a quarterly publicity update as well as reporting requirements as part of the 8th City Programme and the ERDF funding. These reporting requirements could, therefore, also act as a trigger to provide an update to the user group on the latest datasets available and/or news of forthcoming datasets as well as respond to user feedback.

7.2.6 Implement a Feedback Mechanism

Given the functionality afforded by Knowledge Hub, it would be our recommendation that the announcements and messages function is activated to enable Open Data User Group members to provide feedback on their experiences of working with the open datasets and to make suggestions and recommendations to the cities of, for example, improvements or additional datasets that would be of value. This feedback mechanism will allow a cycle of communication between city representatives and users based on a combination of the quarterly reporting and announcement and message functionality, as explained in section 7.2.5.

7.3 Sustainable Engagement With the Open Data User Group

As indicated previously, we are appreciative of the funding and resource constraints faced by the cities and have developed the Action Plan bearing in mind both this and the feedback from the study participants.

It is our belief that the combination of internal actions (Figure 20) and Open Data User Group strategy actions (Figure 21) will enable the Scottish Cities Alliance to address the feedback concerns raised (described in section 5) and achieve sustainable engagement with the Open Data User Group that has been established as a result of this study. This will, however, require continued effort and resource as reflected in the actions.

8 Conclusions and Recommendations

Based on the analysis conducted in this study we conclude that there is an appetite for access to open datasets in Scotland and a desire to be part of an Open Data User Group. However, a disconnect exists between private and public sector attitudes and access/availability to data. For example, research

indicates that open data remains a relatively untapped resource and more work is needed to support SMEs to realise the benefits it can bring to drive business innovation^{26, 27, 28}. Additionally, this ties into the primary outputs of all 8th City Projects, specifically the requirement of each project to produce a number of “Datasets Opened for Innovation”.

Feedback from the Open Data User Group members throughout the consultation study, including private, public, academic and third sectors, confirms the need to overcome several challenges and barriers to enable the potential of open data to be realised. These challenges relate to:

- Discoverability
- Accessibility
- Standardisation
- Skills
- Level of commitment
- Fragmented nature of the Data Cluster

There is also an opportunity for the Data Cluster, in partnership with stakeholder partners, to address the challenges identified via the proposed Action Plan. The Action Plan will enable the Data Cluster to undertake some housekeeping whilst addressing many of the challenges identified within the study and by working closely with fellow stakeholders in the ecosystem it can open up access to data and achieve the open data ambitions set out in the 2021 Digital Strategy – ‘A Changing Nation: how Scotland will thrive in a digital world’.

²⁶ https://data.europa.eu/sites/default/files/edp_creating_value_through_open_data_0.pdf

²⁷ <https://medium.com/@stateofopendata/open-data-stakeholder-groups-f3ffd5633101>

²⁸ <https://www.digitalsme.eu/data-economy-open-data-market-unleashing-untapped-potential-smes/>

Appendix A: Database of Contacts

Database of Contacts - all organisations contacted as part of the study
A2B maps
Aberdeen City Council
Abertay University
Advisor / Consultant
Aeon Geoscience Systems
Agri-Epicentre
Ajenta
Astun Technology
Atkins
Bayes Centre, University of Edinburgh
Bell Ingram
Bird.i
BJSS
Brainnwave
Cadcorp
Caledonian Air Surveys Limited
Caledonian MacBrayne
Cawdor Forestry Ltd
CENSIS
Centre of Health Data Science, University of Aberdeen
Chordant
Cisco
CityFibre
CodeClan
Codethecity
Colin Balfour Consulting
Construction Scotland Innovation Centre
Consultant
Creative Scotland
Crown Estates Scotland
Cycling Scotland
Dan Cookson Research
Data Pepper
Data-Driven Innovation (DDI), University of Edinburgh
D-CAT
DDK Positioning
Digital Health Institute
DirectID
Dundee City Council

DXC Technology
Ecometrica
EDINA
Edinburgh City Council
Edinburgh Innovations, University of Edinburgh
Edinburgh Living Lab
Education Scotland
Effini
Esri UK Ltd
FinTech Scotland
First Port
Food and Drink Federation Scotland
Forest Research
Forestry & Land Scotland
Freelance Programme Consultant
Fujitsu
Genesis Oil and Gas Consultants Ltd
GEOLYTIX
Glasgow City Council
Global Open Finance Centre of Excellence, Data Driven Innovation (DDI)
Health & Social Care Alliance
HERE Technologies
Historic Environment Scotland
IbioC
Illuminate Technologies
Improvement Service
Information Services Group, University of Edinburgh
InGAME
Interface
Jacobs
James Hutton Institute
JNCC
Kippitech
LetsJoin
Lloyds Register
Medicines Manufacturing Innovation Centre
National HVDC Centre
NESTA Scotland
Nevis Environmental Ltd
NFUS
NHS National Services
NMIS
North - previously Boston Networks
Obashi
Oil & Gas Innovation Centre

Open Transport Scotland
Perth and Kinross Council
Precision Medicine Scotland
Public Wireless
Quality Meat Scotland
Red Hat
Regulation Technologies
Resource Efficient Solutions LLP
Robert Gordon University
RuralDimensions
Rusalco Solutions
SABRE Advanced 3D
SAS R&D Scotland
Scotch Whisky Association
Scotland 5G Centre
Scotland Food & Drink
ScotlandIS
Scottish Aquaculture Innovation Centre (SAIC)
Scottish Dairy Hub
Scottish Energy Centre
Scottish Food Trade Association
Scottish Futures Trust
Scottish Government
Scottish Prison Service
Scottish Qualifications Authority
Scottish Salmon Producers Organisation
Scottish Tourism Alliance
Scottish Whisky Research Institute
Seafood Scotland
SeeSubsea
SEPA
SICSA
Skills Development Scotland
SMART AIS
SoXSA
Space Flow Ltd
Stirling Council
Strathclyde Partnership for Transport
SUSTrans Scotland
TDL
Technology Scotland
The Highland Council (Inverness)
thinkWhere Ltd
Transport Scotland
University of Aberdeen

University of Edinburgh
University of Highlands & Islands
University of Strathclyde
UrbanTide
Usher Institute, University of Edinburgh
Visit Scotland
VKY Intelligent Automation
Wyvis Internet
Zero Waste Scotland

Appendix B: Members of the Open Data User Group

Members of the Open Data User Group
Aberdeen City Council
Advisor / Consultant
Aeon Geoscience Systems
Angus Council
Astun Technology
Atkins
Bayes Centre, University of Edinburgh
Bell Ingram
Bellrock Technology
Brainnwave
British Geological Survey
Capital City Partnerships
Cawdor Forestry Ltd
Centre of Health Data Science, University of Aberdeen
Chordant
Cisco
Codethecity
Colin Balfour Consulting
Construction Scotland Innovation Centre
Consultant
Crown Estates Scotland
Cycling Scotland
Data Driven Innovation (DDI), University of Edinburgh
Data Pepper
Data-Driven Innovation (DDI), University of Edinburgh
DirectID
Dundee City Council
DXC Technology
Ecometrica
Edinburgh City Council
Edinburgh Innovations, University of Edinburgh
Effini
Esri UK Ltd
Falkirk Council
Fife Council
Filament
First Port
Forest Research
Forestry & Land Scotland
Freelance Programme Consultant
Gaist
Genesis Oil and Gas Consultants Ltd

GEOLYTIX
Glasgow City Council
Global Open Finance Centre of Excellence, Data Driven Innovation (DDI)
Health & Social Care Alliance
HERE Technologies
Historic Environment Scotland
IbioIC
Illuminate Technologies
Improvement Service
Inbest
inChat.design
Information Services Group, University of Edinburgh
InGAME
Interface
Jacobs
James Hutton Institute
Joint Nature Conservation Committee (JNNC)
Metro Dynamics
National Records of Scotland
NatureScot
NFUS
Obashi
Open Transport Scotland
Ordnance Survey
Perth and Kinross Council
Public Health Scotland
Registers of Scotland
Regulation Technologies
Ricardo Energy & Environment
Rusalco Solutions
SAFER
ScotlandIS
Scottish Accessible Transport Alliance
Scottish Cities Alliance
Scottish Dairy Hub
Scottish Enterprise
Scottish Food Trade Association
Scottish Government
Scottish Tourism Alliance
Scottish Whisky Research Institute
SeeSubsea
Shetland Islands Council
Skills Development Scotland
Stagecoach
Stirling Council

SUSTrans Scotland
Swirrl IT Limited
TDL
Technology Scotland
thinkWhere Ltd
Transport Scotland
University of Edinburgh
UrbanTide
Usher Institute, University of Edinburgh

Appendix C: Workshop Attendees

Open Data Workshop - attendees
Angus Council
Bell Ingram LLP
British Geological Survey
Capital City Partnership
Code The City
Crown Estate Scotland
CSIC
Data Pepper Limited
DirectID
Dundee City Council (3 delegates)
Fife Council
Forestry and Land Scotland
Gaist
Glasgow City Council
Global Open Finance Centre of Excellence (GOFCoE)
Historic Environment Scotland
Improvement service (2 delegates)
Jacobs
National Records of Scotland
NatureScot (2 delegates)
Ordnance Survey
Perth and Kinross Council
Public Health Scotland
Registers of Scotland (3 delegates)
Rixson Enterprises
Scottish Dairy Hub
Scottish Government (11 delegates)
Shetland Islands Council
Stagecoach
Stirling Council
Swirrl IT Limited
Technology Scotland
The Open Transport Initiative
Transport Scotland (3 delegates)
University of Edinburgh (3 delegates)

Appendix D: Workshop Chat Analysis – Thematic Matrix

Theme	Sub-theme	Evidence / Quotes
Discoverability	Range & volume of portals / websites	<ul style="list-style-type: none"> - "a proliferation of data portal / websites / pages describing 'the same thing' seems to make users' life harder and can push things down the search rankings." - "Research into how many users actually use national (or other) Open Data Portals"
	Search / finding portals	<ul style="list-style-type: none"> - "Most of our [Improvement Service / SSDI] data enquiries come from google searches (helps that SSDI and data.gov.uk are search engine optimised)" - "Our user research [Ordnance Survey] last year into how people find data came up with a clear answer: 'Google'."
Accessibility	Range & volume of portals / websites	<ul style="list-style-type: none"> - "It would be good to do some research to see how many countries do not have a national Open Data Portal" - "Why does Scotland have 'a number' of open data portals? Surely we should seek to federate these – at least – if not concatenate them into a national open data portal." - "34 local government portal is perhaps a 'cost' that could be better met through a nationally-provisioned, locally experienced service" - "In Aug 2020 I counted circa 50 Open Data 'portal' or other publishing efforts of the public sector in Scotland"
	Technical accessibility	<ul style="list-style-type: none"> - "Catalogues of human-readable open & shared data sources (like Google) are one thing. Machine-readable directories (like the Internet Domain name system – DNS) of the trusted / original data sources are required too" - "Visualisation of the data helps to tell the story [and ensure the masses can access and appreciate the value of open data] – that everyone can grasp without being blinded by science!"
Standardisation	Range & volume of standards	<ul style="list-style-type: none"> - "So many standards!" - "There are at least half a dozen other open standards for similar interactions, each with their own strengths & weaknesses."
	Commitment to evolving standards	<ul style="list-style-type: none"> - "There's been significant work on Smart City data standards already done by BSI and others – PAS180, PAS182 & PAS183 contain a large amount of standard work"
Skills	Complex user experience	<ul style="list-style-type: none"> - "Who is the target audience of statistics.gov.scot? I've tried using it to find/access data and find it almost impossible to access what I need (e.g., a list of schools with their seed codes). In my view it's way too complicated for most people unless you can write SPARQL queries"

		<ul style="list-style-type: none"> - "Think we need to bear in mind that most web content should be accessible, understandable and usable to a 9–11-year-old"
Commitment	Resourcing and funding constraints	<ul style="list-style-type: none"> - "We've built a data portal for whole of local gov to collect, amalgamate, transform, standardise, improve and share local gov datasets https://www.spatialhub.scot/get-data/. Several of them are totally open but we are still trying to find a sustainable funding solution to keep the service running year on year - hence restricting access to most of the current 43 datasets" - "Resourcing and importance placed upon [open data] (i.e., governance) is the key thing"
	Policy / legislation / mandate	<ul style="list-style-type: none"> - "The gulf between what was promised by SG's OD strategy (i.e., 'open data by default') is huge" - "[open data] needs a legal direction to enforce its application"
	Culture / importance of open data	<ul style="list-style-type: none"> - "Nothing to stop cities publishing their data openly, even if the SSDi does not" - "Other cities have squandered a decade with little to show for it" - "How do we persuade the masses in senior roles to embrace and then lead on the development of an (open) data revolution?" - "You can trace governance all the way back up the trail to those folk that set the policies (without a thought for good data requirements)" - "[On SCA vision] Create compelling use cases for the adoption of Open Data as a method for improving internal operations with the Alliance cities, as well as for their cross-Alliance work and work with partner organisations (reduce cost of operations)"
Fragmentation	Range & volume of initiatives	<ul style="list-style-type: none"> - "So many (UK) government initiatives about making different subsets of data easier to find – energy data, land & planning data, transport data, spatial data, open data...!"
	Disparate / siloed ways of working	<ul style="list-style-type: none"> - "Some LAs (and other public sector organisations) have done some really great work on open data, and others have done nothing at all. How do we avoid a "them and us" in terms of access to good quality data and bring everyone along? Extra funding/resource/software etc?" - "[Regarding SCA Vision] Consistent, Alliance-wide data-sets available for comparative as well as individual analysis, in support of local and national outcomes" - "Can I strongly recommend that we don't just work across one sector (e.g., Government / Cities) – but that we also invite collaboration across wider industry? Such as: energy, healthcare, emergency services, transport & mobility, etc."



Business
Growth

Economic
Development

Technology
Commercialisation

Head Office:

Optimat Limited
Torus Building, Rankine Avenue,
Scottish Enterprise Technology Park,
East Kilbride
G75 0QF, United Kingdom

Tel: +44 (0)1355 272 800

Email: resource@optimat.co.uk

Web: www.optimat.co.uk