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Building a website, a Digital Publishing capability and a reputation

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Introduction

The Statistics and Registration Act 2007 established the UK Statistics Authority (UKSA) as an independent body at arms length from government. UKSA is responsible for oversight of the UK statistical system and as such has a role in monitoring the quality of official statistics against a Code of Practice. The Office for National Statistics (ONS) is the Authority's executive office, the UK's largest independent producer of official statistics and is the recognised national statistical institute for the UK. It is responsible for collecting and publishing statistics related to the economy, population and society at national, regional and local levels.

In 2013, ONS recruited a Deputy Director for Digital Publishing and established a Digital Publishing Division to recognise the increasing importance of the digital agenda, and to professionalise the publication of online statistical releases. This paper looks at two areas: building a new website and establishing a Digital Publishing Division, and the drivers for change, the opportunities, the challenges and outcomes involved.

**Building a new website Drivers for
change**

Reputation: ONS has a website that serves around a million users a month and publishes many of the key statistics that influence the UK economy and politics. That website has been called "...a national embarrassment.", "...virtually unnavigable" and "the worst, most important, website in the UK." Users have reported "feeling like crying" when they have to use it, and some avoid it if they possibly can, using intermediary websites to access the headline figures.

Core business: ONS does not publish in print format and so requires an excellent website to help avoid the misinterpretation of statistics, ensure equal access to statistics for all, and to meet user expectations at a time when many open data providers are utilising the intrinsic advantages of the web, to allow users more control over how they consume statistics.

Parliamentary pressure: A Public Administration Select Committee – a committee of members of parliament appointed by the House of Commons to examine the quality and standards of administration within the civil service – held a hearing on communicating

statistics¹. In May 2013, the members urged the UK Statistics Authority to improve the ONS website and to publish more data in machine readable formats.

Risk of disruption to business: In January 2014, following several months of effort to make improvements to the current ONS website, there was an unplanned outage for 11 hours during working hours. While releases were still published on a back-up site to ensure their availability, the reputation of the ONS deteriorated further. This led to an independent review of the technology which concluded that the current website was not fit for purpose and should be retired.

Rising user expectations: Over the same time period (2011-2014) the UK Government had established a central Government Digital Service which was saving £billions, partly through creating a single website, GOV.UK, to replace many government departmental websites. Public sentiment, although mixed, was largely positive, especially about the cost savings in developing more effective digital services such as renewal of vehicle tax online. User expectations were rising, at a time when the ONS had a poor website and was still operating paper-based data collection services.

New opportunities

Digital as a government priority: UKSA was exempt from migrating the ONS website to the central GOV.UK website² due to its responsibilities to the devolved administrations (Scotland, Wales and Northern Ireland). However, the Government Digital Service has a principle of working openly, sharing what it does online. This provided an opportunity for ONS to learn from other experts in government. Three things in particular helped: the Government Service Design Manual³ outlining best practice in delivering digital services in government; the Service Assessments which provided useful interventions at different stages of development to ensure the delivery was meeting the “Digital by Default Service Standard”⁴; the opportunity to join a cross- government network of digital leaders to share knowledge.

New technologies: Rather than having to build on a legacy solution, the team were able to build a ‘green-field’ website making the most of the latest technology (eg cloud based Infrastructure as a Service). Approaches that were new to the UK Civil Service such as Agile and DevOps methodologies reduced the likelihood of repeating the mistakes which led to the current website being unfit for purpose.

New skills: The Digital Publishing Division was able to recruit 27 new posts into the organisation. Three branches were established: Digital Publishing Operations, who support statisticians in publishing to the website and manage any improvements to the current website; Digital Content who design new digital-first content such as infographics, data visualisation, social media and short articles; Digital Transformation who focus on building a new website, rationalising the wider ONS web estate and releasing open data. New roles included a Head of Digital Transformation, Delivery Manager, Product Manager, Performance Analyst, Data Analysts, User Researcher,

¹ <http://www.parliament.uk/business/committees/committees-a-z/commons-select/public-administration-select-committee/news/publication-of-communicating-statistics-report/>

² <https://www.gov.uk/>

³ <https://www.gov.uk/service-manual>

⁴ <https://www.gov.uk/service-manual/digital-by-default>

Technical Architect, Developers, Web Operations, and Content Designers. In addition, skilled teams working on digital products in different parts of the organisation were brought into the Division.

Open data maturity in the UK: The UK is currently ranked first in the world for Open Data according to the World Wide Web Foundation.⁵ The Open Data Institute (ODI) was founded in the UK in 2012, bringing together world class open data experts. ONS were able to partner with the ODI to prototype innovative approaches to data publishing.⁶ This work informed decisions about how to build the new ONS website.

Challenges and outcomes

Managing feedback: Engaging with users was key, but there was a limit to how quickly we could deliver what users were asking for. We were conscious of ‘feedback fatigue’ after two years of managing the negative feedback from users. To avoid further reputational damage we had to show that we were listening to users and acting on their feedback. We did this by ‘working in public’, updating a blog every week with our progress.⁷ We also engaged a group of “Critical Friends” – some who had expressed strong views about our capability – to engage in user testing and challenge us constructively throughout the development of a new website.

Repairing our digital reputation: Our ability to immediately improve the ONS website was limited. Third party channels such as Twitter, enabled us to focus on the content, rather than the technology. By engaging with users, presenting a human voice for the organisation and delivering quality content, we could raise both awareness of our work and the reputation of the organisation.



Whoever is running the @ONS Twitter right now deserves some kind of award for good humour and self-deprecation under statistical fire.

[Reply](#) [Retweet](#) [Favorite](#) [More](#)

We trained a small number of “Chatisticians” to use Twitter and Hootsuite to manage timely responses to users’ queries. We used Storify to give an insight into events such as user forums and to group together social media narratives to make it easy to follow a data story. Twitter followers increased from 25,000 in March 2013 to 112,000 in March 2015. ONS was used by others as an example of how to use social media to turn around the reputation of an organisation.

⁵ <http://www.opendatabarometer.org/report/analysis/rankings.html>

⁶ <http://theodi.org/blog/publishing-open-statistical-data>

⁷ <http://digitalpublishing.ons.gov.uk/>



Pritesh Patel
@priteshpatel!

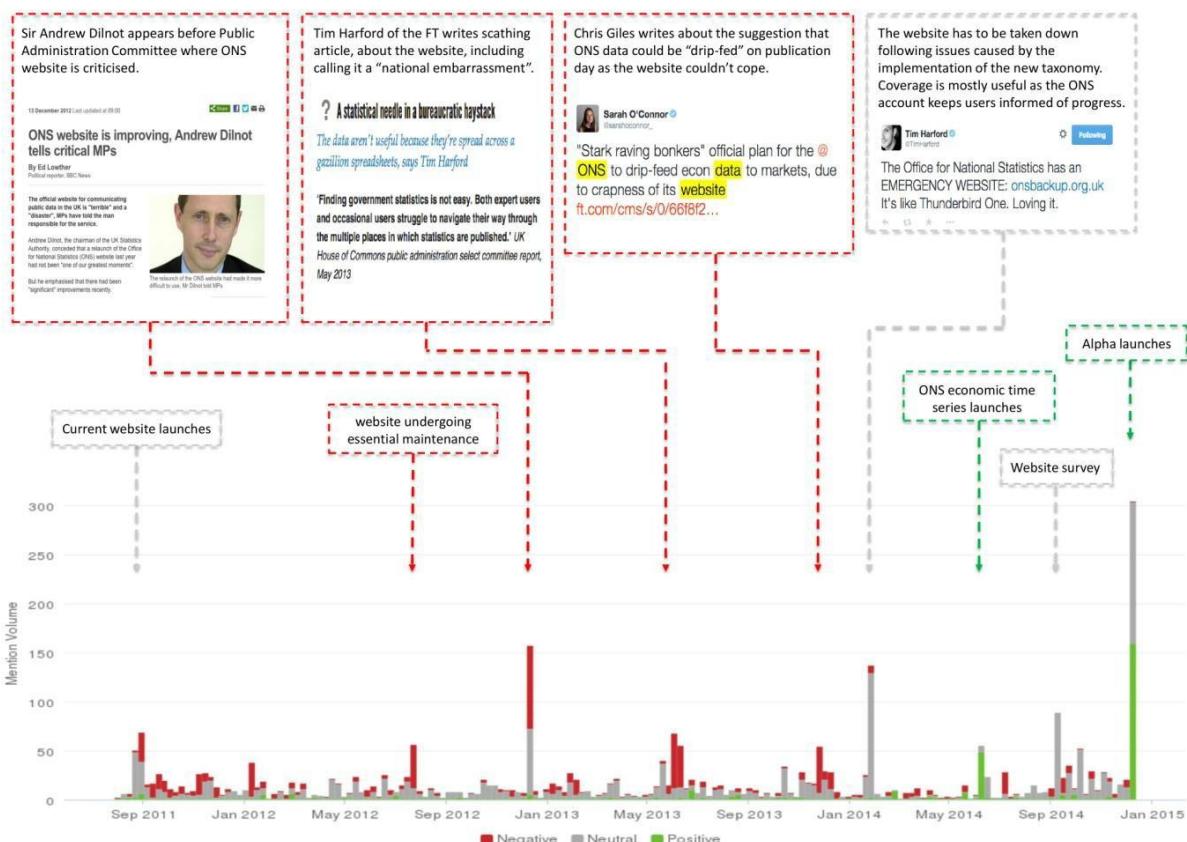
Follow

You know who would make great social/content marketing case study?

@ons.

Gone from boring stats to really interesting data visualisations

We used sentiment mining software to track user feedback, which showed a rise in positive sentiment as we began to launch user-driven improvements.



Meeting diverse user needs: ONS invested in an on-site user testing lab to ensure that digital developments could be tested with representative users throughout the delivery of any new or redesigned digital service. Initial user research based on a survey of 400 users, looked at users' motivations and behaviours and split users into three distinct personas – the Expert Analyst, the Information Forager and the Inquiring Citizen⁸. This, combined with greater analysis of web analytics and user testing of working software, gave us an informed view about who used our statistics.

⁸ <http://digitalpublishing.ons.gov.uk/2014/04/02/the-persona-touch/>

It was a challenge to build a new website to meet the diverse needs of the three personas. While the activities of the Expert Analyst and the Information Forager were related, the Inquiring Citizen came with different expectations and needs. There was a risk that in trying to serve all needs, we would fail to meet any. We gained agreement from the UKSA Board that we would build an Alpha versionⁱ⁹ of a new ONS website in 12 weeks which would focus on the Information Forager, to ensure we could quickly build a prototype to test with users.

However, we still needed to learn what would work for the Inquiring Citizen. The Chair of UKSA had set a vision for more accessible content for the citizen user. The current website had been updated in 2012 with “Theme pages” which curated content into topics such as Economy. Each Theme provided visual and short-form content as overviews for the time-poor, or the statistically less literate. However the website had not been designed for use on mobile devices and was not optimised for search engines. This didn’t provide a good foundation for learning more about the Inquiring Citizen, who would be the least likely of all our users to come directly to the ONS website on a desktop computer.

We had learnt lessons from the Theme pages work. While some of the content was popular with users (with an article on the percentage of marriages ending in divorce¹⁰ remaining one of the most visited articles on the website every month for over a year) the organisation was not experienced in creating topical content for the Inquiring Citizen. For example, some producers found it difficult to create a short title that was not open to misinterpretation, which meant some headlines didn’t capture the attention of the intended audience (or the search engines). An Editorial and Communications Group was established to make decisions on the suitability of content, but the lack of a single decision maker, or established commissioning criteria, sometimes led to content producers disagreeing over the relevance and suitability of content for the Inquiring Citizen.

At the risk of splitting our audience, stretching our resources and fragmenting the ONS web estate further, we launched a prototype experiment in January 2015. Called Visual.ONS¹¹, it set out to challenge the status quo for the good of the Inquiring Citizen in five main ways:

1. Content is not pre-announced. The Code of Practice states that all statistical releases should be pre-announced, normally at least 4 weeks before publication. However, when the Theme pages were conceived, UKSA agreed that if there was no new data being published, we did not need to pre-announce. This was a useful precedent for Visual.ONS as pre-announcement didn’t help our aim to create content as a response to topical events (eg triggered by the news agenda). It also meant publication didn’t have to happen on the pre-announced date, if the quality standard had not been met.
2. Joint sign-off between the authors and the publishers is critical. If the product does not meet criteria of statistical accuracy and rigour, *and* presentational

⁹ <http://alpha.ons.gov.uk/>

¹⁰ <http://www.ons.gov.uk/ons/rel/vsob1/divorces-in-england-and-wales/2011/sty-what-percentage-of-marriages-end-in-divorce.html>

¹¹ <http://visual.ons.gov.uk/>

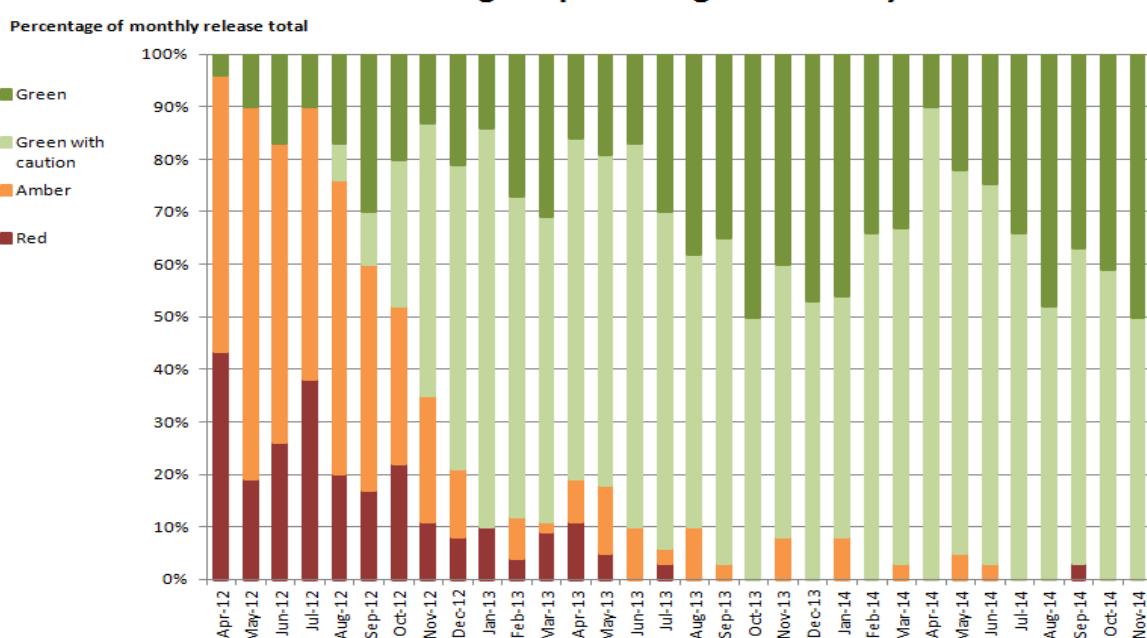
standards and editorial relevance, it will not be published. As the content does not need to be pre-announced, user expectations do not need to be managed.

3. Content is not restricted to a standard publishing time of 9.30am. Visual.ONS can publish a fresh insight from already published data at any time in accordance with what is in the news for example, or to time with common patterns in mobile browsing – over breakfast, lunch or during the commute.
4. Content assumes little prior knowledge of the subject. Explanations of required technical language are provided. Short articles, written using Plain English, demonstrate relevance to topics of general public interest.
5. As the name suggests, Visual.ONS values visual content over written content, giving time-poor users more chance of retaining the information, and more motivation to share in social media. Visual content is designed mobile-first, including responsive charts for example and for social sharing, making the content personal to the user wherever appropriate.

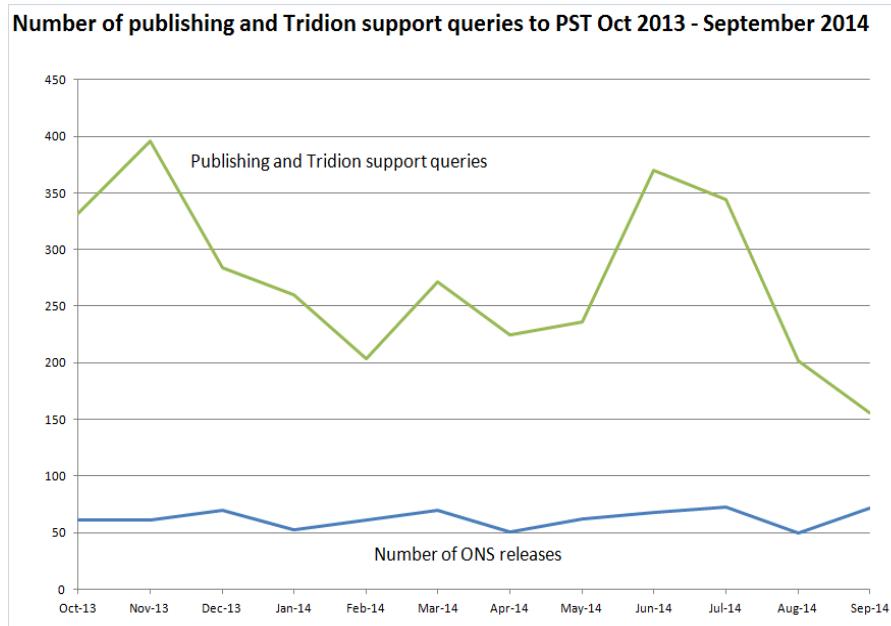
Establishing a new Digital Publishing Division Drivers for change

Quality concerns: ONS had run a devolved publishing model for two years, where up to 400 people published directly to the ONS website with no pre-publication intervention from publishing staff. This was unpopular internally. Statisticians had been given a minimal amount of training on the Content Management System before it went live, advice and guidance were not fully developed or understood and no extra resource had been made available to the statistical business areas, so the work was absorbed by busy teams. A small publishing team provided some central support and quality control. Over three years, their spot checks of published material evidenced issues with the quality of presentation, with inconsistent approaches to content lay-out and design of charts, readability concerns, content that would not meet W3C accessibility standards, and a lack of, or incorrect discovery metadata contributing to poor search results.

Health check ratings as percentage of monthly total



In the 12 months to September 2014 the publishing team answered 3,280 publishing support queries, the equivalent of over 4 queries per ONS release.



Benchmarking against other NSIs

Survey responses from 23 National Statistical Offices, uncovered that 30% of respondents had fewer than 10 staff with access to the Content Management System, and that emerging quality control processes for online dissemination included roles such as an Editor in Chief. ONS concluded that a devolved publishing model was not serving the users, and that with the establishment of a Digital Publishing Division, it was time for a new publishing model.

Challenges and outcomes

Integrating publishing expertise

Until the establishment of a Digital Publishing Division, there was a very subjective and therefore inconsistent view of what good looked like across the organisation. ONS staff had limited access to the internet to horizon scan or network with experts outside the organisation, and no senior leader with a background in digital publishing to set standards or to measure value. It was clear that controls needed to be established in a way that enabled collaboration between a new Digital Publishing Division and statistical experts. Publishing experts brought specialist skills in user research, data visualisation, content design, content management and web publishing, but to integrate these skills into the organisation meant introducing cultural change and reframing roles and responsibilities in four key areas: user research, product development, publishing and quality control.

User research: User research was limited to asking users what they wanted, and feeding that request into a web development team. This led to a superficial understanding of user need. For example, there was a bias towards publishing in

PDF. Web analytics showed high numbers of downloads and anecdotal evidence suggested some users wanted a PDF, but there was no clear idea of why. On further investigation, it was the limitations of the website print function, and the design of the web-pages, which created the demand for PDF. The decision making process was changed to ensure development was driven by user research findings, that user insight was assured by professional user researchers and a single Service Manager made decisions.

Providing user insight was critical to making the case for change. However, the current website was not built in a way that enabled deep analysis using web analytics software. Also, since the website lost 50% of its traffic when it launched without redirects in place in 2011, there was a preoccupation with tracking and increasing the numbers of visitors. We established a range of metrics – such as dwell time, access by device and bounce rate – that gave more insightful management information and provided a trigger point for further user research. It was also critical for us to work with other areas of the organisation to gain insights from telephone and face-to-face interactions with users.

Product development: While some statisticians remained wedded to print formats, others had an appetite to experiment with new digital formats. This led to public experiments with video and infographics that did not involve publishing experts and some were not produced to professional standards. Not only did this lead users to question the quality of the statistics, but also set unrealistic expectations amongst less digitally confident staff about what was expected of them. A data-driven approach was used to evaluate the experiments – looking at user engagement based on objective measures such as the number of views and embeds of video - and a Digital Board established to make cost-benefit decisions based on that data. As a result, the ONS made a decision to change its approach to video production, and evidenced the value of multidisciplinary teams of designers and statisticians working together on visual products.

The Division worked with a cross-government Good Practice Team (who provide guidance to the UK statistical community for example, on how to explain change and uncertainty in statistics¹²) and the ONS Statistical Products Working Group, who sourced case studies of best practice, organised events to share knowledge and reward good work, and set-up peer reviews of statistical releases. It was critical to build relationships and work collaboratively in a supportive environment, rather than set up a “Parent/ Child” relationship between publishers and statisticians.

Publishing: Even though the initial introduction of a devolved publishing model had been unpopular, statisticians liked having control over when they published and were reluctant to change the model. Timescales were often tight, and dedicated staff would work evenings and weekends to meet deadlines. While everyone could see the benefit of working more collaboratively with publishing experts, there were concerns that ceding control could mean publication deadlines were missed, or quality affected as non-statisticians would be involved in the process and could make errors. To test the model, a series of pilots were

¹² <https://gss.civilservice.gov.uk/statistics/presentation-and-dissemination/communicating-uncertainty-change/>

undertaken over six months, with four teams responsible for publishing some of the most challenging releases. A multi-disciplinary team of publishers and statistical authors, worked together from the start, with a focus on simplifying the process, and a principle of “the right person for the right job” in order to give statisticians more time to quality assure the data and publishers an opportunity to meet publishing standards ahead of publication eg by providing a proof reading service. The model was evaluated against agreed success factors on the quality and timeliness of the publishing.

Quality control: The Division produced new standards, including infographic guidelines¹³, a style guide¹⁴, training materials, courses and clinics and curated a Digital Festival¹⁵, bringing in experts from other organisations to talk about methods such as Data Storytelling and Search Engine Optimisation. While the new publishing model would enable better quality control, it was critical that all staff involved in producing statistics had an awareness of digital production.

A Web Standards Board was set up to ensure consistency in technical standards and tools across web teams (eg software for web operations, file-naming conventions, domain management).

A Data Committee was established to agree on open data standards and measurements, such as whether the organisation should aim for 5* open data¹⁶, or measure itself against the Open Data Institute’s Open Data Maturity Model¹⁷. A Digital Board was established to make strategic decisions.

Senior Digital Publishing staff joined a cross-government committee for Presentation and Dissemination, influencing the strategic direction for the communication of statistics across government. An annual event is held to share best practice.

Lessons learnt

Collaboration involves speaking the same language and building trust. Statisticians were cautious about any changes to ways of working, and didn’t have much faith in web projects after the failure of the 2011 website launch. Considered communications and creating opportunities to share knowledge between professions has been critical to success.

Early experiments in publishing infographics and videos meant the ONS was active in developing digital content before it had established user needs, strategy, an operating model, standards, and evaluation criteria and tools for the work. This brought risk to reputation, and put pressure on staff. An environment needs to be created where quality, innovation and working at pace are equally valued.

Introducing new standards can appear a burden to those who have to work to them and can discourage staff from taking responsibility for quality. Statistical releases are

¹³ <http://digitalpublishing.ons.gov.uk/2013/10/29/the-infographic-superhighway/>

¹⁴ <http://style.ons.gov.uk/>

¹⁵ <http://digitalpublishing.ons.gov.uk/digital-festival-2014/>

¹⁶ <http://5stardata.info/>

¹⁷ <http://opendatainstitute.org/blog/public-draft-of-the-open-data-maturity-model>

subject to a number of different quality reviews, from both within and outside the NSO. The proliferation of quality controls can be confusing and frustrating for producers. The quality reviewers are not always aligned on standards, nor understand the practical implications of their recommendations. It is critical to align standards across various bodies and communicate the benefits of the new standards.

Using social media to give a human voice to the organisation and ‘working in public’ by writing frank accounts of progress on the blog, meant critics were more tolerant when we did make mistakes. At times we pushed editorial and technical boundaries too far in an attempt to do new things, and despite this we saw much more neutral feedback than in the past.

Conclusion

The Digital Publishing Division is now two years old. In establishing the work of the Division it has been critical to both build strong relationships within the organisation and look outwards to draw on best practice. The Division has been fortunate to be working at a time when there is a digital and data revolution taking place in UK Government.

A new publishing model, utilising multi-disciplinary teams to publish statistical releases is now being rolled out across the organisation.

A decision is yet to be made about whether the Visual.ONS experiment is to be launched as a mainstream service for citizen users, but early indications show good take-up, with the single most popular content item on the site (‘Where do single people live?’ for Valentine’s Day) attracted over 160,000 views, largely due to favourable reviews and direct links from the BBC.

The Alpha version of a new ONS website launched in December 2014 and received a positive reception with stakeholders and users. The development of a Beta version of a new ONS website is on track to deliver a public beta in 2015.