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Foreword

Jil Matheson,
National Statistician

This Web dissemination strategy builds on my Statistics Matter statement issued at the start of 2010, in which I identified the accessibility of statistics as one of my key priorities. It sets out what I believe the GSS should be doing to improve its use of the Web and associated technologies in disseminating official statistics and stresses the need to help our users find official statistics more easily and in a form which they can then use for their wide variety of purposes.

At a time of ever increasing transparency I am seeing many excellent examples of dissemination practice across official statistics, both in the UK and internationally. Whilst we are all facing resource pressures, I believe there is much we can do, not least through increasing our own awareness and by better sharing of knowledge and expertise.

I would like to thank all who have been involved in developing this strategy over recent months and I hope you are all able to play your part in taking the important steps needed to make official statistics dissemination fit for the modern world.

A handwritten signature in black ink that reads "Jil Matheson". The signature is written in a cursive, slightly slanted style.

July 2011

1. Summary

- 1.1. Constant growth in the development and use of the Web and associated technology has changed the way that users expect to gain access to official statistics and data. Whilst there are some excellent examples of practice in disseminating those statistics, others remain frustratingly hard for users to find and use.
- 1.2. This creates significant opportunities and challenges for producers of official statistics at a time of resource constraints. However, as an essential source of high quality, reliable information about the UK, it is critical that official statistics producers help users to find the information they need, and in the form that they need it.
- 1.3. This strategy is aimed predominantly at those within the official statistics producer community. It sets a vision for official statistics Web dissemination and outlines the short- and medium-term steps needed to help serve users more effectively. Given existing good practice, the focus is not to encourage the development of expensive cutting edge technology. Instead it is to raise understanding and awareness of what others are doing, such that producers can then take small but important steps toward improving official statistics dissemination.
- 1.4. Of course, there are some important strategic choices too. For example, given the drive for transparency and the role of data.gov.uk we consider the relationship between the Publication Hub and data.gov.uk. We also consider whether the Publication Hub, as a window to National statistics, should continue and whether it should be broadened to capture links to all official statistics and also provide links to data.
- 1.5. The need for more consistency in data formats and standards is also discussed and examples of dissemination practices outside of government and internationally are considered. A view is also taken on the potential benefits of increased partnership working and the opportunities that exist around the use of social and portable media.
- 1.6. We conclude that:
 - The Publication Hub is essential in providing a single access point to all National Statistics and should be broadened to capture links to all official statistics and supporting data.
 - The link between data.gov.uk and the Publication Hub is critical.
 - There should be greater understanding and use of common formats and data standards in response to the drive for transparency and user need.
 - Official statistics producers should be better at sharing experiences and in considering the use of partnerships.
 - Social and portable media use should be considered and used, where appropriate, to raise awareness and increase access to official statistics.
 - The skill levels and awareness of official statistics producers needs to be targeted in areas such as writing for the web.

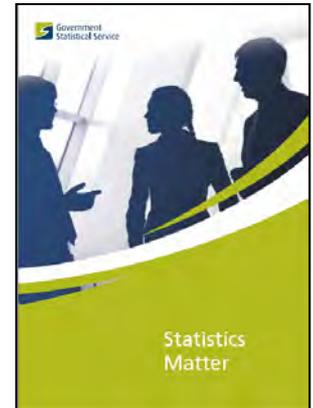
1.7. For those already at the forefront of dissemination practice, this strategy should contain little by way of surprise. For others, even taking some of the small steps will pose a significant challenge. However, at the heart of the strategy is the need to serve users in the most effective and transparent way possible.

1.8. In short, the strategy urges official statistics producers to

Achieve the widest possible dissemination and use of official statistics and data by better utilising the Web and associated technologies and by adopting consistent data and metadata formats and standards.

2. Introduction

- 2.1. Official statistics¹ are a key source of high quality and trustworthy information about the UK today. As users' experiences and expectations of technology increase, producers of official statistics need to innovate and share good practice to maximise the impact and use of their statistics. *Statistics Matter*², the National Statistician's vision for the Government Statistical Service (GSS), highlighted the 'need to ensure that UK statistics are well explained and easily available to all who need them.'
- 2.2. The UK's decentralised approach to the production of official statistics currently results in information being disseminated to users via a large number of disparate departmental and specialist websites in a wide variety of forms. This can lead to the user experience being one of confusion and frustration when looking for the statistics they require, particularly when searching for the first time. This is even the case when using advanced search engines such as Google, which can produce millions of results, few of which will relate to the official statistics themselves. Many websites do, however, provide examples of good dissemination practice, such as online tabulation tools and metadata.
- 2.3. Even in cases where official statistics are easy to locate, they are not always in the format required by the user, for example, many are still contained within static tables in PDF documents, making extraction and reuse difficult for users.
- 2.4. Attempts to improve visibility and accessibility through the Publication Hub³ have been successful in providing a gateway to official statistics, i.e. links to the relevant pages on departmental sites. But the Publication Hub does not contain direct links to the published aggregate datasets and, according to the consultation which informed this strategy, is not users' preferred means of finding official statistics. In practice, users tend to use search engines such as Google.
- 2.5. A more detailed analysis of current practice in the dissemination of official statistics can be found in **Annex A** (statistical producer consultation).
- 2.6. This paper proposes a strategy for use of the Web and associated technologies in the dissemination of official statistics up to 2014/15. This is to ensure the widest possible dissemination and use of official statistics and data, to support decision making and debate, by better utilising the Web and associated technologies.



¹ Throughout this strategy, we will refer to 'official statistics' as defined in the Statistics and Registration Service Act, 2007: <http://unstats.un.org/unsd/dnss/docViewer.aspx?docID=2517>.

The National Statistician's guidance on identifying official statistics can be found here: <http://www.statisticsauthority.gov.uk/national-statistician/ns-reports--reviews-and-guidance/national-statistician-s-guidance/identifying-official-statistics.pdf>

² Statistics Matter: <http://www.statisticsauthority.gov.uk/national-statistician/ns-reports--reviews-and-guidance/national-statistician-s-guidance/statistics-matter.pdf>

³ Publication Hub: <http://www.statistics.gov.uk/hub/index.html>

- 2.7. With the wealth of outputs, there will not be a 'one size fits all' solution. This strategy discusses some of the many possibilities available so that we may consider the most appropriate dissemination method to suit the statistical output and the user need. In addition to considering the most appropriate method, it is also essential to monitor and evaluate the chosen method to ensure that it remains the correct choice in the future.
- 2.8. Of course, with the public sector facing widespread budgetary constraints, there are reduced resources with which to provide services. Whilst some of the recommendations proposed in this strategy will require additional resource, many will support streamlined processes and efficiencies. This strategy does not call for considerable investment, but instead seeks to share good practice in order to raise standards at minimal cost.
- 2.9. Many of the ideas discussed here can also support other stages in the production of official statistics, such as data collection, user engagement and feedback. This strategy, however, focuses on how the Web and associated technologies should be used to make official statistics more available and accessible to users.
- 2.10. This strategy:
 - explores the use of the Web and associated technologies in the dissemination of official statistics,
 - discusses the drivers for change,
 - examines current use of the Web and associated technologies by official statistics producers and others,
 - outlines options for the way forward,
 - makes recommendations for which direction should be taken and how to begin.

3. Data Framework

- 3.1. When referring to official statistics and the data used to create them, there are many definitions of the word 'data'. These can include; summary statistics; static aggregate data tables presented in documents or on webpages; user-definable aggregate data or 'data cubes'; and microdata.
- 3.2. With differing levels of data, there are different uses and users of those data. Summary statistics enable quick and easy understanding of the main messages and trends of a dataset and can paint an overall picture of those data. Static aggregate data tables presented in documents or on webpages can be used to show main data trends and interactions in datasets and can support messages or conclusions in the related commentary. User-definable aggregate data or 'data cubes' are extremely useful in allowing a user to create their own data tables based on variables of interest. This can aid further study or investigation. Microdata are used primarily by Government and academia to support detailed analysis, as a framework for further research, and for longitudinal studies.
- 3.3. Access to microdata is currently provided by facilities such as the UK Data Archive⁴, the Virtual Microdata Laboratory (VML)⁵ and the Secure Data Service (SDS)⁶.

⁴ UK Data Archive: <http://www.data-archive.ac.uk>

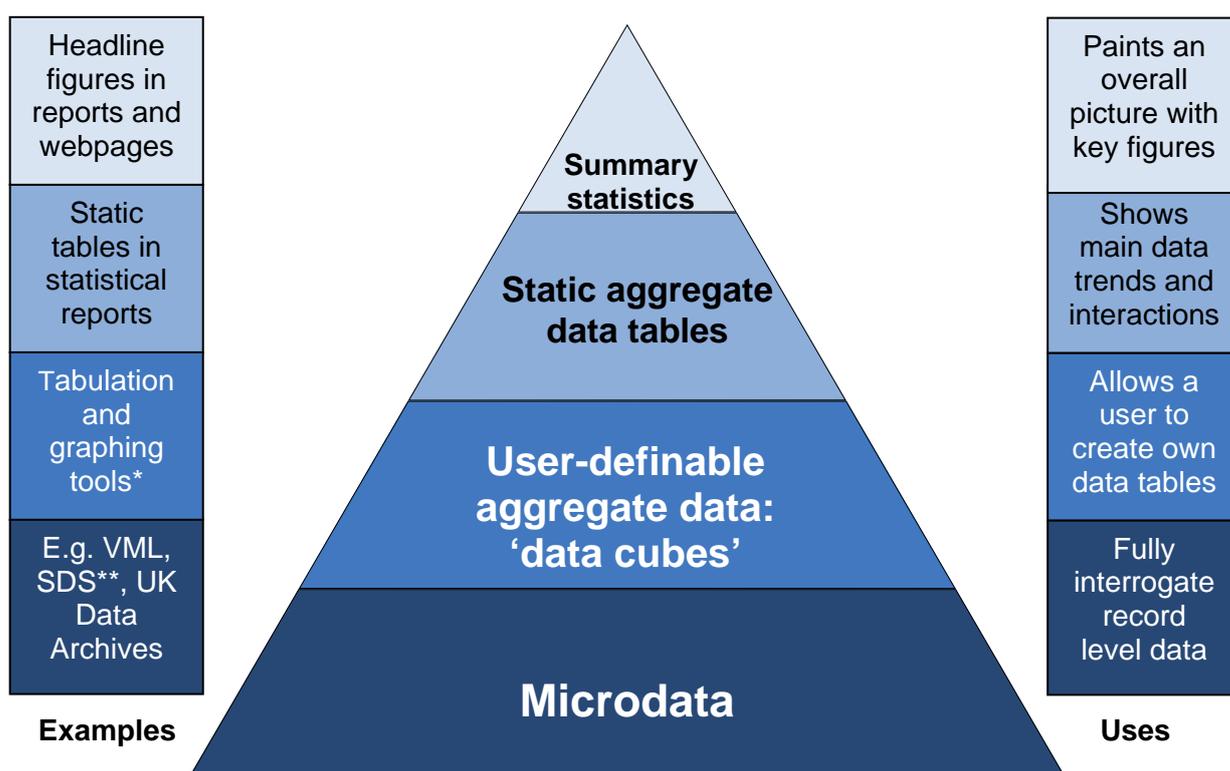
⁵ Virtual Microdata Laboratory: <http://www.ons.gov.uk/about/who-we-are/our-services/vml>

⁶ Secure Data Service: <http://securedata.ukda.ac.uk/>

Microdata is considered to be out of the scope of this strategy and throughout, the term 'data' will refer to the top three levels of the data framework, i.e. summary statistics, pre-tabulated aggregate data, and user-definable aggregate data or 'data cubes'.

- 3.4. **Figure 1** illustrates these levels of data, and some examples of their uses, but is not intended to be exhaustive. It is designed to be a high-level demonstration of the layers of statistical data that exist and that are discussed within this strategy.

Figure 1: Levels of data and potential uses.



* For example, those utilised by Department for Work and Pensions, Defence Analytical Services and Advice, the Welsh Government and the Health and Safety Executive.
 ** Virtual Microdata Laboratory and Secure Data Service.

- 3.5. With the varying levels of statistical data, there is also a variety of users, each with different needs in relation to those data. **Table 1** uses the European Statistical Data Support (ESDS) user classification to segment these differing users and provides some examples of the types of statistical data used by those user groups. In assessing the strengths and weaknesses of current dissemination practices, a key weakness identified was a lack of understanding of the wider user need. In taking this strategy forward, there needs to be more thought given to these potential users, the uses they make of statistical data, and how our methods and formats should facilitate use.

Table 1: User segmentation and potential uses of statistics based on the European Statistical Data Support (ESDS) user classification.

ESDS User Group Classification	Potential Uses of Statistics
Political Parties and Organisations	Headline figures and statistical analysis to support or refute policy or action, future projections, opinion polls, voter analysis
International Organisations	Headline figures for international comparisons
National Statistical Institutes	Headline figures for international comparisons, microdata for collaborative projects, methodological comparisons, demography.
Press and Other Media	Headline figures to support news messages, surveys.
Government/Public Administrations	Headline figures and statistical analysis to support or refute policy or action, future projections, opinion polls, voter analysis, demography, microdata for detailed analysis.
EU Institutions/Agencies	Headline figures for international comparisons, methodological comparisons
Commercial Companies/Enterprises	Headline figures, time series data, market analysis, future projections, identify target markets and formulate campaigns.
Students or Academics	Microdata for comparative analysis, headline figures for reference papers or reports
Public Users	Gathering information regarding the world in which they live, in order to make informed decisions, e.g. school league tables, hospital rankings, house prices and inflation.

3.6. Implementation of the recommendations of this strategy, is intended to result in data which are easier for users from all of the above groups to find, view analyse and download. For example, headline figures and reports will be easier to find and time series and aggregate datasets will be available in a consistent and standardised format. This availability and accessibility of data will facilitate the analysis, use and reuse of official statistics for the benefit of all.

4. Drivers for Change

4.1. Official statistics producers have a responsibility to deliver high quality statistics about the UK and its Devolved Administrations (DAs). But in addition, official statistics producers are part of a community that also needs to be focused on making sure that there is a consistent and coherent approach to ensuring that users can find and understand the statistical products that are delivered. In considering the drivers for this strategy, consideration was given to current practice in the Web dissemination of official statistics, how this impacts on the user, and what steps can be taken by producers to become better disseminators of official statistics.

4.2. The primary driver for change in current Web dissemination practices is the user. Official statistics can be very difficult to find and in cases where they are easy to find, they are not always in the format that is needed. There has also been a rise in the user expectation in terms of the visual presentation of official statistics, and the technology used to disseminate them, including the use of social media and portable media.

4.3. User consultation undertaken whilst developing this strategy (**Annex B**) revealed that, although there was still a need for standard reports and visualisations, in many cases users primarily want underlying data. Users report that written documents are hard to find and difficult to tailor to their own needs. They also state that data is hard to find but easy to tailor to their own needs, which was a primary requirement. There is also feedback that official statistics websites are difficult to navigate and that the available data are inflexible.

4.4. The drive to open up public data for public use is also a key driver for change. The UK Government has made clear its commitment to transparency and open Government. In the Programme for Government⁷, there is reference to a new 'right to data', and also states that all data published by public bodies should be made available in an open and standardised format so that it can be used easily and with minimal cost to third parties. The drive for transparency and opening up public data is largely embodied within data.gov.uk⁸. A GSS Transparency sub-group has been convened in order to address this and many other issues regarding the role of statistics and statisticians in the drive for transparency. In making data available for use and reuse, the Web offers an ideal platform through which to present data for users to use and reuse for their own purposes. But in making data available, official statistics producers must ensure that common data standards are adhered to in terms of presentation and formats, as well as the standardisation of metadata. In considering dissemination practices, thought is also given to international practices and standards and the opportunities these provide to the UK.

4.5. Inspiration can also be taken from other organisations, such as the BBC and other news media, Google and Gapminder⁹ who devote considerable resource to ensuring that information is available to users in an accessible and interactive way. These organisations have well known branding and high visibility. This has in turn led to a rise in the expectations of users in the way information is presented. Partnerships with these organisations could help in, for example, the dissemination of official statistics by drawing on their branding and website visibility.



Gapminder World
<http://www.gapminder.org/world>

4.6. Social media use is also increasing dramatically each year and could be used much more extensively by official statistics producers. With the abundance of services available it is easy to find a tailor made tool with which to disseminate information about official statistics to a particular audience. A rise in the use of portable media such as smartphones or tablet computers is a further important change in the way users access information via the Web. Specialist applications can be developed to facilitate the sharing of statistical products via these media.

⁷ The Programme for Government:
http://www.cabinetoffice.gov.uk/sites/default/files/resources/coalition_programme_for_government.pdf

⁸ data.gov.uk: <http://data.gov.uk/>

⁹ Gapminder World Website: <http://www.gapminder.org/world>

- 4.7. There are also many technologies that have been developed specifically to enhance users' experience of accessing information via the Web. Technologies such as RSS (Really Simple Syndication) feeds or Application Programming Interfaces (APIs) can be utilised to ensure official statistics are easily accessible and available for use and reuse.
- 4.8. In terms of this strategy, the challenge facing the UK Government and the DAs is improving the availability of statistics and data to users. This has been approached differently by each administration. The UK Government has created the Transparency agenda and the data.gov.uk website, the Scottish Government has increased and promoted openness and transparency via sites such as ScotStat, the Welsh Government makes a wide range of detailed statistics available on the StatsWales website and similarly, the Northern Ireland Executive utilises the NISRA webpage to host statistical information in one place. This strategy, however, proposes an approach which will improve the users' experience of accessing official statistics, wherever they are produced.
- 4.9. These drivers are discussed more fully in **Annex C** and some examples are shown of existing good practice across the UK and international statistical community.

5. Options and Recommendations

- 5.1. As stated, options for developing the Web dissemination of UK official statistics should focus on the user and their ability to find, view, analyse and download the official statistics they require.
- 5.2. Analysis of current practice and the drivers for change raised five key questions, which are discussed in more detail below:
 - Should a single site be used as a gateway to official statistics or should there be a single site housing all official statistics?
 - What is the future relationship between the Publication Hub and data.gov.uk?
 - How much control should producers seek to maintain over their data?
 - To what extent should official statistics producers seek to utilise the expertise and resources of external organisations in the Web dissemination of their statistics?
 - Should official statistics producers utilise social media as a means of expanding their dissemination practices?
- 5.3. In turn, this discussion leads to a series of strategic recommendations and short and medium term actions. Some are grouped around the five questions and others emerge from the strategic research.
- 5.4. It is understood that in some cases, notably the use of social media, producers are constrained by their departments' existing policies. However, it is believed that in each of these cases there is the opportunity to explore alternative dissemination methods and opportunities for innovation and efficiency.
- 5.5. It is noted that whilst owners of each action are expected to oversee their implementation, they are not necessarily expected to perform the work themselves.

Question 1: Should a single site be used as a gateway to official statistics or should there be a single site housing all official statistics?

- 5.6. There is currently no single site or gateway that users can come to for all official statistics. The Publication Hub provides a single point of access to all National Statistics and many official statistics, but inclusion of the latter is not mandatory. If current practice continues, the user will remain confused and frustrated with the difficulty of finding official statistics. Furthermore, there is a risk that less robust sources will be used simply because they are more accessible.

Option 1: Use a single site through which users can gain access to all official statistics.
The Publication Hub currently contains links to all National Statistics and many official statistics. As a ready-made portal, the Publication Hub presents a solution for access to all official statistics as well as all National Statistics. To meet the rising demand for data, however, it would also need to contain links to underlying aggregate datasets and associated metadata for those statistics. Users would be able to find all the information they require, as well as related content, through one site. By acting as a portal, it allows producers to retain control and management of their statistics as well as housing related content on policy or other relevant statistics. Although the Publication Hub already contains links to all National Statistics and many official statistics, this option would require some small resource investment to enable it to contain links to all official statistics as well as developing links to associated aggregate data and metadata.

Option 2: Create a single content repository for all official statistics.
The drive for the rationalisation of .gov.uk website domains creates a risk that some statistical sites may be closed. These 'orphaned' sites would then need to either migrate to the department's home page, perhaps reducing perceived independence, or could be migrated to another site such as the Publication Hub. Creating a single content repository for all official statistics could present a user-focused solution, with all statistics, aggregate datasets and metadata found in one place. In practice this could be done by altering the function of the Publication Hub to become an online repository for reports, aggregate data and metadata, but would be the most expensive to implement in the short term.

Recommendation 1: Accept Option 1 - There should be a single site through which users can gain access to all official statistics, in addition to departmental and DA sites.

- 5.7. In addition to release on departmental and DA websites, links to official statistics should also be made available via one single portal. This will benefit the user, as they will be able to find and navigate between all official statistics, regardless of producer. The Publication Hub currently provides a portal to all National Statistics and it is proposed that this be extended to include all official statistics. The producer will retain hosting and publishing responsibilities, but with links also being available via the Publication Hub. As at March 2011, the UK produces 1,060 National Statistics and 680 official statistics. Currently, all National Statistics and 520 official statistics are hosted on the Publication Hub. In order to provide access to all official statistics publications through one site, the Publication Hub would need to accept 160 further products.

No:	Action	Owner	Priority	To be completed
1a	To enable the Publication Hub to receive links to all official statistics.	ONS Publication Hub Liaison Team	High	April 2012
1b	To issue guidance strongly urging producers to publish links to all official statistics, as well as National Statistics, on the Publication Hub.	National Statistician	High	April 2012
1c	To develop options for the future of Publication Hub capability.	NSO	Medium	April 2012

Question 2: What is the future relationship between the Publication Hub and data.gov.uk?

5.8. The Publication Hub and data.gov.uk are both important for the dissemination of official statistics. The Publication Hub contains links to all National Statistics and many official statistics and provides the user with a single point of access to all National Statistics. The Publication Hub reinforces the independence of official statistics from Government and therefore increases public trust in official statistics. Data.gov.uk contains links to many broader Government and publicly held datasets and provides the user with access to public data. There is currently an automatic feed between the two sites, and any links published on the Publication Hub are updated daily to data.gov.uk, ensuring that all information available via the Publication Hub is also available via data.gov.uk. As data.gov.uk is a UK Government initiative, DA websites may be the first point of access for many users seeking statistics concerning Scotland, Wales or Northern Ireland. However, the effective use of the publication hub and its links to data.gov.uk would greatly increase the visibility of UK-wide statistics and underlying aggregate data.

Option 1: No future relationship between the Publication Hub and data.gov.uk.

If there were no future link between these two sites, there would be increasing disparity between content. This would create unnecessary burden on departments who would have to post information twice and would also be a burden for users who would have to go to separate sites for related data. This would not fall in line with the Government's transparency plans or the plans for public data and would inconvenience users. This option would not involve any resources in terms of website maintenance; but it would have resource implications on departments who would have to invest more time and effort to ensure that their information appeared on both sites.

Option 2: Continue the connection between the Publication Hub and data.gov.uk.

If the connection between the two sites is continued, this will ensure continuity between the two sites and will increase the ability of users to find the statistics they require, as they will be available on both sites. It will also reduce the burden on producer departments to post information twice. This option is the most resource efficient, as the link between these sites already exists.

Option 3: Extend the capability of the Publication Hub and strengthen its connection with data.gov.uk.

Extending the capability of the Publication Hub to include links to all official statistics as well as underlying aggregate data and metadata would reduce the burden on the user to search individual departments' websites for the information they require. This would also support the 'Right to Data', as aggregate datasets would be published regularly

alongside statistical publications. Maintaining the link between the Publication Hub and data.gov.uk would aid the user and the producer by ensuring that information was available consistently on both sites and would avoid producers having to post information twice. This option would involve some investment of resource to enable the Publication Hub to receive links to aggregate data and metadata.

Recommendation 2: Accept Option 3 - Extend the capability of the Publication Hub and strengthen its connection with data.gov.uk.

5.9. The link between the Publication Hub and data.gov.uk is important in increasing the visibility and availability of official statistics and associated aggregate data and is an example of a successful partnering arrangement which should be strengthened. This link should be retained and extended to include links to the underlying aggregate datasets and metadata, so that users can find official statistics and aggregate data via either route.

No:	Action	Owner	Priority	To be completed
2a	To ensure a perpetual feed between the Publication Hub and data.gov.uk.	ONS Publication Hub Liaison Team	High	Ongoing
2b	To enable the Publication Hub to receive links to underlying aggregate data and metadata and include publishing guidance for official statistics producers.	ONS Publication Hub Liaison Team	Medium	June 2012

It has been agreed that recommendations 1 and 2 of this strategy will not apply to Scottish Government statistics.

These particular recommendations primarily reflect the situation relating to UK departments for which statistics are produced by a variety of producers and held in a variety of locations.

Further, data.gov.uk and the transparency agenda, which are key drivers for these recommendations, are UK Government initiatives and do not apply to the Devolved Administrations.

For further discussion of the challenges facing the UK Government and the Devolved Administrations, please see page 48.

Question 3: How much control should producers seek to maintain over their data?

5.10. Producers of official statistics are subject matter experts on their data. In order to ensure the most appropriate use of data and due to technological limitations, statisticians have historically tended to be cautious over the release of underlying data. But as data holdings grow, producers do not have the resources to meet all demands for in-depth or bespoke analysis. Given advances in technology, making aggregate data available for use and reuse can now relieve some of this demand. It also increases transparency and perceived trustworthiness of statistics and their producers.

Option 1: Limited release of data.

By failing to let go of underlying aggregate data, departments have to shoulder the burden of providing secondary analysis, and potentially the development of applications and “mashups”. This model is the most resource intensive for

departments, fails to capitalise on external innovation and technology, and does not support the desire for transparency or the National Statistician's vision. This is not an option for official statistics producers, as retaining excessive control over data reduces the public trust in official statistics and it does not meet the rising demand for data.

Option 2: Make aggregate data available for use and reuse.

Increasingly there is clear demand and political will to make public data freely and readily available, subject to the need to suitably protect the privacy and confidentiality of personal and business data. Statisticians can certainly do more to support this, while minimising the risks of misuse by providing appropriate metadata and support. Making aggregate data available for use and reuse, as long as the confidentiality and integrity of the information is protected, increases transparency, reduces burden on producing departments and maximises the opportunity for the data to better inform debate and decision making. Under this option, the priority for official statistics producers is to do more to open up their data; for example, through the use of APIs, in a format that is consistent and understood. This option will require some investment of resource for putting aggregate datasets into an appropriate format for release and developing systems to facilitate sharing of data, such as APIs or tabulation tools.

Recommendation 3: Accept Option 2 - Make aggregate data available for use and reuse and adhere to open data standards for datasets and metadata.

5.11. Making aggregate data available for reuse in an appropriate format is a key priority for official statistics producers. Aggregate datasets published for analysis and reuse should be in non-proprietary formats such as CSV, XML or RDF. Guidelines on releasing underlying data can be found on the Central Office of Information (COI) website¹⁰. In releasing aggregate data, official statistics producers must comply with the minimum data format set out by the COI, but should seek to release data and metadata to the Statistical Data and Metadata eXchange (SDMX) standard. In order to improve transparency and meet the user demand for data, official statistics producers should at the very least release suitably aggregated or anonymised datasets that underlie their official statistics. Any other release of data may be dependent upon departments' resources and the usefulness and appropriateness of those data. It is important in all cases to pay due consideration to the confidentiality of personal and business data, and comply with the requirements of the Data Protection Act, 1998¹¹. The drive for available data will be made even more salient with the 2011 Census. The Office for National Statistics' (ONS') approach to Census dissemination, as set out in the 2011 Census Outputs Strategy¹², recognises the Web as the primary dissemination route, meeting the common needs of users and incorporating the flexibility for users to create their own products. The launch of the new Open Government Licence¹³, which replaced the Click-Use Licence¹⁴, facilitates the use and reuse of data as users no longer need to formally apply for a licence in order to use data. The release of

¹⁰ Underlying data publication guidelines: <http://coi.gov.uk/guidance.php?page=376>

¹¹ Data Protection Act: <http://www.legislation.gov.uk/ukpga/1998/29/contents>

¹² 2011 Census Outputs Strategy: <http://www.ons.gov.uk/census/2011-census/consultations/open-consultations/2011-output-consultation---main-statistical-outputs/2011-census-outputs-strategy.pdf>

¹³ Open Government Licence Information: <http://www.nationalarchives.gov.uk/doc/open-government-licence/open-government-licence.htm>

¹⁴ Click-Use Licence information: <http://www.opsi.gov.uk/click-use/system/online/pAboutUs.asp>

aggregate data does not preclude any further involvement by the relevant statisticians. The subject matter experts have a potential role in how those data are used and should be available and willing to take part in open dialogue regarding the appropriate use of those data.

No:	Action	Owner	Priority	To be completed
3a	To work with the Cabinet Office to ensure that official statistics producers are engaged with making aggregate data available in suitable formats.	GSS PDC Transparency Sub-Group	Medium	December 2011
3b	To develop guidance on the creation of aggregate datasets to SDMX standard in conjunction with the Cabinet Office.	GSS PDC	Medium	March 2012
3c	To adhere to SDMX guidelines, produced by GSS PDC and CO, when producing and releasing aggregate data and metadata.	HoPs	Medium	To begin March 2012 then ongoing

Question 4: To what extent should official statistics producers seek to utilise the expertise and resources of external organisations in the Web dissemination of their statistics?

5.12. Organisations like Gapminder, Google, the BBC and other news media devote considerable resource to presenting data in a clear, understandable and interactive way. This has led to a rise in the expectations of users who want official data presented in a similar, easy to use and reuse manner. There are many opportunities to work with others in the dissemination of official statistics.

Option 1: Do not utilise the expertise and resources of external organisations.

Seeking no partnerships in the dissemination of official statistics would limit departments' ability to produce statistics in an interactive way. It would also mean that the statistics produced would only be placed on Government websites, without the ability to capitalise on others' branding or website profile. This option increases the resource burden on departments to meet the user expectation of visually interesting and interactive products.

Option 2: Utilise the expertise and resources of external organisations for all statistical outputs.

Seeking partnerships for all statistical outputs would provide users with many routes to official statistics and ensure that they were all produced in interactive ways that make the most of available technologies. But it is not always necessary or appropriate for statistics to be presented in this way. Many users prefer to use written reports and it would also limit the statistical expertise used in the analysis and commentary around those data. It would be too resource intensive for producers to seek partnerships and collaborations on all statistical outputs and some data could not easily be shared with third parties due to security or confidentiality constraints.

Option 3: Utilise the expertise and resources of external organisations where appropriate on a case-by-case basis.

The user need for straight forward summary tables and findings means that many statistical outputs would not benefit from a partnership with an external organisation. In other cases, the expertise of third parties would have significant benefits in terms of making better use of and raising the profile of official statistics. This option has the benefit of reducing the resource burden on producing departments, as well as meeting the user demand for interactive visualisations of complex statistics.

Recommendation 4: Accept Option 3 - Utilise the expertise and resources of external organisations, where appropriate, to facilitate Web dissemination.

5.13. Organisations such as Google, Gapminder and the BBC are ideally placed to help explore official data in meaningful, interesting and interactive ways. At a time of exceptional financial constraint, official statistics producers should consider the possibility of partnerships to enhance dissemination practice. There are, of course, many different types of partnership options, from giving data to an organisation so that they can use it for their websites and applications, through working together to create novel ways of presenting data, to exploiting an organisation's brand to display an application because of its proven visibility. Each instance should be assessed on a case-by-case basis to ensure that the potential benefits outweigh the potential costs. This recommendation does not suggest that we should all be seeking to employ external companies to present our data, but that we should consider that the expertise and visibility of other companies may be of use in the dissemination of official statistics. In many cases, working with external experts can bring innovation and efficiency to our dissemination practices.

No:	Action	Owner	Priority	To be completed
4a	To draw together current partnering arrangements across the GSS to share experiences and opportunities with all producers.	GSS PDC	Medium	December 2011
4b	To champion potential partnering arrangements across the GSS, following on from census dissemination arrangements.	ONS	Medium	To begin December 2011

Question 5: Should official statistics producers utilise social media as a means of expanding their dissemination practices?

5.14. Social media usage is growing rapidly, especially with the rise in portable devices such as smartphones and tablet computers. Social media builds on the ideology of Web 2.0 by emphasising user-generated content. Considering the use of social media begins with the need to understand the context of online behaviour, the evolution of online media, and the recognition that statistical users expect to be able to interact via such media.

Option 1: Do not use social media.

Using social media as a dissemination technique would require some additional effort. It also carries the risk of failing to meet expectations of a constructive dialogue. Not using social media would result in producers having more control over what is released into the public domain and would be the cheapest option, as no training or

maintenance costs would be incurred. But, significant opportunities to raise awareness and accessibility of official statistics would be lost.

Option 2: Consider the use of social media as a means of official statistics dissemination.

In the face of ever growing demands from users, many of whom are more technologically capable than producers themselves, social media such as Twitter, Facebook or YouTube offer tailor-made solutions to reaching individuals interested in official data, both as a dissemination technique and as a potential two-way communication tool. Guidelines and training for the use of social media would need to be centrally agreed. But social media can be used to raise the public visibility of official statistics, increase the transparency of Government working and ensure that users are aware of and can find the statistics they require. This option will require investment in terms of training, monitoring and maintenance. But many dissemination techniques utilising social media can be automated, reducing the financial burden.

Recommendation 5: Accept Option 2 – Consider the use of social media as a means of official statistics dissemination.

5.15. Social media offers a tailor-made solution to communicating with individuals that are interested in a particular product. It is not a one-size-fits-all solution and there are many different types of social media with many different applications. Guidance on the use of social media is provided centrally by COI¹⁵ and the Cabinet Office¹⁶. Many departments also have their own social media policies. There are many freeware tools available to automate social media use, ensuring minimal burden on resources. For example, TwAitter, TwitBabble and HootSuite enable Twitter messages to be pre-programmed, saving on resources and ensuring timeliness and accuracy. Google Alerts, Google AdWords or Social Mention allow monitoring of blog activity in order to better inform producers about areas of interest and can help target user engagement. The use of social media is recommended as an enhancement of our existing dissemination abilities and not as a replacement.

No:	Action	Owner	Priority	To be completed
5a	To produce National Statistician's guidance on the appropriate use of social media across all departments, drawing on examples of current practice.	SPSC	Medium	December 2011
5b	To review the use of social media as a potential means of disseminating statistics, in line with NS guidance.	HoPs	Medium	Initially by May 2012 then ongoing
5c	To raise awareness of good practice in the use of social media both via StatNet and a series of Web dissemination 'events'.	GSS PDC	Medium	March 2012

¹⁵ COI Guidance on use of Social Media:
http://coi.gov.uk/documents/Engaging_through_social_media.pdf

¹⁶ Cabinet Office guidance on online participation:
<http://www.civilservice.gov.uk/about/resources/participation-online.aspx>

Further Recommendations:

5.16. These further recommendations stem from the interdependency of all the above and the analysis of current practice and key drivers.

Recommendation 6: Improve accessibility of official statistics through the use of the Web and associated technologies.

5.17. Technology is advancing rapidly. While official statistics producers cannot expect to lead this advancement, innovation will be needed in terms of their delivery methods. Publishing a PDF file on a website is no longer sufficient, especially when users expect to be able to access our products through RSS feeds, from social media sites and portable media such as smartphones, and via APIs. Official statistics producers must continue to evaluate the effectiveness of their dissemination practices and try to more fully exploit the Web and available technologies to ensure users can easily and appropriately access, use and reuse our statistics.

No:	Action	Owner	Priority	To be completed
6a	To compile examples of good practice in the use of technology in the dissemination of official statistics and find innovative ways of building on this amongst official statistics producers.	GSS PDC	High	December 2011
6b	To review current practice in the use of the Web and associated technologies in light of examples from GSS PDC.	HoPs	Medium	Initially by May 2012 then ongoing
6c	To raise awareness of good practice in the use of technology, both via StatNet and a series of Web dissemination 'events'.	GSS PDC	Medium	March 2012
6d	To develop a search engine optimisation strategy in order to improve the visibility of official statistics on external search engines.	Publication Hub Liaison Team	Medium	April 2012

Recommendation 7: Raise skill levels of staff involved in producing content for the Web.

5.18. In considering the use of the Web and associated technologies, thought must also be given to the fact that writing for the Web is not the same as writing for print¹⁷. Developing skills in this area is essential, alongside the use of new technologies. In developing skills in this area, departmental Web teams can be a valuable resource, but sometimes have different constraints. Strengthening communications and relationships between these teams and official statistics producers can facilitate the sharing of knowledge and advice regarding publishing content to the Web. There are also a

¹⁷ Writing Style for Print vs. Web <http://www.useit.com/alertbox/print-vs-online-content.html>

Reference papers on Writing for the Web: <http://www.useit.com/papers/webwriting/>

COI guidance on Writing for the Web: <http://usability.coi.gov.uk/theme/writing-content/writing-for-web.aspx>

variety of training courses already available to promote knowledge in this area. ONS currently offer courses designed to enhance Web writing and online data visualisation skills. Sharing of good practice across the producer community will be essential in developing expertise in this area.

No:	Action	Owner	Priority	To be completed
7a	To collect information on available training courses on producing content for the Web and endeavour to make them available throughout the GSS.	GSS PDC/ GSS HRC	High	December 2011

Recommendation 8: Adopt the vision for Web dissemination as:

To achieve the widest possible dissemination and use of official statistics and data by better utilising the Web and associated technologies and by adopting consistent data and metadata formats and standards.

Recommendation 9: GSS Presentation and Dissemination Committee to lead the implementation of this strategy.

No:	Action	Owner	Priority	To be completed
9a	To have oversight of the implementation of the above actions.	GSS PDC	High	To begin July 2011
9b	To raise awareness of the strategy, collate and share good practice, both via StatNet and a series of Web dissemination 'events'.	GSS PDC	Medium	September 2011

5.19. The actions that support the strategic recommendations vary in terms of their priority and timescales. Those with shorter timescales or those identified as 'quick wins' are:

- issuing guidance strongly urging producers to publish links to all official statistics on the Publication Hub,
- enabling the Publication Hub to receive links to all official statistics,
- ensuring a perpetual feed between the Publication Hub and data.gov.uk,
- collecting information on available training courses on producing content for the web and making an effort to make them available throughout the GSS, and
- compiling examples of the use of social media, partnership arrangements, and the use of the web and associated technologies, in order to share experience across the official statistics producer community.

5.20. Longer term aspirations include:

- enabling the Publication Hub to receive links to underlying aggregate data and metadata and include guidance for official statistics producers,
- developing guidance on the creation of aggregate datasets to SDMX standard, and for producers to adhere to these guidelines when releasing aggregate data and metadata, and
- reviewing practices in the use of social media, partnership arrangements, and the use of the web and associated technologies, in order to innovate and create efficiencies in our dissemination practices.

Summary Actions Table¹⁸

No:	Action	Owner	Priority	To be completed
1a	To enable the Publication Hub to receive links to all official statistics.	ONS Publication Hub Liaison Team	High	April 2012
1b	To issue guidance strongly urging producers to publish links to all official statistics on the Publication Hub.	National Statistician	High	April 2012
1c	To develop options for the future of Publication Hub capability.	NSO	Medium	April 2012
2a	To ensure a perpetual feed between the Publication Hub and data.gov.uk.	ONS Publication Hub Liaison Team	High	Ongoing
2b	To enable the Publication Hub to receive links to underlying aggregate data and metadata and include publishing guidance for official statistics producers.	ONS Publication Hub Liaison Team	Medium	June 2012
3a	To work with the Cabinet Office to ensure that official statistics producers are engaged with making aggregate data available in suitable formats.	GSS PDC Transparency Sub-Group	Medium	December 2011
3b	To develop guidance on the creation of aggregate datasets to SDMX standard in conjunction with the Cabinet Office.	GSS PDC	Medium	March 2012
3c	To adhere to SDMX guidelines, produced by GSS PDC and CO, when producing and releasing aggregate data and metadata.	HoPs	Medium	To begin March 2012 then ongoing
4a	To draw together current partnering arrangements across the GSS to share experiences and opportunities with all producers.	GSS PDC	Medium	December 2011
4b	To champion potential partnering arrangements across the GSS, following on from census dissemination arrangements.	ONS	Medium	To begin December 2011
5a	To produce National Statistician's guidance on the appropriate use of social media across all departments, drawing on examples of current practice.	SPSC	Medium	December 2011

¹⁸ Owners of each action are expected to oversee their implementation, but are not necessarily expected to perform the work themselves.

No:	Action	Owner	Priority	To be completed
5b	To review the use of social media as a potential means of disseminating statistics, in line with NS guidance.	HoPs	Medium	Initially by May 2012 then ongoing
5c	To raise awareness of good practice in the use of social media both via StatNet and a series of Web dissemination 'events'.	GSS PDC	Medium	March 2012
6a	To compile examples of good practice in the use of technology in the dissemination of official statistics and find innovative ways of building on this amongst official statistics producers.	GSS PDC	High	December 2011
6b	To review current practice in the use of the Web and associated technologies in light of examples from GSS PDC.	HoPs	Medium	Initially by May 2012 then ongoing
6c	To raise awareness of good practice in the use of technology, both via StatNet and a series of Web dissemination 'events'.	GSS PDC	Medium	March 2012
6d	To develop a search engine optimisation strategy in order to improve the visibility of official statistics on external search engines.	ONS Publication Hub Liaison Team	Medium	April 2012
7a	To collect information on available training courses on producing content for the Web and endeavour to make them available throughout the producer community.	GSS PDC/ GSS HRC	High	December 2011
9a	To have oversight of the implementation of the above actions.	GSS PDC	High	To begin July 2011
9b	To raise awareness of the strategy, collate and share good practice, both via StatNet and a series of Web dissemination 'events'.	GSS PDC	Medium	September 2011

These recommendations are presented in chronological order in **Annex D**.

6. Risks

I = Impact Scoring: 1-6, with 6 being catastrophic (impact on the official statistics producer community)

L = Likelihood Scoring: 1-5, with 5 being almost certain

No:	Risk	I	L	Priority	Mitigation	Contingency	Owner
1	Breaches in privacy or confidentiality as a result of the release of data may lead to reputational damage to, and retrenchment of, the official statistics producer community, as well as potential legal action.	5	3	15	Ensure guidelines on the appropriate release of data are in place across departments and adhere to these protocols.	Report breaches to the National Statistician and follow department protocol.	Heads of Profession (HoPs).
2	There is a risk that the link between the Publication Hub and data.gov.uk will develop problems, leading to a short term period of time when data.gov.uk is not updated with new statistical data releases, or a long term problem whereby departments would either need to find additional resource to enter in both systems or to cease entering in one system.	4	3	12	If the problem occurs again and data.gov.uk doesn't fix the problem, the mitigation is to set up an IM project to re-write/run the script in-house.	ONS Publication Hub Liaison Team to work closely with data.gov.uk developers to see if they can fix the problem at their end. If this fails, then we will have to proceed as per the mitigation plan.	ONS Publication Hub Liaison Team.
3	A lack of knowledge or skills of strategy recipients may lead to the producer community being unable to achieve the widest possible dissemination and use of official statistics.	4	3	12	Provide explanation of what is expected of recipients and be available to support them.	Communicate with recipients on a one-to-one basis to clarify points of confusion.	National Statistician's Office (NSO).
4	As a result of actual lack of resources, there is a risk of the producer community being unable to achieve the widest possible dissemination and use of official statistics.	4	3	12	Balance and prioritise the cost of recommendations with requirement for change and improvement.	Support areas in the production of business cases for additional resource.	NSO.
5	As a result of a perceived lack of resources, there is a risk that the producer community will be unable to achieve the widest possible dissemination and use of official statistics.	4	3	12	Provide sufficient explanation so that recipients can see that most actions do not require much resource.	Communicate with recipients on a one-to-one basis to clarify points of confusion.	NSO.
6	There is a risk that the actions are incompatible with departments' current policy, resulting in the producer community being unable to achieve the widest possible dissemination and use of official statistics.	3	3	9	Balance the actions and recommendations with existing practice to ensure all mandated actions are compatible.	Share experience in areas in which departmental policy has been challenged for the better and support producers in making a case for change.	NSO.
7	As a result of inappropriate social media usage, there is a reputational risk to departments.	3	3	9	Ensure appropriate procedural controls and guidelines are in place for the use of social media and are adhered to by staff.	Case by case decision making on the appropriate action to limit damage and reinforce policies.	NSO, HoPs.

I = Impact Scoring: 1-6, with 6 being catastrophic (impact on the official statistics producer community)

L = Likelihood Scoring: 1-5, with 5 being almost certain

No:	Risk	I	L	Priority	Mitigation	Contingency	Owner
8	Not implementing prompt steps to achieve the widest possible dissemination and use of official statistics may lead to the producer community losing visibility and not delivering the National Statistician's vision.	4	2	8	Assign oversight of implementation to a GSS body and provide appropriate support to actionees.	Review application of resources to prioritise fundamental areas of the strategy.	NSO.
9	Poor communication of the strategy may lead to people not understanding it, leading to a failure to achieve the widest possible dissemination and use of official statistics.	4	2	8	Ensure in presentation of the strategy, there is sufficient explanation of what is expected from recipients and develop 'events' to promote awareness of the strategy and provide a forum for discussion.	Communicate with recipients on a one-to-one basis to clarify points of confusion or misunderstanding.	NSO.
10	A lack of knowledge or skills of staff may result in a failure to achieve the widest possible dissemination and use of official statistics.	4	2	8	Encourage the sharing of knowledge, skills and training across the producer community.	Identify specific areas of need and ensure these areas receive adequate training.	NSO, HoPs.
11	A lack of trained staff may lead to an inability to achieve the widest possible dissemination and use of official statistics.	3	2	6	Ensure actions and recommendations are reasonable with respect to the skills of staff.	Encourage sharing of good practice, knowledge and skills to enhance abilities across the producer community.	NSO.
12	A lack of commentary and information around released datasets may lead to inappropriate use of those data.	3	2	6	Ensure guidelines are in place for the presentation of metadata and commentary alongside the release of datasets, working with key stakeholders to achieve this.	Identify and challenge inappropriate use and ensure appropriate steps are taken to mitigate future occurrence.	NSO.
13	There is a risk that excess trained staff will leave the GSS, leading to a loss of resource for official statistics producers.	3	2	6	Provide opportunity for staff to move and learn within the GSS and demonstrate that staff are valued at all levels. Share knowledge and skills.	Utilise policy and academic collaborations and reprioritise workloads.	NSO, HoPs.
14	There is a risk that new partnering arrangements may lead to escalating costs for producers.	3	2	6	Ensure sufficient cost and resource planning occurs prior to commitment to partnering, including appropriate exit clauses.	The execution of partnering exit clauses.	HoPs.

I = Impact Scoring: 1-6, with 6 being catastrophic (impact on the official statistics producer community)

L = Likelihood Scoring: 1-5, with 5 being almost certain

No:	Risk	I	L	Priority	Mitigation	Contingency	Owner
15	As a result of a misunderstanding of the recommendations, there is a risk that they may be implemented inappropriately, leading to reputational damage to the official statistics producer community.	3	2	6	Ensure in presentation of the strategy, there is sufficient explanation of what is expected from recipients and develop 'events' to promote awareness of the strategy and provide a forum for discussion.	Case by case decision making on the appropriate action to limit damage and reinforce policies.	NSO.
16	There is a risk that the targets are not ambitious enough and official statistics producers will be thought to be outdated, leading to external criticism and disengagement of potential partners.	3	2	6	Explain the overall intentions of the strategy clearly, as part of raising awareness.	Communicate with external parties that this strategy sets a minimum standard and that further enhancements can be made by departments with the ability and resource.	NSO.
17	As a result of a failure to manage the expectations of users or a lack of resources, there is a reputational risk to departments in the event of social media dialogue not being continued to the extent that the user requires.	2	3	6	Manage expectations with a clear, published social media policy and define resources to support desired use.	Case by case decision making on the appropriate action to limit damage and reinforce policies.	NSO.
18	There is a risk that the targets are too ambitious, resulting in a failure to achieve the widest possible dissemination and use of official statistics.	3	2	5	Explain the overall intentions of the strategy clearly, as part of raising awareness.	Communicate with recipients on a one-to-one basis to facilitate and support implementation.	NSO.
19	Changes in Government direction may result in this strategy no longer being appropriate.	2	2	4	Review the content of the strategy at timely intervals to ensure it is still current and appropriate.	Issue a statement indicating that the strategy is being reviewed in light of changes in Government direction. Publish a timely review of the strategy.	NSO.
20	There is a risk that new partnering arrangements may lead to exclusivity around particular data, hindering users' ability to find data.	2	2	4	Ensure partnering positions are appropriate and fully understood prior to formalising partnerships.	Negotiate a partnering change or decline to renew or continue arrangements. Make alternative information sources available to users.	HoPs.

I = Impact Scoring: 1-6, with 6 being catastrophic (impact on the official statistics producer community)

L = Likelihood Scoring: 1-5, with 5 being almost certain

No:	Risk	I	L	Priority	Mitigation	Contingency	Owner
21	There is a risk that new partnering arrangements may lead to misleading presentation or misuse of data.	2	2	4	Ensure that in entering a partnership, producers do not relinquish executive control over statistical products. Facilitate appropriate discussion to ensure products and presentation is agreed.	Inform the UKSA Board of any misuse of statistical data.	HoPs.
22	There is a risk that the rationalisation of .gov.uk website domain names will result statistical producers losing control over the Web publishing of their products, resulting in an inability to Achieve the widest possible dissemination and use of official statistics.	3	1	3	Continue to emphasise the importance of the independence of statistics.	Work with Web publishing teams to ensure good dissemination practices are continued.	HoPs, NSO.

7. Glossary of Terms

Application Programming Interface (API)

An Application Programming Interface (API) is a particular set of rules and specifications that a software program can follow to access and make use of the services and resources provided by another software program. It serves as an interface between different software programs and facilitates their interaction, similar to the way the user interface facilitates interaction between humans and computers.

Blog

A blog (derived from the term 'Web log') is a type of website or part of a website that is usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. The term 'blog' can also be used as a verb, meaning 'to maintain or add content to a blog'. Most blogs are interactive, allowing visitors to leave comments and even message each other via widgets on the blogs and it is this interactivity that distinguishes them from other static websites.

Crowdsourcing

Crowdsourcing is the act of taking a job traditionally performed by a designated agent or employee and outsourcing it to an undefined, generally large group of people in the form of an open call. The concept of crowdsourcing depends essentially on the fact that because it is an open call to an undefined group of people, it gathers those who are most fit to perform tasks, solve complex problems and contribute with the most relevant and fresh ideas.

Datablog

A datablog is a specific type of blog that provides commentary or news on particular data. This can be featured in a news article, a visualisation of those data or an interactive application used to explore those data.

data.gov.uk

data.gov.uk is a UK Government project to open up almost all non-personal data acquired for official purposes for free reuse. The site offers a wide range of public sector data, ranging from traffic statistics to crime figures, which can be used for private or commercial purposes. The aim is to kick-start the development of services that find novel ways to make use of the information.

Delicious

Delicious (www.delicious.com) is a social bookmarking Web service for storing, sharing, and discovering Web bookmarks. Delicious uses a non-hierarchical classification system in which users can 'tag' each of their bookmarks with freely-chosen index terms. Its collective nature makes it possible to view bookmarks added by other users.

European Statistical Data Support

European Statistical Data Support (ESDS) is a network of support centres set up by Eurostat and almost all member states in order to provide help and guidance to Internet users of European statistical data.

Eurostat

Eurostat (<http://epp.eurostat.ec.europa.eu>) is a Directorate-General of the European Commission. Its main responsibilities are to provide the European Union with statistical information at European level and to promote the harmonisation of statistical methods across member states, candidate countries and European Free Trade Association (EFTA) countries.

Facebook

Facebook (www.facebook.com) is a social network service and website on which users may create a personal profile, add other users as friends and exchange messages, including automatic notifications when they update their profile. Additionally, users may join common interest user groups, organized by workplace, school, or college, or other characteristics. The name of the service stems from the colloquial name for the book given to students at the start of the academic year by university administrations in the US with the intention of helping students to get to know each other better.

Flickr

Flickr (www.flickr.com) is an image and video hosting website, Web services suite, and online community. In addition to being a popular website for users to share and embed personal photographs, the service is widely used by bloggers to host images that they embed in blogs and social media.

Freeware

Freeware (derived from the words 'free' and 'software') is computer software that is available for use at no cost or for an optional fee. Though the definition of freeware covers both proprietary and closed-source software as well as free and open source software, in common usage it tends to refer more often to proprietary and closed source software that is available for use at no cost.

Gapminder Foundation

Gapminder (www.gapminder.org) is a non-profit venture, advertised as 'a modern museum on the Internet', to promote sustainable global development and achievement of the United Nations Millennium Development Goals. Gapminder is an operating foundation that provides services sometimes as collaborative projects with universities, UN organisations, public agencies and non-Governmental organisations.

Gapminder World

Gapminder World (www.gapminder.org/world) is the information visualization technique used by Trendalyzer. It is an interactive bubble chart that by default shows five variables; two numeric variables on the x and y axes, bubble size, a time variable that may be manipulated with a slider, and a categorical variable may be shown as bubble colour. The software uses brushing and linking techniques for displaying the numeric value of a highlighted country.

Geolocation

Geolocation is the identification of the real-world geographic location of an object, such as a mobile phone or an Internet-connected computer terminal. Geolocation is closely related to positioning but can be distinguished from it by a greater emphasis on determining a meaningful location (e.g. a street address) rather than just a set of geographic coordinates.

Google Earth

Google Earth (www.google.co.uk/earth) is a virtual globe, map and geographical information program which maps the Earth by the superimposition of images obtained from satellite imagery, aerial photography and Geographic Information Systems. Google Earth displays satellite images of varying resolution of the Earth's surface, allowing users to see things like cities and houses looking perpendicularly down or at an oblique angle. The degree of resolution available is based somewhat on the points of interest and popularity, but most land is covered in at least 15 meters of resolution. Google Earth allows users to search for addresses for some countries, enter coordinates, or simply use the mouse to browse to a location.

HTTP

HTTP (Hypertext Transfer Protocol) is a networking protocol for distributed, collaborative, hypermedia information systems. HTTP is the foundation of data communication for the World Wide Web.

Linked Data

Linked Data describes a method of publishing structured data, so that it can be interlinked and become more useful. It builds upon standard Web technologies, such as HTTP and URIs, but rather than using them to serve webpages for human readers, it extends them to share information in a way that can be read automatically by computers. This enables data from different sources to be connected and queried.

Mashup

A mashup is a webpage or application that uses and combines data, presentation or functionality from two or more sources to create new services. The term implies easy, fast integration, frequently using open APIs and data sources to produce enriched results that were not necessarily the original reason for producing the raw source data. The main characteristics of the mashup are combination, visualisation, and aggregation. To be able to permanently access the data of other services, mashups are generally hosted online.

Mapumental

Mapumental (<http://mapumental.channel4.com>) is a proprietary mapping tool to help support mobility choices such as where to live, where to find a job, or where to go on holiday. It combines measures of cost, travel time and 'scenicness' to indicate areas that best suit the user's requirements.

Microblogging

Microblogging is a form of blogging. A microblog differs from a traditional blog in that its content is typically smaller, in both actual size and aggregate file size. A microblog entry could consist of nothing but a short sentence fragment, an image or embedded video.

Microdata

Microdata is information at the level of individual respondents. For instance, a national census might collect age, home address, educational level, employment status, and many other variables, recorded separately for every person who responds; this is microdata.

Metadata

Metadata is loosely defined as data about data. Statistical metadata is any information that is needed by people or systems to make proper and correct use of statistical data in terms of capturing, reading, processing, interpreting, analysing and presenting the information. Metadata includes, but is not limited to, population definitions, sample designs, file descriptions and database schemas, codebooks and classification structures, processing details, checks, transformation, weighting, fieldwork reports and notes, conceptual motivations, table designs and layouts.

Open Source Software

Open source software is computer software that is available in source code form, for which the source code and certain other rights normally reserved for copyright holders are provided under a software license that permits users to study, change, and improve the software. Open source software is very often developed in a public, collaborative manner.

Portable Media

Portable media are devices such as laptop computers, tablet computers, smartphones and other mobile technology that can be used to access the Internet and media features.

Public Data Explorer

Google's Public Data Explorer (www.google.com/publicdata) makes large datasets easy to explore, visualise and communicate by making data available in graphic form. As the charts and maps animate over time, the changes in the world become easier to understand. The tool allows students, journalists, policy makers and other users to create visualizations of public data, link to them, or embed them in their own webpages. Embedded charts and links can update automatically so the latest data is always available.

Publication Hub

The Publication Hub (www.statistics.gov.uk) is the website used to host links to all past and present National Statistics and many official statistics produced by UK Government departments, the devolved administrations and other public bodies. It provides a calendar of statistical releases, which can be viewed in various ways including by release date, topic and providing department. The site also contains a calendar of future statistical releases.

RSS (Really Simple Syndication) Feeds

RSS (most commonly expanded as Really Simple Syndication) is a family of webfeed formats used to publish frequently updated works such as blog entries, news headlines, audio, and video, in a standardised format. An RSS 'feed' includes full or summarised text, plus metadata such as publishing dates and authorship. Webfeeds benefit publishers by letting them syndicate content automatically. They benefit readers who want to subscribe to timely updates from favoured websites or to aggregate feeds from many sites into one place. RSS allows users to avoid manually inspecting all of the websites they are interested in, and instead subscribe to websites such that all new content is pushed onto their browsers when it becomes available.

Secure Data Service

The Secure Data Service (SDS) (<http://securedata.ukda.ac.uk>) is funded by the Economic and Social Research Council (ESRC) and operated and managed by the UK Data Archives. Its aspiration is to promote excellence in research by enabling safe and secure remote access by researchers to data previously deemed too sensitive, detailed, confidential or potentially disclosive to be made available under standard licensing and dissemination arrangements.

Smartphone

A smartphone is a mobile phone that offers more advanced computing ability and connectivity than a contemporary basic feature phone, such as the Blackberry or the iPhone. Smartphones and feature phones may be thought of as handheld computers integrated within a mobile telephone, but while most feature phones are able to run applications based on platforms such as Java ME, a smartphone allows the user to install and run more advanced applications based on a specific platform. Smartphones run complete operating system software providing a platform for application developers. A smartphone can be considered as a personal pocket computer with mobile phone functions, because these devices are mainly computers, although much smaller than a desktop computer.

Social Media

Social media are media for social interaction, using highly accessible and scalable publishing techniques. Social media uses Web-based technologies to turn communication into interactive dialogues. Social media can be defined as a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, which allows the creation and exchange of user-generated content. Businesses also refer to social media as consumer-generated media. A common thread running through all definitions of social media is a blending of technology and social interaction for the co-creation of value.

Statistical Data and Metadata eXchange (SDMX)

The Statistical Data and Metadata eXchange (SDMX) is an internationally recognised and accepted set of recommendations for the presentation of statistical data, which includes the use of formats such as CSV and XML, as well as the inclusion of appropriate metadata. It is an initiative to foster common standards for the exchange of statistical information. SDMX sponsoring institutions are the Bank for International Settlements, the European Central Bank, Eurostat, the International Monetary Fund, the Organisation for Economic Co-operation and Development, the United Nations Statistics Division and the World Bank.

Tablet Computer

A tablet computer is a portable personal computer equipped with a touchscreen as a primary input device, such as a palmtop or the iPad. Tablets may use virtual keyboards and handwriting recognition for text input through the touchscreen. All tablet personal computers have a wireless adapter for Internet and local network connection.

Trendalyser

Trendalyzer was initially developed by the Gapminder Foundation and is information visualisation software for the animation of statistics. The current beta version is a Flash application that is preloaded with statistical and historical data about the development of the countries of the world. Gapminder World, the information visualisation technique used by Trendalyzer, is an interactive bubble chart that by default shows five variables; two numeric variables on the x and y axes, bubble size, a time variable that may be manipulated with a slider, and a categorical variable may be shown as bubble colour. The software uses brushing and linking techniques for displaying the numeric value of a highlighted country.

Twitter

Twitter (<http://twitter.com>) is a website which offers a social networking and microblogging service, enabling its users to send and read messages called 'tweets'. Tweets are text-based posts of up to 140 characters displayed on the user's profile page. Tweets are publicly visible by default; but senders can restrict message delivery to their friends list. Users may subscribe to other users' tweets, known as 'following' and subscribers are known as 'followers'.

URI

A URI (Uniform Resource Identifier) is a string of characters used to identify a name or a resource on the Internet. Such identification enables interaction with representations of the resource over a network (typically the World Wide Web) using specific protocols.

UK Data Archive

The UK Data Archive (www.data-archive.ac.uk) is curator of the largest collection of digital data in the social sciences and humanities in the UK. It holds data from large-scale Government surveys, major UK longitudinal surveys, opinion polls, historical data sources and data from environmental research projects. It also contains links to UK census data and cross-national data.

Virtual Microdata Laboratory

The Virtual Microdata Laboratory (VML) is a facility within the Office for National Statistics (ONS) which enables access to restricted microdata for research purposes. Researchers from Government and academia use the VML to carry out research on ONS surveys and other confidential datasets. It is a secure but flexible technical environment which adheres to strict disclosure control principles to ensure full confidentiality.

Web 2.0

The term 'Web 2.0' is commonly associated with Web applications that facilitate interactive systemic biases, interoperability, user-centred design, and developing the World Wide Web. A Web 2.0 site allows users to interact and collaborate with each other in a social media dialogue as consumers of user-generated content in a virtual community, in contrast to websites where users are limited to the active viewing of content that they created and controlled. Examples of Web 2.0 include social networking sites, blogs, wikis, video sharing sites, hosted services and mashups.

Widget

A widget is an element of a graphical user interface that displays an information arrangement changeable by the user, such as a window or a text box. The defining characteristic of a widget is to provide a single interaction point for the direct manipulation of a given kind of data. Widgets are basic visual building blocks which, combined in an application, hold all the data processed by the application and the available interactions on this data.

Wiki

A wiki is a website that allows the easy creation and editing of any number of interlinked webpages via a Web browser using a simplified markup language or a What You See Is What You Get (WYSIWYG) text editor. Wikis are typically powered by wiki software and are often used to create collaborative wiki websites, to power community websites, for personal note taking, in corporate intranets and in knowledge management systems. Wikis may exist to serve a specific purpose, and in such cases, users use their editorial rights to remove material that is considered 'off topic'. In contrast, open purpose wikis accept content without firm rules as to how the content should be organised.

WordPress

WordPress (<http://wordpress.org>) is an open source Content Management System, often used as a blog publishing application. It has many features including a plug-in architecture and a template system.

YouTube

YouTube (www.youtube.com) is a video-sharing website on which users can upload, share, and view videos. It uses Adobe Flash Video technology to display a wide variety of user-generated video content, including movie clips, TV clips, and music videos, as well as amateur content such as video blogging and short original videos. Most of the content on YouTube is uploaded by individuals, although media organisations including CBS and the BBC offer some of their material via the site, as part of the YouTube partnership program.

Annex A – Statistical Producer Consultation

Many stakeholders were identified within the statistical producer community, including Heads of Profession (HoPs) and Chief Statisticians, Theme Leaders, and our international peers. The sections below detail the initial consultations held with these groups. Consultation with these groups and the wider statistical producer community was ongoing throughout the development of this strategy.

Questions sent to Heads of Profession (HoPs) and Chief Statisticians

The National Statistician's Office contacted HoPs and Chief Statisticians asking for their views on current and future Web dissemination of official statistics. Responses are summarised below.

- Crucially, departmental official statistics producers do not have a separate Web dissemination strategy, but tend to conform to their own department's standards, as well as that of the Code of Practice and the Central Office of Information (COI) guidelines for websites.
- Most departmental official statistics producers did not have concrete statistics regarding user satisfaction or website usage and user feedback tended to be on an adhoc and problem-specific basis. Some departments, however, performed regular surveys of their users and used these results to implement user-oriented changes to their websites. For example, in 2008 the Health and Safety Executive conducted a large scale survey covering the content and format of their website, followed by telephone interviews. As a result of this, they are introducing an online tabulation tool. The Scottish Government uses a stakeholder consultation network, Scotstat, to monitor its user's opinions. They also conduct an annual stakeholder conference where views on their website were collected.
- Areas in which responding departments believed they were performing well were in increasing the availability of time series, the development of online tabulation tools (although this is not consistent across departments), the increasing availability of data for download, having a statistical site separate from the main departmental site (emphasising the independence of statistics), and interactive geographical mapping functions.
- Areas where responding departments believed they could improve were access to microdata, increasing the amount of data available for download, and amore joined-up, coherent approach between Government websites and in some cases, within sites.
- Areas identified as essential to a successful Web dissemination strategy were:
 - a) Technology: for creating and formatting tables on webpages, for accessibility and reuse, understanding the resources behind the Web and websites, and utilising third party tools.
 - b) Guidelines: awareness of COI and Government Statistical Service (GSS) Web standards, guidelines relating to presentation and formats
 - c) Understanding Impact: of releasing datasets and the role statisticians will play in this.
 - d) The user: learn about the users and their needs and that there is no such thing as an 'average' Web user.

Theme Leader Consultation

An approach to Theme Leaders highlighted certain areas for immediate focus, including:

- Making better use of administrative data,
- Increased need for regional and sub-regional data,
- Increasing access to microdata, and
- Making better use of Internet/electronic dissemination technologies, in terms of making data available, as well as improving explanation, clarity and the visual presentation of the statistical reports.

International Practices

Communication with, and research around, statistical organisations throughout the world highlighted some areas in which our international peers are leading the way in terms of Web dissemination. Some examples of this include:

- Statistics Netherlands has created an iPhone application that includes a geolocation function so that users can obtain demographic data for the areas they are in at the time, as well as a Statistical Yearbook for the iPad.
- Statistics Netherlands also uses Twitter to announce events and activities and currently has 11,000 followers.
- The Estonian Statistical Office writes a blog with ten editors, including the Director General.
- The US Census Bureau used a variety of social media to promote the 2010 Census, including tweets on Twitter and the use of blogs and Flickr for communication, 400 videos on YouTube to reach different ethnic groups, and press releases on Facebook, which has 95,000 'friends'.
- In 2011, Italy will be launching a new version of the Istat website based on an SDMX (Statistical Data and Metadata eXchange) datastore and open source WordPress software.
- The US Bureau of Labour Statistics arranged online Web chats for the most used statistics, where subject matter experts took questions on national employment and unemployment data.
- Statistics Estonia used slidesharing to help people to understand how to fill out forms in their Census.

Annex B – User Engagement.

Questionnaire sent to Statistics User Forum (SUF) members

	
Official Statistics Web Dissemination Questionnaire.	
Thank you for taking the time to complete this brief questionnaire.	
The National Statistician's Office Strategy team are developing an official statistics web dissemination strategy to ensure that the broader user need for access to official statistics is met.	
As users, you are the main drivers in the production of an official statistics web dissemination strategy. As such, we would like to hear your opinions on current web dissemination and any views you may have regarding the way forward for online dissemination of official statistics.	
We would be grateful for your responses by COP Thursday 24th June.	
1. Please state the user group or organisation that you primarily belong to:	<input type="text"/>
2. What type(s) of official statistics do you most regularly use, or are most important to you as a user? Please list all that apply.	<input type="text"/>
3. Finding official statistics online. We would like to know how you find official statistics online, i.e. what is your first port of call when looking for official statistics? Please rate the following in terms of preference (1 = most preferred method, 5 = least preferred method).	
Search Engine (e.g. Google, Yahoo)	<input type="text"/>
Publication Hub (www.statistics.gov.uk)	<input type="text"/>
ONS Website	<input type="text"/>
Other Departmental Website	<input type="text"/>
If other departmental website used, please state	<input type="text"/>
Other	<input type="text"/>
If other, please state	<input type="text"/>
4. Viewing official statistics. We would like to know which of the following resources are important to you. Please rate the following in terms of importance (1 = most important, 4 = least important).	
Standard reports (Commentary and analysis, including releases and reports)	<input type="text"/>
Online applications/visualisation tools	<input type="text"/>
Data available for download	<input type="text"/>
Other	<input type="text"/>
If other, please state	<input type="text"/>

5. Ease of use of official statistics.

Thinking about the statistics you listed in Question 2, when finding this information from standard reports, online tools, or data available for download, please tell us about the following:

	Standard Reports Commentary and analysis, including releases and reports	Online Tools Including tabulation tools, visualisation tools etc	Data Available for Download
Do you use this format?	<input type="radio"/> Yes <input type="radio"/> No If yes, please answer questions i) to iv) below regarding standard reports	<input type="radio"/> Yes <input type="radio"/> No If yes, please answer questions i) to iv) below regarding online tools	<input type="radio"/> Yes <input type="radio"/> No If yes, please answer questions i) to iv) below regarding data for download
	Very Easy Easy Neutral Hard Very Hard	Very Easy Easy Neutral Hard Very Hard	Very Easy Easy Neutral Hard Very Hard
i) How easy are they to find?	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
ii) How easy are they to understand?	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
iii) How easy are they to tailor to your own needs?	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
iv) How easy are they to download?	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>

6. The way forward.

If you know of any websites/tools that you believe exemplify best practice in the dissemination of statistics, or if there is any other requirement or functionality you would like to see employed in the dissemination of official statistics, please let us know:

Comments:

Many thanks for your time. Please click the 'Submit by Email' button below to return this questionnaire.

If you would like to be kept informed of developments regarding the official statistics web dissemination strategy, or if you would like to discuss this topic further, please email alison.byers@ons.gsi.gov.uk or call on 01633 651530.

Submit by Email

Questionnaire results

Summary

- 21 Responses were received.
- The majority of respondents used a search engine such as Google through which to find statistics. The second most popular option was to directly visit a known specialist site. Only one respondent stated that they used the Publication Hub as their first choice of method.
- Most popular other departmental and specialist websites used were DWP, DCLG and NOMIS.
- The majority of respondents stated that their preferred format for statistical information was data, rather than reports or applications.
- Respondents stated that standard reports were hard to find, easy to understand, hard to tailor to their own needs and easy to download. Online tools were stated to be somewhat hard to find but easy to understand, and data available for download was hard to find, but easy to understand, easy to tailor to their own needs and very easy to download.

Details

1. Responding user groups or organisations were:

- Universities
- Joseph Rowntree Foundation
- Housing Studies Association
- British Urban and Regional Information Systems Association
- Local Councils
- Colin Buchanan and Partners Ltd
- Charities/Think Tanks
- Sitra
- Capgemini Consulting
- National Centre for Social Research
- Regional Observatories
- Housing Statistics Network
- Health Statistics User Group

2. Statistics used were listed as:

- Neighbourhood statistics
- Environmental attitudes
- Behaviour surveys
- Climate change data
- Housing statistics
- Brownfield land data
- Labour market statistics
- Economic statistics
- Socio-demographic statistics
- Map boundaries
- Households below average income
- Population estimates
- Benefits data
- Gross value added
- Transport statistics
- Planning statistics
- Annual survey of hours and earnings
- Family resources survey
- Expenditure and food survey
- Business statistics
- Regional statistics
- DCLG statistics
- Higher education data
- Research and development data
- Community innovation survey
- UK research council data
- Gross domestic product
- Weather
- Regional accounts
- Health accounts
- Deaths

3. Preferred methods of finding official statistics

Method/Site Visited	1st Choice	2nd Choice	3rd Choice	4th Choice	5th Choice	No Rating
Search Engine	8	2	3	2	3	2
Publication Hub	1	5	7	5	1	1
ONS Website	4	7	3	3	3	0
Other Departmental Website	4	6	4	2	1	3
Other Website	5	1	0	2	1	11

Other departmental websites used were:

Department	Number of Mentions
Work & Pensions	6
Communities & Local Government	4
Welsh Government	1
Transport	1
Business, Innovation & Skills	1
Scottish Government	1
Education	1
NHS Information Centre	1
Health	1

Other websites used were:

Website	Number of Mentions
NOMIS	4
Higher Education Funding Council	1
Data4nr	1
ESRC Data Archive	1
Mimas	1
Data Unit Wales	1
North East Research & Information Partnership	1
Health Service Journal	1

4. Preferred formats for viewing official statistics

Format	1st Choice	2nd Choice	3rd Choice	4th Choice	No Rating
Reports	3	8	8	1	0
Applications	3	7	10	0	0
Data	16	4	0	0	0

5a. Ease of use of different formats

	Very Easy	Easy	Neutral	Hard	Very Hard	n/a
Standard Reports						
Find	1	5	3	7	1	3
View (Understand)	4	7	6	0	0	3
Analyse (Tailor)	0	5	5	6	1	3
Download	6	11	0	0	0	3
Online Tools						
Find	0	4	7	7	0	2
View (Understand)	1	12	4	1	0	2
Analyse (Tailor)	1	3	7	6	1	2
Download	1	5	8	2	2	2
Data to Download						
Find	2	5	4	6	3	0
View (Understand)	5	8	6	0	1	0
Analyse (Tailor)	3	13	2	1	1	0
Download	9	7	4	0	0	0

Annex C – Analysis of Drivers for Change.

The User Experience

Of critical importance in Web dissemination is a sound understanding of what users need. Producers understand what their primary customers need as they tend to be involved in the initial requirement setting, but other users are often product ‘receivers’ and have much more limited two-way engagement.

In addition to the difficulty in finding official statistics and getting them in appropriate formats, there has also been a rise in the expectations of users when it comes to the presentation of statistics. Organisations like Gapminder, Google, the BBC and other news media have significantly more resources invested in the dissemination of their information. This has led to a rise in user expectation. Many official statistics are therefore seen by users as being displayed in static, unfashionable and outdated ways.

Projects are underway to better meet the growing demands of users. For example, the Office for National Statistics (ONS) Web Development Programme, which aims to improve the ONS website to better support the use and reuse of statistics. Some official statistics producers have their own information and Web strategies and several, for example the Department for Work and Pensions (DWP), Defence Analytical Services and Advice (DASA), and the Welsh Government have implemented online tabulation capability. Across Government, however, current practice remains dominated by multi-layered websites, containing largely static tables in a PDF format. Official statistics producers clearly need to do more to ensure that the user can find the right statistics, quickly and easily.

The varying practices between departments can help to improve dissemination practices across Government by acting as a testing ground for new ideas. But it can also disadvantage the user, as differing practices can lead to differing metadata standards, lack of consistency, and different systems and formats, sometimes for the same statistics. A coherent and unified approach to the dissemination of official statistics is necessary in order to provide the best experience for users.

Making Data Available

The UK Government has made clear its commitment to transparency and open Government. In the Programme for Government¹⁹, there is reference to a new ‘right to data’, and also states that all data published by public bodies should be made available in an open and standardised format so that it can be used easily and with minimal cost to third parties. The drive for transparency and opening up public data is largely embodied within data.gov.uk²⁰. User consultation has highlighted the fact that users want data more than any other format. Producers can of course release aggregate datasets on their departmental websites, but links to these datasets must be available on data.gov.uk so that the site can act as a gateway to public datasets, much like the Publication Hub acts as a gateway to National and official statistics. Departments and the Devolved Administrations (DAs) have their own IT strategies for the release of information, but the Publication Hub and data.gov.uk provide a single point of access for those who do not know where to begin or who are seeking related products.

¹⁹ The Programme for Government:
http://www.cabinetoffice.gov.uk/sites/default/files/resources/coalition_programme_for_government.pdf

²⁰ data.gov.uk: <http://data.gov.uk/>

In releasing aggregate data for public use, producers must ensure that statistical datasets are made available in a way that allows the user to analyse the data, while preserving confidentiality and ensuring that the appropriate metadata are available with those datasets. The Central Office of Information (COI) provides guidance on the release of data underlying publications²¹. This guidance, however, states the minimum data standard when releasing underlying data and also provides a range of possible superior standards; therefore Government departments still produce underlying data in a variety of formats. The COI guidance also does not include standards for the release of large, stand-alone datasets, only those datasets that underlie published documents. There is a need for a single consistent approach to the release of data in an open and standardised format. The COI guidance does, however, support the view that producers should steer away from releasing data in non-open, proprietary formats such as Excel.

In considering the drive for transparency and the release of data, it is important to reconcile this need with the requirements of the Code of Practice for Official Statistics. For example, whilst the drive for transparency calls for the release of datasets, the Code of Practice demands the appropriate commentary be released around statistics in order to facilitate understanding. Therefore, it is essential that in making data available for use and reuse, aggregate datasets are not only released, but that the appropriate commentary, narrative and metadata are also released alongside those data in order to facilitate understanding and promote use. A GSS Transparency sub-group has been convened in order to address this and many other issues regarding the role of statistics and statisticians in the drive for transparency.

When releasing aggregate data for use and reuse, official statistics producers need to comply with a minimum data standard and format for data, as well as a standardisation of metadata classifications. COI are currently developing a quality mark to put onto Government publications, to indicate the extent of its reusability. This quality mark encapsulates the 5 star rating system described by Sir Tim Berners-Lee²² and indicates to the user what can be expected of the underlying data. It will also let the user know that the data is available on data.gov.uk.

LINKED DATA

- ★ Available on the web (whatever format), but with an open licence.
- ★★ Available as machine-readable structured data (e.g. Excel instead of image scan of a table).
- ★★★ As (2) plus non-proprietary format (e.g. CSV instead of Excel).
- ★★★★ All the above, plus use open standards from W3C (RDF and SPARQL) to identify things, so that people can point at your stuff.
- ★★★★★ All the above, plus link your data to other people's data to provide context.

IS YOUR DATA 5 ★ ?

W3C 5 Star Data Guidelines
<http://www.w3.org/DesignIssues/LinkedData.html>

In terms of standards for publishing statistical data, statistical institutes around the world recommend use of the Statistical Data and Metadata eXchange (SDMX)²³ standard. This facilitates the sharing and combining of data from different sources. Official statistics producers should seek to release aggregate data and metadata in this form, but will require guidance on how this can be achieved. Inspiration and guidance can be drawn from

²¹ COI guidance 'Underlying Data Publication': <http://coi.gov.uk/guidance.php?page=371>

²² W3C website: Is your data 5 star? <http://www.w3.org/DesignIssues/LinkedData.html>

²³ The SDMX initiative: <http://sdmx.org/>

international experience. For example, this year, Italy will be launching a new version of the Istat website based on an SDMX datastore and open source WordPress software.

International Practices

The dissemination practices of other countries can inspire developments in our own techniques. Sites from Austria, Finland, and Sweden, are acknowledged to be some of the best in Europe and the Australian Bureau of Statistics and Statistics South Africa are also widely renowned. These sites have links to statistical databases and catalogues, interactive data tables, downloadable data and metadata, access to microdata and a good number of interactive visualisation tools.

Eurostat has recently been considering the dissemination of European official statistics. In an assessment review of European Government websites²⁴, an emerging theme was that the sites seem to be producer-centred, rather than user-centred. The clear direction is that focus should be changed from what is best for the producer to what is best for the user. Outputs should not be determined by the producing organisation's structure, or by the working methods of statisticians, but should be designed to make sense to, and meet the needs of, users of those statistics.

Eurostat's focus is to maintain and most importantly develop existing websites in order to optimise the range of data extraction and visualisation tools available. To improve the visibility of statistics and statistical producers, they recommend that producers make use of the latest technological options to achieve maximum reusability of data and tools.

Social Media and Portable Media

Social media use among users is growing rapidly. Some UK official statistics producers already use social media to disseminate statistical information. For example, the Northern Ireland Statistics and Research Agency (NISRA) uses a Facebook page to keep interested parties updated on new official statistics and research publications, the NHS Information Centre (NHS IC) uses Twitter to extend their reach, provide an informal voice and promote debate, ONS use YouTube videos to inform on statistical concepts as well as providing a verbal and visual presentation of some statistical products such as the Labour Force Survey, and Welsh Government use Twitter to announce the publication of all statistical releases and give information about consultations and events. However, social media is not being used by official statistics



NISRA Facebook page

<http://www.facebook.com/pages/Northern-Ireland-Statistics-Research-Agency/131044496943228>

²⁴ Peer review on the implementation of the European Statistics Code of Practice, UK: http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/PEER_REVIEW_UK_2007/EN/PEER_REVIEW_UK_2007-EN.PDF

producers to its full potential. As at March 31st 2011, two billion people were online²⁵ and 750 million of those were active Facebook users (i.e. use Facebook at least once a month)²⁶. Of course, there are many variations of social media, such as sharing 'likes' via sites such as Delicious, microblogging on sites like Twitter, or interacting with peers in social groups on sites like Facebook.



ONS YouTube Channel
<http://www.youtube.com/user/onsstats>

There are many examples of international sites leading the way in terms of social media and technology use. Statistics Netherlands uses Twitter to announce events and activities and currently has 11,000 followers. The Estonian Statistical Office writes a blog²⁷ with ten editors, including the Director General. The US Census Bureau used a variety of social media to promote the 2010 Census, including tweets on Twitter and the use of blogs and Flickr for communication, 400 videos on YouTube to reach different ethnic groups, and press releases on Facebook, which has 95,000 'friends'. The US Census Bureau also found that not only

communicating via social media, but buying advertisements on social media sites such as Facebook were also useful in raising awareness of the Census.

In addition to social media, the increase in the use of portable media should also be considered. UK adults have high levels of Internet access (77%) and 45% of individuals connect to the Internet via a portable device²⁸. With the popularity of tablet computers and smartphones, all with access to the Internet and many hundreds of 'apps', official statistics producers could develop applications to reach individuals interested in particular statistical products or data.

There are existing examples of portable media being utilised for the dissemination of official statistics, such as the Higher Education Statistics Agency (HESA) developing an iPhone application containing data about the UK Higher Education sector. Internationally, Statistics Netherlands



Screen shots from the Statistics Netherlands iPhone application
<http://www.cbs.nl/en-GB/menu/cijfers/statline/iphone/iphone-applicatie-statline.htm>

²⁵ Internet World Stats: <http://www.Internetworldstats.com/stats.htm>

²⁶ Facebook statistics: <http://www.facebook.com/press/info.php?statistics>

²⁷ Estonian Statistical Office blog (in Estonian): <http://statistikaamet.wordpress.com>

²⁸ ONS Internet Access 2010, Households and Individuals: <http://www.statistics.gov.uk/pdfdir/iahi0810.pdf>

have also created an iPhone application that includes a geolocation function so that users can obtain demographic data for their current location, and have also launched a Statistical Yearbook for the iPad.

As technology has advanced, so has the user thirst for flexible information. That is, information that can be 'sliced and diced' according to users' own needs and that can also be merged with other sources of reference data, such as geography. In parallel, Sir Tim Berners-Lee's data.gov.uk initiative seeks to address broader user demand for access to Government data, and through the emergence of user-developed applications, aims to provide unlimited potential to better exploit official data.

The rate of change for technology is very high. As such, this is an area that needs to be monitored constantly to ensure proper awareness of alternative methods and technologies that could be applied to official statistics dissemination. For example, RSS (Really Simple Syndication) feeds can be used to publish frequently updated works in a standard format. Users can subscribe to these feeds so that information is sent to them directly, without having to search for it each time it is updated. Application Programming Interfaces (APIs) are critical in developing flexibility in the dissemination of information and places ever more emphasis on the need for appropriate metadata. Most producer departments already offer RSS feeds. ONS and data.gov.uk (Cabinet Office) are currently developing APIs to facilitate access to their underlying datasets. The development of Web 2.0 has also enabled the introduction of Linked Data, which allows sharing and connecting pieces of data, information, and knowledge via the Web. This is an area that requires further investigation, as Linked Data is perfect for semantic knowledge, but may not be appropriate for statistical data. These technologies must be offered to users in a way that explains their purpose as well as the benefits of use; else users will not choose them as routes to official statistics.

Other Organisations

External bodies have also been considering their information access and dissemination strategies. In 2009, the BBC announced a review of their strategy to address how they could best continue to serve audiences in the face of advances in technology and a rapidly changing media

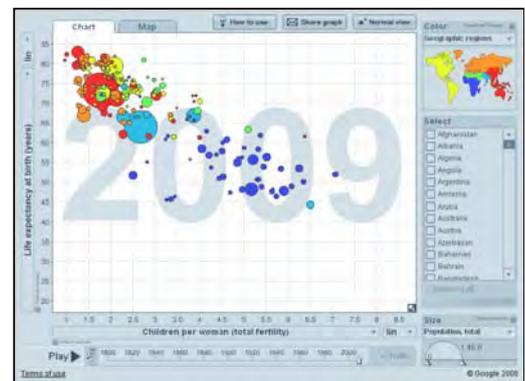
The screenshot shows the Guardian Datablog interface. At the top, it says 'guardian.co.uk DATABLOG Facts are sacred'. Below that, it indicates the date 'Tuesday 29 March 2011'. The main article is titled 'Why mapping toilets is a great use of government open data' with a sub-headline 'the great british public toilet map'. There is a map of the United Kingdom showing public toilet locations. Below the map, there is a quote from Gail Knight: 'Information about public toilets' locations, opening times and facilities is vital'. A 'Continue reading' link is provided. Below this, there is a section titled 'UK GDP since 1948' with a line chart showing 'GDP change from peak' over time. The chart shows a significant dip during the 'Great Depression' and another during the '2008-09 recession'. A 'Continue reading' link is also present for this section.

Guardian online datablog
<http://www.guardian.co.uk/news/datablog>

landscape. Their new strategy²⁹ focuses on four main areas: quality, focus, efficiency and market impact. One aspect of the BBC's strategy was to do fewer things but to do them better. This means that their website will have half the amount of sections, closing down lower performing areas, and turning the site into a 'window to the Web' by housing more links to external websites. Given the strength of the BBC brand and the trust associated with it, this is a potential opportunity for official statistics producers.

The Guardian newspaper's online datablog³⁰ is a good example of how to better utilise the Web in dissemination practices. It allows users to comment on and publicly react to topical events. The Guardian is also prominent in its use of crowdsourcing, using the wider community to identify potentially interesting news stories for further investigation.

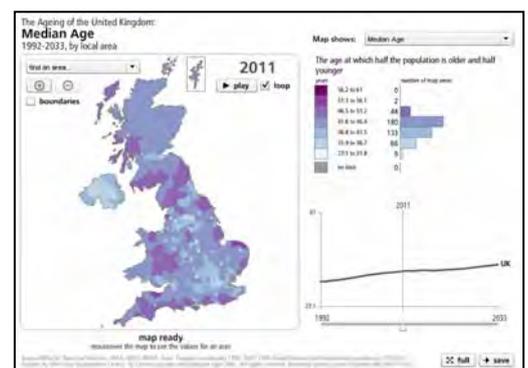
Google's strategic vision is "to organize the world's information and make it universally accessible and useful". Google offers online productivity software, social networking tools, desktop applications, mobile operating systems and is listed as the Internet's most visited website³¹. Importantly, Google uses open source code. This allows developers to produce similar applications and systems that will be compatible with other operating systems. Google provides a potential partnership area in that of Google Labs' Public Data Explorer³². This aims to help disseminate data more widely. It makes large datasets easy to explore, visualise and communicate. Currently the World Bank, Eurostat and several US Bureaus supply data to the Public Data Explorer. It is understood from other countries' experiences, however, that one of the conditions of working with Google is to relinquish any control over the products created from those data.



Gapminder World

<http://www.gapminder.org/world>

The Gapminder organisation believes in "unveiling the beauty of statistics for a fact based world view". Gapminder uses its 'Trendalyzer' software to illustrate and animate statistical time series in order to promote an evidence-based view of the world and uses it to dispel many 'myths' regarding the state of the world today. Gapminder currently receives data from many sources, including the International Labour Organisation, the World Bank, British Petroleum and the World Health Organisation. This is an inspiring example of a visualisation tool that could be utilised with UK official statistics data. ONS has developed similar map-based visualisations to



ONS mapping tool: Ageing population

<http://www.statistics.gov.uk/ageingintheuk/agemap.html>

²⁹ BBC Strategy Review:

http://www.bbc.co.uk/bbctrust/assets/files/pdf/review_report_research/strategic_review/interim_conclusions.pdf

³⁰ Guardian online datablog: <http://www.guardian.co.uk/news/datablog>

³¹ Source: Experian Hitwise UK: <http://www.hitwise.com/uk/datacentre/main/dashboard-7323.html> (statistics for the week ending 2nd July 2011)

³² Google Labs' Public Data Explorer: <http://www.google.com/publicdata/home>

convey ageing population trends throughout the UK. These have been very well received by users, including the media³³. These applications act as ‘shells’ for information, in that the underlying data can be changed relatively easily. This means that one application or visualisation can serve a variety of datasets.

Partnerships with organisations such as these can dramatically enhance the visibility of official statistics and can help to ensure that data are used to their full potential, beyond that which can be resourced internally. These organisations are willing and eager to work with producers to enhance official data analysis and understanding of official data. There are some good examples of working partnerships within statistical organisations. Eurostat contributes data to Google’s Public Data Explorer and as a result, official data receives a higher ranking in Google searches. For example, search for ‘unemployment’ in Google and a graph of Eurostat data appears on the first search page. Statistics Netherlands enables users to access neighbourhood data within Google Earth, adding an additional layer of statistical information to the normal set of layers within Google Earth.

The Devolved Administrations

When discussing ‘UK official statistics’, thought should be given to the fact that for many topic areas, statistics are produced by the DAs for each country, and not at a UK level. For these statistics, the UK’s decentralised approach to the production of official statistics is less of an issue, as statistics regarding Scotland are produced by, and published on the website of, the Scottish Government, statistics regarding Wales are produced by the Welsh Government and published on their Statistics for Wales and StatsWales websites, and statistics regarding Northern Ireland are produced by the Northern Ireland Executive and published on the NISRA website. This makes it much easier for regular users to find statistics related to the DAs.

In terms of this strategy, the challenge facing the UK Government and the DAs is improving the availability of statistics and data to users. The UK Government is addressing this issue with initiatives such as the Transparency agenda and the creation of the data.gov.uk website. These initiatives, however, are specific to the UK Government. The Scottish Government programme of public sector reform has at its heart; “creating a clearer, simpler and more effective public sector for the people of Scotland”. This has progressed with pace, including increasing and promoting openness and transparency via sites such as ScotStat. The Welsh Government makes a wide range of detailed statistics available on the StatsWales website and similarly, the Northern Ireland Executive utilises the NISRA webpage to host statistical information in one place.

However, this strategy is seeking to improve overall accessibility to official statistics, regardless of where they are produced and proposed actions are suggested in addition to release on departmental and DA websites. There are also users that require cross-country comparisons for related statistics and without a single portal to all official statistics this would mean the user would have to visit several different websites to find the information pertaining to the different countries.

³³ Ageing Britain: http://www.bbc.co.uk/blogs/thereporters/markeaston/2010/10/ageing_britain.html

Annex D – Chronological Summary Actions Table.

No:	Action	Owner	Priority	To be completed
2a	To ensure a perpetual feed between the Publication Hub and data.gov.uk.	ONS Publication Hub Liaison Team	High	Ongoing
9a	To have oversight of the implementation of the above actions.	GSS PDC	High	To begin July 2011
9b	To raise awareness of the strategy, collate and share good practice, both via StatNet and a series of Web dissemination 'events'.	GSS PDC	Medium	September 2011
7a	To collect information on available training courses on producing content for the Web and endeavour to make them available throughout the producer community.	GSS PDC/ GSS HRC	High	December 2011
3a	To work with the Cabinet Office to ensure that official statistics producers are engaged with making aggregate data available in suitable formats.	GSS PDC Transparency Sub-Group	Medium	December 2011
4a	To draw together current partnering arrangements across the GSS to share experiences and opportunities with all producers.	GSS PDC	Medium	December 2011
4b	To champion potential partnering arrangements across the GSS, following on from census dissemination arrangements.	ONS	Medium	To begin December 2011
5a	To produce National Statistician's guidance on the appropriate use of social media across all departments, drawing on examples of current practice.	SPSC	Medium	December 2011
6a	To compile examples of good practice in the use of technology in the dissemination of official statistics and find innovative ways of building on this amongst official statistics producers.	GSS PDC	High	December 2011

No:	Action	Owner	Priority	To be completed
3b	To develop guidance on the creation of aggregate datasets to SDMX standard in conjunction with the Cabinet Office.	GSS PDC	Medium	March 2012
3c	To adhere to SDMX guidelines, produced by GSS PDC and CO, when producing and releasing aggregate data and metadata.	HoPs	Medium	To begin March 2012 then ongoing
5c	To raise awareness of good practice in the use of social media both via StatNet and a series of Web dissemination 'events'.	GSS PDC	Medium	March 2012
6c	To raise awareness of good practice in the use of technology, both via StatNet and a series of Web dissemination 'events'.	GSS PDC	Medium	March 2012
6d	To develop a search engine optimisation strategy in order to improve the visibility of official statistics on external search engines.	ONS Publication Hub Liaison Team	Medium	April 2012
1a	To enable the Publication Hub to receive links to all official statistics.	ONS Publication Hub Liaison Team	High	April 2012
1b	To issue guidance strongly urging producers to publish links to all official statistics on the Publication Hub.	National Statistician	High	April 2012
1c	To develop options for the future of Publication Hub capability.	NSO	Medium	April 2012
5b	To review the use of social media as a potential means of disseminating statistics, in line with NS guidance.	HoPs	Medium	Initially by May 2012 then ongoing
6b	To review current practice in the use of the Web and associated technologies in light of examples from GSS PDC.	HoPs	Medium	Initially by May 2012 then ongoing
2b	To enable the Publication Hub to receive links to underlying aggregate data and metadata and include publishing guidance for official statistics producers.	ONS Publication Hub Liaison Team	Medium	June 2012



