**Changing How We Communicate Quality and Methods to Our Users**

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**Abstract**

*How many of us can successfully build a flat pack piece of furniture without good instructions? Not many! Similarly, our data users need clear and concise quality and methods information to help them make better use of our data.*

*At ONS, our products were previously designed to suit a paper format, heavily based on templates and containing lots of static information. With changing user needs and an emphasis on digital publications, we needed to develop new ways of communicating quality and methods to our users.*

*We created a new strategy for communicating quality and methods based on meeting a wide range of user needs while being current, relevant and helpful to users. ONS analysts are encouraged to foster a sense of curiosity about their data so that they are able to share the most useful and meaningful quality and methods information that a) alerts users to potential limitations and b) helps users decide on suitable uses for the data.*

*In this paper I will discuss how we used this approach to build quality and methods information into the structure of a new style of statistical bulletin which focuses on the story that the data is telling. This integral quality and methods information better enables users to make good decisions on the use of that data.*

I’ll *discuss the results of user testing that informed updates to our Quality Summaries and the creation of a new detailed Quality and Methodology Information report. I’ll briefly discuss our Quality Information User Profiles which will help producers make decisions on what information to share.*

*Finally, I will explain how our quality and methods products work together to create a layered approach to communicating the strengths and limitations of our data in a way that is accessible to all.*

**Key words: Quality, users, communication, engagement**

**Paper**

**1. How did we traditionally talk to users about the quality and methods of our data?**

Since 2011, the Office for National Statistics (ONS) have published Quality and Methodology Information (QMI) Reports which sit alongside all statistical bulletins. The original QMI Reports are based on a template and discuss the quality of the statistics and raise points of note that need to be taken into consideration when using them. It covers the European Statistical Systems (ESS) Dimension of Quality and other important quality characteristics; Output quality, About the output, How the output is created, Validation and quality assurance, Concepts and definitions, Output quality trade-offs, User needs and perceptions and Sources for further information or advice.

The information contained in the original QMI Reports changes infrequently, usually once a year, and so can get out-of-date. It’s published as a .PDF and published on the ONS website in a seperate area to the related statistical bulletin.

In additon to the QMI Reports, ONS statisticians also provided backgound information within statistical bulletins. This was held at the back of the statistical bulletin and often included repetitive content unrelated to the story told by the statistics.

**2. Why did we need to change how we communicated Quality and Methodology to users?**

A great deal has changed within the digital environment in the seven years since the original QMI Report was designed. There is a need for Government content to be easy to navigate and accessible to a wide range of users.

In 2016, the ONS website was redesigned and thorough user research and testing undertaken. The research found that although the original QMI Report was suitable for Expert Analysts, all user types (Inquiring citizens, Information Foragers, Technical Users, Policy influencers and Expert Analysts) used the QMI to find out more about the data.

To remain relevant and helpful to our users we needed to evolve how we communicated quality and methods information to meet their diverse needs.

**3. Where did we start?**

We started off by thinking about how we could make quality reporting more accessible to a wide range of users. We thought about what the QMI was designed to do; to provide users with enough information about the strengths and limitations of the data so that they can make informed decisions on suitable uses of the data. Is that all a QMI should do for our users? We decided that no, a QMI should also help reduce the risk of misusing our data.

This led to the creation of the first step in a new layered approach to quality reporting within ONS: Quality Summaries. We followed these up with new ways of reporting on quality information within statistical bulletins and finally reviewed and updated the QMI.

**4. Creating new quality reporting products**

**4.1 Quality Summaries**

As a first step to broadening the reach of our quality reporting, we decided to develop a product that would work with the QMI and make it more accessible to all user types to help those without extensive knowledge of our data understand the important quality issues that impact on how the data can be used.

The results of this research started to change the way we thought about providing quality and methodology information to our users. We recognised the need to provide tailored information for each output, instead of working from a template. We decided to frontload the information so that the important points would be first in the document and so easier for users to find. The results clarified how important it was to understand user needs and structure our quality reporting products in a way that was most helpful for them.

This [research](http://www.ine.es/q2016/docs/q2016Final00065.pdf) (Tucker, 2016) resulted in the development of Quality Summaries which consisted of two sections: Important points about this data and Overview of the output.

**4.2 Quality information within statistical bulletins**

Shortly after the Quality Summaries were developed, a project to review our main statistical product, the statistical bulletin, began. The focus of this project was to streamline the bulletins, strengthen how the story of the statistics was told and improve how quality was communicated to our users.

At the time, most of the quality and methodology information in bulletins was included in a section at the back of the bulletin called “Background Information”. This section was frequently very long, included information that wasn’t relevant or targeted for what the bulletin contained and was usually repeated from one time period to the next, rarely changing. This meant that the information was not as meaningful and helpful to users as it should be.

Through a series of three week sprints which included colleagues from various disciplines within ONS, including Quality Centre, the Publishing Team and statistical producers, we worked through several statistical products identifying good practice and discussing ways to improve the bulletins.

One of the key results from these sprints was designing the statistical bulletin to have current, relevant, helpful and tailored quality and methodology information built into the structure.

Building on the starting blocks of the Quality Summaries, we used the same principles of tailoring and frontloading information to develop guidance for quality information within statistical bulletins.

**4.2.1. What quality and methodology information should we include within statistical bulletins?**

The aim of quality information within statistical bulletins is to help users understand the quality of the statistics within the statistical bulletin and any related implications for use. Quality warnings/caveats on specific issues relating to the data should be reported on in the statistical bulletin.

There are three categories of quality information within statistical bulletins: 1. Things you need to know, 2. Critical quality warnings, 3. Quality and methodology.

**Things you need to know section:**

This section should include any vital information (for example common pitfalls when using data or discontinuity) that will affect the use of the data within the statistical bulletin. It should inform users against inadvertent misuse and help them to understand suitable uses for the data. The section should be structured in descending order of importance.

**Critical caveats/quality warnings:**

Any critical quality caveats or warnings should be included within the commentary besides the points that they relate to. These can also be included in Things you need to know.

**Quality and methodology section:**

The information in this section includes details that will help the user decide suitable uses for the statistics and signpost to other information that will further inform the user on the methods used to create the data and what the data is used for such as a QMI Report or user guides.

**4.3. A new Quality and Methodology Information Report**

For our next step in creating the layered approach, we reviewed the original QMI Report to find out who uses it, what they use it for, whether we are meeting the needs of its main users and what we could do to improve its usefulness to them.

The best way to find out the answers to these questions about users is to ask them, so we partnered with colleagues in our Digital Services Division to carry out some user testing. We carried out a series of five user tests which enabled us to understand who used the data, what they used it for and what we could add to it.

As a result of this user testing we created a suggested contents list for statistical producers to take as a starting point in completing a QMI Report.

**Figure 1.** **Suggested content for a Quality and Methodology Information (QMI) Report**

(Standard text for all documents)

**About this Quality and Methodology Information Report**

This quality and methodology document contains information on the quality characteristics of the data (including the European Statistical Services 5 dimensions of quality) as well as the methods used to create it.

The information in this document will help you to:

 Understand the strengths and limitations of the data

 Learn about existing uses and user of the data

 Reduce the risk of misusing data

 Help you to decide suitable uses for the data

 Understand the methods used to create the data.

**Quality summary**

4. Strengths and limitations of the \*name\* data

5. Recent Improvements to the \*name\* data

1. Important points about the \*name\* data

2. Overview of the \*name\* data

3. Uses and users of the \*name\* data

**Quality Characteristics of the \*\*\*\* Data**

6. Relevance

7. Accuracy

8. Output Quality

9. Coherence and comparability

10.Concepts and Definitions (Including list of changes to definitions)

11. Geography (Including list of changes to boundaries)

12. Accessibility and clarity

13. Timeliness and punctuality

14. Why you can trust our data

**Methods used to produce the \*\*\*\* data**

18. How we quality assure the data

19. How we disseminate the data

20. How we review the data

15. How we collect the data/Main data sources/Accuracy of data sources

16. How we process the data

17. How we analyse the data

**Other information**

21. How to cite this document

We created a pilot of the new QMI for the UK House Price Index and tested it with a small number of Information Foragers and Inquiring Citizens. We designed tasks for the users to undertake while in the test environment and also asked their opinion on the content. All four users in the face-to-face testing were successfully able to complete the tasks and provided positive feedback on the content of the document.

**4.4 Quality information user profiles**

As well as producing the suggested contents list, the results of the user tests informed the creation of Quality information user profiles designed to help statistical producers understand what their users want from quality and methodology information. These profiles describe how each user type uses quality information; what their motivators are; their “must-haves” and what they want from quality and methodology. The profiles also state what producers must do and must not do for each user type. You can see an example of a User Profiles for the Inquiring Citizen in Figure 2.

**Figure 2. Quality Information User Profile - The Inquiring Citizen**

|  |  |  |
| --- | --- | --- |
| **Uses quality information:** | | **Motivators :** |
| * To underpin learning * To gain a wider understanding * To support issues being taken forward * To ascertain that quality criteria are met | | * Has an enquiring mind – interest will be sparked by engaging content titles and images * Looking for trustworthy information |
| **Quality information must haves for Inquiring Citizens:** | |
| * Accessibility * Accuracy * Assessment of user needs and perceptions * Trust in Official Statistics * Clarity * Comparability * Concepts and definitions | |
| **Inquiring Citizens also want:** | |
| * Coherence * How the output is created * Output quality * Output quality trade-offs * Relevance | |
| **WE MUST** | **WE MUST NOT** |
| * Provide engaging content * Give information on the trustworthiness of our data | * Regularly change format or location of data * Use language that is too complex * Give the impression of any political agenda or bias |

**5. The foundations of communicating quality and methodology**

To successfully create a layered approach to communicating quality and methodology to a wide range of users, there are some actions and behaviours that producers need to adhere to when deciding what information we provide to our users. The elements below were developed during our review of the QMI but are relevant to any communication of quality and methods to users.

* **Remember our goal:** To help users make better decisions about our statistics
* **Identify user needs:** Identify user types and their needs: tailor information to these needs.
* **Continually evaluate user needs:** Evaluate user needs on a regular basis to ensure that your quality and methods information remains current, relevant and helpful to users in response to changes in quality and methodology.
* **Be curious:**Foster a sense of curiosity about your data and the information needed to use it appropriately. Ask yourself Why, why, why?
* **Use the content lists as a guide not a template:**Every output is different and so the quality and methods information needed will vary for each one. If one of the subheadings in the QMI is not meaningful for your statistical bulletin, don’t use it.
* **Explain impact, don’t just describe issues:** Giving the reasons why a process has been chosen etc. and explaining what the impact of that on the use of the data is, will be more useful to users than just a description.
* **Layer the information:** Present the information according to the inverted pyramid of communication.

Figure 3 Layering quality information

**Example:**

Quality Information within ONS Statistical Bulletin

1. Things you need to know

2. Critical Caveats within text

3. Quality and Methodology

**Example:**

QMI

1. Quality Summary

2. Quality Characteristics

3. Methods used to create the data

**5.3 How quality and methods products work together**

**What’s the difference between quality information within statistical bulletins and QMIs?**

|  |  |
| --- | --- |
| **Quality information within statistical bulletins** | **Quality and Methodology Information Report (QMI)** |
| The main focus is on:     * Reducing the risk of misusing data within the statistical bulletin * Helping users to decide suitable users for the data within the Statistical Bulletin | Is designed for a broad range of user types to:   * Reduce the risk of misusing data * Understand the strengths and limitations of the data * Learn about existing uses and users of the data * Help users to decide suitable uses of the data * Understand the methods used to create the data |
| Information should primarily\* relate to the story being told by the data.  \* Though it should include discontinuities over time etc. that affect how the data can be used. | Covers information over the lifetime of the data. |
| Succinct main points. | Goes into more detail on a wider range of topics. |

**6. Conclusion**

ONS Quality reporting products needed to be adapted to be accessible to a wide range of users and be suitable for a modern digital environment. We started off by creating Quality Summaries, a product designed to help users reduce the risk of misusing data.

We built on the ideas of creating tailored and layered information from the Quality Summaries to build quality and methodology information into the structure of our statistical bulletins.

Our next step was to take the lessons learnt from the two previous projects and apply them to improve the Quality and Methodology Information (QMI) report. We carried out a series of user tests to determine what our users really need from the QMI and created a new suggested contents list. We added value to our research by using it to create Quality information user profiles that will support statistical producers in completing QMI reports.

We developed a list of actions and behaviours that we need to adopt to ensure that we are giving our users the information that they need to make the best decisions available from our data.

Following these steps, we have now created a cohesive set of quality reporting products that work together to provide users of our data good, easily accessible and understandable quality and methodology information.

**7. References**

Tucker, S. (2016) Reviewing Aspects of User Orientated Quality Reporting. Available at <http://www.ine.es/q2016/docs/q2016Final00065.pdf> (Accessed 31 May 2018)